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ADVOCACY GROUP AND NEWS MEDIA FRAMING OF PUBLIC POLICY ISSUES: FRAME MAPPING THE WETLANDS DEBATES

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Bonnie Parnell Riechert
May 1996

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DEDICATION

This dissertation is dedicated to
my teacher in Communication Scholarship,

M. MARK MILLER

Professor of Journalism
The University of Tennessee, Knoxville
College of Communications

And, his teacher,

BRUCE H. WESTLEY

Emeritus Professor of Journalism
University of Kentucky
Coauthor of the Westley-MacLean Model of Communication

My teacher in Higher Education Administration,

T. H. KLINDT,

Professor of Agricultural Economics and Associate Dean,
The University of Tennessee Agricultural Experiment Station

And, his teacher,

B. R. BEATTIE,

Professor and Head of Agricultural Economics
Arizona State University

"A teacher who can arouse a feeling for one single good action, for one single good poem, accomplishes more than he who fills our memory with rows on rows of natural objects, classified with name and form."

—Goethe

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Dr. Dorothy A. Bowles is one of the country's foremost authorities on media law, government and media, and mass media and politics. Dr. James A. Crook is a leader in application of new technology and communications education, and he serves as editor of the *Journalism and Mass Communication Educator,* a journal of the Association for Education in Journalism and Mass Communication. The head of the Department of Marketing, Logistics, and Transportation, Dr. David W. Schumann is known widely for important research contributions related to how people are persuaded by marketing communications (including advertising, promotion, and point-of-purchase) as well as the measurement of customer value and communication. Dr. Michael W. Singletary is recognized as one of the country's most prolific scholars in communication research.

Dr. M. Mark Miller, chairman of the committee, is a leading scholar in quantitative methodologies, political communication, science communication, risk communication, and mass media and politics. He is active in the Midwest Association for Public Opinion Research and served as the organization's president in 1991.

This is the 14th dissertation directed by Dr. Miller; his previous doctoral advisees have gone on to assume national and international leadership in

communication education, and they are making important contributions in communication scholarship and the studies of public opinion. Acknowledgments in the preceding dissertations directed by Dr. Miller mention students' having come to Tennessee to learn about quantitative research from him and his "eagerness to sit around on Friday afternoons and run data" (Andsager, 1993, p. i); "his statistical savvy" (Badger, 1987, p. iii), his "dedicated work" (Boone, 1993, p. iii); his "willingness to argue, to instruct, and to correct" (Dyer, 1991, p. ii); his "extraordinary expertise," his being "always available" (Paddon, 1985, p. iii), his "unselfish dedication, dry sense of humor, timely criticism, and Socratic teaching style" (White, 1989, p. ii), how developing the dissertation was "enjoyable," and that Dr. Miller is "among my good friends" (S. E. Everett, 1989, p. iv).

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Similarly, Swindel (1985, p. ii) recalls that "Professor Mark Miller has taught me more than I even imagined I could learn, and provided me with the skills to learn much more. He is an excellent teacher and a true friend."

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Another of his advisees confesses, "I invited Dr. Miller to chair the committee knowing he would be a tough task master. I was not disappointed" (Melanson, 1990, p. iv).

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The concept for the dedication page of this document is credited to Lanigan

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This dissertation represents the capstone of my doctoral program of study at The University of Tennessee, which will be remembered as a highlight of a lifetime. This was a program of study in communications including a primary concentration in journalism and an emphasis in science communication, with a secondary concentration and official minor in marketing. Without a doubt, this educational program was excellent in its quality. It was a grand experience to study under teachers of such caliber: in the College of Communications—Dr. Dorothy Bowles, Dr. Ed Caudill, Dr. Jim Crook, Dr. George Everett, Dr. Herb Howard, Dr. Mark Littmann, Dr. Mark Miller, Dr. Mike Singletary, and Dr. Ron Taylor; in the Department of Marketing, Logistics, and Transportation—Dr. Ernie Cadotte, Dr. Roger Jenkins, Dr. Joe Rentz, Dr. David Schumann, and Dr. Bob Woodruff; in the Department of Educational Administration—Dr. Peter Husen; in the Department of Higher Education—Dr. Malcolm McInnis; in the Department of Management—Dr. Mike Rush; and in the Department of Statistics—Dr. Mary Sue Younger.

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ABSTRACT

This dissertation focuses on the substantive domains of (1) how public policy issues are framed, or selectively defined and represented, by different stakeholders and (2) representation of competing issue frames in news media coverage. A computer-assisted content analysis is conducted on discussion of wetlands in news releases by different advocacy groups and on news media coverage related to wetlands.

Methodologically, the dissertation introduces and elaborates the *Frame Mapping Method,* a unique application of Concept Mapping, for identifying frames in natural language text and investigating the relative prominence of competing issue frames in news media coverage. Frame Mapping employs the *VBPro* and *VBMap* computer programs for analyzing verbatim text and multidimensional scaling of concepts. Concept Mapping and Frame Mapping are based mathematically on the frequency and co-occurrence of key terms in text.

Frame Mapping identifies the words and phrases used most frequently, and relatively exclusively, by each source or stakeholder in a set of frame makers. The method also allows for the graphical representation of the frame terms.

This study identifies and compares policy issue definitions by two diverse stakeholder groups—conservationists and property-owners—in the U.S. policy debates related to wetlands. Multidimensional maps are derived from the term co-occurrence data structure of the wetlands issue discussion by conservation and property-owner

advocacy or interest groups.

The relative representation over time of competing issue frames in news media coverage of wetlands also is investigated. Specifically, this study compares the prominence of the conservation and property-owner frames in the news media over time. Additionally, the influence of sources on news media content is examined; the relative prominence of stakeholder frames, relative to the use of particular stakeholders as news sources, is compared.

A sample of 1,226 news releases that mentioned wetlands, originating from various organizations, was obtained from the PR Newswire database through the DIALOG online information service. Frame Mapping is used to analyze some 102 of these news releases that originated from conservation and property-owner advocacy groups (such as the National Audubon Society and the American Farm Bureau Federation, respectively). The Frame Mapping procedures specify the sets of substantive key terms that represent the unique issue frame by each of these sources or stakeholders. Significant differences in occurrence of the specified frame terms are demonstrated between the news releases from the two types of stakeholders.

News media coverage relating to wetlands is investigated with respect to (1) relationship between news source and relative representation of stakeholder frame and (2) relative prominence over time of the contrasting frames.

News articles that mentioned *wetlands* and that were distributed by Associated Press from July 1984 - June 1995 (n = 1,688) were obtained for the analysis, from the AP Newswire database, through the DIALOG online information service. Some

1,465 of these Associated Press articles relating to U.S. wetlands are examined for the relative prominence over the 11-year period of the conservationists' and property-owners' wetlands issue frames. Specifically addressed are the relationships among the use of different stakeholder advocacy groups as news sources and the prominence of the particular stakeholder frame in the news media. Comparisons of stakeholder frame prominence are made under three conditions of representation as news sources: in articles in which stakeholder groups are mentioned, in articles in which stakeholder representatives are quoted either indirectly or directly, and in articles in which stakeholder representatives are the first directly-quoted news source in the article.

Significant relationships are found among the use of specific stakeholders as news sources and the relative prominence of their particular issue frame in the news articles.

These findings provide quantitative evidence that diverse stakeholders in complex policy issues will tend to frame, or selectively define and represent, an issue differentially. Furthermore, these findings suggest that the use of particular stakeholders as news sources—and the type of attribution given to the news sources in news articles—significantly affects the representation of competing issue frames in news media coverage.

Additionally, the analyses reveal that the competing conservation and property-owner frames changed systematically over time. In the period of 11 years covered by the study, from 1984 to 1995, the conservation frame initially was more prominent that the property-owner frame. However, in 1990-91 the conservation frame declined

in relative prominence while the property-owner frame received increasing relative prominence in news coverage.

The study contributes to understanding of the substantive phenomena of advocacy group and news media framing of public policy issues. Moreover, it holds implications for building theories of news content, media agenda building, and policy agenda building. Perhaps most notably, the study illustrates the usefulness of the Concept Mapping procedures, and specifically the Frame Mapping Method, in precisely detecting, specifying, and comparing different issue frames and in analyzing content in news media coverage of complex issues. This study thus addresses the current critical need for improved methods for conducting frame analysis and investigating media content.

PREFACE

It seems appropriate to devote a dissertation at The University of Tennessee to the topics of framing and political communication. After all, in the preface of his influential book most often referenced simply as *Frame Analysis,* Goffman (1974) states the ideas presented in the volume came from his sociology "lectures at Brandeis and the Universities of Tennessee, Manchester, and Edinburgh" (p. vii). Secondly, Nimmo contributed pioneering research in political communication and co-edited the efficacious *Handbook of Political Communication* (1981) as a member of the political science faculty at The University of Tennessee, Knoxville. Thirdly, the analytic procedures employed in this research project were developed by M. Mark Miller as a member of the College of Communications faculty at The University of Tennessee. These content analysis procedures are the innovative Concept Mapping and Frame Mapping methods using the VBPro and VBMap computer programs for analyzing verbatim text and multidimensional scaling of concepts. This study seeks to integrate some of the conceptual, theory-related, and methodological contributions of these eminent scholars.

The title of this dissertation violates the general guideline of not including the methodology of a study (see Castetter & Heisler, 1988); however, in this case *Frame Mapping* is included in the title because the new methodology is introduced here and promises to answer the need recognized by contemporary researchers for improved methods for precise measurement of frames and content in news media coverage and

other natural language text.

Comments and observations of readers related to the discussion presented here are welcome and even solicited. R. A. Fisher (1936) said it well, writing from the Rothamsted Experimental Station:

> Many small but none the less troublesome errors have been removed; I shall be grateful to readers who will notify me of any further errors and ambiguities they may detect. (p. vii)

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CHAPTER I.

INTRODUCTION

Who frames the news? This is a question of central interest to communication researchers and of great relevance to the role of the news media in a democratic society.

Framing of complex policy issues by stakeholders and in the news media form the focus of this dissertation. Specifically, the study addresses some critically important questions raised by Gitlin (1980), Cobb and Elder (1983), and Westley (1976).

"Where do news frames come from?" Gitlin (1980) asks. *"How are they fixed into the appearance of the stable, the taken-for-granted? And how, despite this, are the prevailing frames disputed and changed?"* [italics added] (p. 249). Gitlin and others discuss the power of the media in constructing reality.

From political science comes a similar question—*"Where do public policy issues come from?"* (Cobb & Elder, 1983, p. 12). The process of how an issue gains access to an agenda is of basic interest, they suggest. But, they ask, *"Who participates in the process?"* (p. 14).

Westley (1976) directs attention to the political agenda and asks, *"What makes it change?"* (p. 43). Among the sources of influence, he suggests, are special interest groups that "are themselves in part a consequence of events and an influence upon media agendas" (p. 46).

Influences from outside the media organization—such as special interest groups

and other stakeholders that are quoted in news articles as news sources—are identified by Shoemaker and Reese (1991) among potential influences on news media content. The researchers note the need for more rigorous research that elucidates the various influences on news media content.

In the substantive domains of issue framing by diverse sources, news media issue framing, and reliance of journalists on news sources converge the theory-related domains of news content and media sociology or agenda building. This study reviews the development of scholarly thought related to framing, beginning with Goffman's (1974) originative text, *Framing Analysis: An Essay on the Organization of Experience,* and continuing with review of a number of subsequent studies on "how the mass media operate in framing news events and defining political realities" (Gamson, 1985, p. 615). The consensus by a number of communication researchers on the need for more rigorous quantitative procedures for identifying and comparing news frames is emphasized.

In response to this need, this study introduces and illustrates an innovative multidimensional scaling method that addresses the critical need for improved reliability and rigor in examining themes and frames in text. The *Frame Mapping Method* described here is a special application of *Concept Mapping* and uses *VBPro,* a set of computer programs developed for content analysis of verbatim text and multidimensional scaling of concepts (Miller, 1995a, 1995b).

The topic of wetlands is the public policy issue selected for this study of framing both by diverse stakeholders and in news media coverage. The wetlands issue

has remained on the U.S. policy agenda for several years and is rife with controversy, competing points of view, and complexity of implications. Specifically investigated will be the issue frames by two active stakeholder groups in the ongoing wetlands debates—conservationists and property-owners. These stakeholders are represented by advocacy groups such as the National Audubon Society and the American Farm Bureau Federation, respectively. Frame Mapping procedures are used to investigate and determine the distinct definition of the wetlands policy issue by these two stakeholder groups. Multidimensional configurations will be derived to illustrate visually the convergent themes within stakeholder frames, as well as the divergence of these frames.

Identification of the differential framing of the wetlands issue by the conservation and property-owner advocacy groups allows for the analysis of the frames' "ebb and flow of prominence and media usage over time" (Gamson & Lasch, 1983, p. 413). News coverage of wetlands in Associated Press over an 11-year period (from July 1984 - June 1995) will be examined to assess whether shifts occur in prominence between the *Conservation Frame* and the *Property-Owner Frame* in the wetlands debates. These shifts may be identified and may suggest areas for future research in news media framing and agenda building.

The study also will address specifically the influence of news sources on news media content. Relationships among the relative prominence of particular stakeholder frames in the news articles and reference to those stakeholders in the articles will be investigated. These comparisons will be made under three conditions of reference as

news source: (1) in articles that mention a particular stakeholder group at all, (2) in articles that quote a representative of a particular stakeholder group (whether indirectly or directly), and (3) in articles that quote a representative of a particular stakeholder group as the first directly-quoted news source in the article.

The implications and future research suggested by the frame analysis will be discussed, as well as the implications of the findings related to news source influence on media content. The relevance of news media content in policy agenda building in a democratic society also will be explored. Finally, the usefulness of Concept Mapping and Frame Mapping in investigating framing in communication and in text such as news coverage will be demonstrated.

These relationships and analysis procedures will be investigated in the context of the continuing U.S. policy debates related to wetlands. The study addresses the general question, *who frames the news?* Or, *to whose views do the media give voice?*

CHAPTER II.

LITERATURE REVIEW

AND CONCEPTUAL DEVELOPMENT

Framing

This section will address three objectives. First, the relevance of framing in studies of communication, political communication, and related areas will be argued. Second, the development of scholarly thought related to certain aspects of framing, with particular emphasis devoted to news media framing, will be reviewed. Thirdly, the current state of understanding and the adequacy of methodologies used in the study of communicator and news media framing will be assessed, with discussion focusing on potential areas for continued theory-related and methodological contribution in this research area.

It will be argued that framing is a powerful and pervasive force in communication processes and merits the attention of researchers in a variety of fields. However, first it is helpful to consider what is meant by the word *framing*. While the term holds a diversity of meanings, as will be elaborated, generally framing involves *selecting* or *emphasizing* certain aspects—of experience or issues—over other aspects. Thus, a workable definition for *framing* is *the selective definition or representation of an event, issue, or idea.*

Frames "have at least four locations in the communication process: the communicator, the text, the receiver, and the culture," according to Entman (1993):

> *Communicators* make conscious or unconscious framing judgments in deciding what to say, guided by frames (often called schemata) that organize their belief systems. The *text* contains frames, which are manifested by the presence or absence of certain keywords, stock phases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments. The frames that guide the *receiver's* thinking and conclusion may or may not reflect the frames in the text and the framing intention of the communicator. The *culture* is the stock of commonly invoked frames; in fact, culture might be defined as the empirically demonstratable set of common frames exhibited in the discourse of talking and thinking of most people in a social grouping. (pp. 52, 53)

In all these four locations, framing involves "selection and highlighting" (Entman, 1993, p. 53), "winnowing and ranking" (Maher, 1994, p. 2), and emphasis—whether intentional or unintentional—of certain information along with the exclusion of other information.

Thus, people engage in framing every day, whether consciously or unconsciously, just as "Moliere's M. Jourdain who spoke prose all his life without knowing it" (Anderson, 1986, p. 158).

Entman (1993) refers to "clusters of messages" (p. 57) as frames. As he notes, "the words *frame, framing,* and *framework* are common outside the world of scholarly discourse, and their connotation is roughly the same" (p. 52). Hence it is common to refer to one's *frame of reference,* or *frame of mind,* as well as the *framing* of issues and messages in communication.

In fact, no less than 20 definitions for the term *frame* are given in *The American Heritage Dictionary of the English Language* (1992). These include six definitions for the verb *frame,* including "to put into words; formulate: *frame a reply"* (p. 720). As a noun, the term *frame* is used for 14 meanings that include "a structure

that gives shape or support: *the frame of a house"* as well as "a general state or condition: *The news put me into a better frame of mind"* and also "something composed of parts fitted and joined together" (p. 720).

Similarly, *The Oxford English Dictionary* (1989) devotes several pages to the various possible definitions implied by the term *frame.* As a noun, the term is used to indicate "an established order, plan, scheme, system" as well as to include use in "the action of framing, fashioning, or constructing; a contrivance" (p. 140). The noun definitions of *frame* also include use in *frame of reference,* "a set of standards, beliefs, or assumptions governing perceptual or logical evaluation of social behavior" and "mental or emotional disposition or state (more explicitly, *frame of mind, soul,* etc)." (p. 140). As a verb, definitions of the term *frame* include "to shape, compose, give (specified) expression to" as well as "to shape, direct (one's thoughts, actions, powers, etc.) to a certain purpose" (p. 142). Additionally, the term can be used to indicate "to contrive (a plot, etc.); to devise, invent, fabricate (a rule, story, theory, etc.); to put together, fashion, compose; to put into words, express" or "to form, articulate, utter (words, sounds)" or "to form or construct in the mind, to conceive, imagine. More fully *to frame to oneself"* (p. 142).

The dictionaries cited above trace the development of the term *frame* from the Middle English *framen* and Old English *framian,* meaning "to further" or "to be helpful or profitable," derived from the word *fram,* meaning "forward."

Notably, the rich diversity of meanings of the term *frame* includes unconscious activity as well as conscious process. An example of unconscious, or accidental,

framing is seen in H. More's *Moses* (1782) III. 14: "A mother's fondness frames a thousand fears" (quoted in *The Oxford English Dictionary,* 1989, p. 142). An example of conscious, or purposed, framing is found in J. A. Froude's *Hist. Eng.* (1858) I. iv. 359: "The convocation . . . had framed their answer in the same spirit" (quoted in *The Oxford English Dictionary,* 1989, p. 142).

A number of useful definitions of framing are offered in recent studies related to this pervasive process. Frames involve "defining assumptions" (Rachlin, 1988, p. 103); framing involves "suggesting a central organizing idea" (Gamson & Lasch, 1983, p. 39). Selected examples of various definitions of *frame* and *framing* used in recent studies are presented in Table 1. The definition suggested here—the selective definition or representation of an event, issue, or idea—integrates the notions included in these definitions.

By calling "attention to some aspects of reality while obscuring other elements," the framing process has "important implications for political communication," observes Entman (1993). Public figures must compete for news frames:

> Framing in this light plays a major role in the exertion of political power, and the frame in a news text is really the imprint of power—it registers the identity of actors or interests that competed to dominate the text. (p. 55)

Gamson (1985) views the ambiguity involved in framing as a virtue, increasing its usefulness "as a bridging concept between two levels of analysis—between cognition and culture. A cultural analysis tells us that our political world is framed, that reported events are pre-organized and do not come to us in raw form" (p. 615).

Table 1. Selected Definitions of Frame and Framing

Study	Definition
Tankard et al. (1991, pp. 4-5)	"A **frame** is a central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection, emphasis, exclusion, and elaboration."
Entman (1993, pp. 52-53)	"The *text* contains frames, which are manifest by the presence or absence of keywords, stock phrases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments." Framing involves "selecting and highlighting some features of reality while omitting others."
Coleman et al. (1993, p. 9)	Frames are "interpretative packages that capture the central focal points of news stories."
Maher (1994, p. 8)	Framing is "the process by which both sender and receiver in a communication transaction winnow and rank units of meaning, and connect them to other units of meaning."
Williams et al. (1982, p. 5)	Framing is "applying context to the communication of issues."
Cutbirth et al. (1983, p. 6)	Framing is "a perspective or point of view."
Gamson (1989, p. 157)	"A *frame* is a central organizing idea for making sense of relevant events and suggesting what is at issue."
Rachlin (1988, pp. 3, 103)	Frames are "contexts within which events are presented" and "defining assumptions."
Gamson and Lasch (1983, p. 39)	Framing is "suggesting a central organizing idea of understanding events related to the issue."
Gitlin (1980, pp. 6-7)	"Frames are the principles of selection, emphasis, and presentation composed of tacit little theories about what exists, what happens, and what matters. . . . Media frames are persistent patterns of cognition, interpretation, and presentation of selection, emphasis, and exclusion, by which symbol-handlers routinely organize discourse, whether verbal or visual."
Tuchman (1976b, p. 1066)	"*Framing* implies identifying some items as facts, but not others (see Goffman, 1974)."
Goffman (1974, p. 11)	*Frame analysis* is a " . . . slogan to refer to . . . the organization of experience."

Framing is a dynamic process, ever subject to change or reframing. According to Gamson (1985), its "very vulnerability . . . makes it a locus of potential struggle, not a leaden reality to which we all inevitably must yield" (p. 615).

The relevance of media framing to the various stakeholders in the process of democracy, the development of public policy, and the practice of journalism cannot be overstated.

For instance, general awareness of framing principles and implications would help journalists improve balance and scope in news coverage. At least, as Hendrickson suggests (1994), journalists "would be less likely to inadvertently overlook potential important dimensions of the story, even if they ultimately choose not to explore them" (p. 137).

The following discussion will review the development of scholarly thought related to framing—and particularly news media framing, focusing on various definitions of framing and the methodologies used in studying its phenomena. Definitions of key terms used throughout this document are provided for reference in a glossary in *Appendix A*.

Early Conceptual Contributions

Researchers in numerous disciplines have studied various aspects of observable phenomena associated with framing since the publication of Erving Goffman's *Framing Analysis: An Essay on the Organization of Experience* in 1974. In this provocative book he suggests that people develop frames to help them understand

their experience:

> . . . what people understand to be the organization of their experience, they buttress, and perforce, self-fulfillingly. They develop a corpus of cautionary tales, games, riddles, experiments, newsy stories, and other scenarios which elegantly confirm a frame-relevant view of the working of the world. (p. 563)

Goffman (1974) modestly proposes that *frame analysis* is his "slogan to refer to . . . the organization of experience" (p. 11).

In contrast, Gamson (1985) gives him considerable more credit, portraying frame analysis as "Goffman's Legacy to Political Sociology" in an article with that same title. Goffman's ideas of frame analysis are directly useful in two ways, according to Gamson (1985): " . . . (1) in unraveling the micro-events that lead people to question taken-for-granted, common-sense assumptions about politics and (2) in understanding how the mass media operate in framing news events and defining political realities" (p. 615).

Goffman credits his inspiration largely to the phenomenological questions—related to reality and perception—posed by William James (1889), the notion of symbol typification developed by Alfred Schutz (1945), and the use of the term *frame* suggested by Gregory Bateson (1955).

Maher (1994) credits Bateson (1972) and Goffman (1974) for "being the first to use the term *frame* as a construct for how the individual organizes experiences" (p. 4).

Like the scholars who inspired him, Goffman was fascinated by incisive questions. In fact, this is how science proceeds, according to one philosopher of science: "That is the essence of science: ask an impertinent question, and you are on

the way to the pertinent answer" (J. Bronowski, 1973, p. 153).

According to Goffman (1974), frame analysis is a way in which scientists can learn to understand how people deal with the question, *"What is it that's going on here?"* [italics added] (pp. 8, 9). In fact, he suggests, often different things are occurring simultaneously.

James, rather than ask what reality is, asks (cited in Goffman, 1974, pp. 2, 250), "Under what circumstances do we think things are real?" By asking this, Goffman (1974) proposes, James "assumed that somehow reality in itself was somehow not enough, and instead, *principles of convincingness* were what really counted" [italics added] (pp. 250-251).

Schutz (1945/1962) carries James' interests further, crediting him for "touching on one of the most important philosophical questions" (p. 207) related to reality and scientific inquiry. According to Schutz (1945/1962):

> All interpretation of this world is based on a stock of experiences of it, our own experience and those handed down to us by our parents and teachers, which in the form of "knowledge at hand" function as a scheme of reference. . . . by active apperception our mind *singles out certain features* from the perceptional field, conceiving them as well delineated things which stand out over against a more or less unarticulated background or horizon [italics added]. (p. 208)

More to the point, Schutz says (1945/1962), "Meaning . . . is not a quality in certain experiences . . . but the results of an interpretation of a past experience . . ." (p. 210).

Natanson (1962) eloquently expresses this point in the introduction to a volume of collected works by Schutz:

> Men living in the paramount reality of everyday life are enmeshed in situations as *they* define them in the context of their lives. It is idle for the neutral observer to point out to the committed actors the "objective" situation. As Sartre puts it: for the Romans, Carthage was conquered, but for the Carthegenians, Carthage was enslaved. (p. xxxvii)

The third scholar providing primary inspiration to Goffman, Gregory Bateson, was recognized for important contributions in anthropology, enthnography, and psychotherapy. Bateson is described by his biographer (Lipset, 1980) as "a sort of anarchist from a disciplinary point of view" who would "nevertheless persist in fitting together data and theory in new ways" (p. 296). Goffman recognized and appreciated Bateson's superb powers of observation.

In penning the preface to Bateson's *Steps to an Ecology of Mind* (1972), Engel (1972) recommended it as "a sample of the best thinking" (p. viii) he had found, adding, "the essence of all our problems is bad thinking, and the only medicine for that is better thinking" (p. ix).

Bateson was enamored with questions, publishing many dialogues that he referred to as *metalogues,* which were collected and reprinted in *Steps to an Ecology of Mind* (1972), and which posed interrogatives like, "What is an instinct? . . . What is a black box? . . . Why do kittens and puppies play?" And "why do things get in a muddle?"

Bateson discusses (1955/1972) the psychological concepts of frame and context using the analogies of the picture frame and the mathematical set. He suggests a psychological frame "is (or delimits) a class or set of messages (or meaningful actions). . . . the frame merely assists the mind in understanding the contained

messages by reminding the thinker that the messages are mutually relevant and the messages outside the frame may be ignored" (Bateson, 1972, pp. 186-187).

Goffman draws on the writings of these scholars, suggesting his own contribution is one of bringing their ideas together. He says James' early questions related to our perception of reality suggest "a small manageable problem having more to do with the camera and not what the camera takes pictures of" (Goffman, 1974, p. 2).

Goffman (1974) carries his camera analogy a step further: "Any event can be described in terms of a focus that includes a wide swath or a narrow one and—as a related but not identical matter—in terms of a focus that is close-up or distant" (p. 8). Thus, the notions of frame analysis—inspired by James, Schutz, and Bateson, and synthesized and articulated by Goffman—led to a new perspective on analysis of news content, media performance, and mass media in democracy.

Portions of the Autumn 1976 issue of the *Journal of Communication* are devoted to the question, "What is News?" The title of Tuchman's (1976a) article—"Telling Stories"—offers one answer, based on her field observations in a large daily newspaper and in New York's City Hall. She suggests that news reports "exist in and of themselves" as "selective reality, rather than a synthetic reality as in literature" (p. 97).

Tuchman uses Goffman's definition of frame as an organizing principle for social events. Reporters, she argues, use the news story as frame, and in doing so, define the event. "As frames, news stories offer definitions of social reality"

(Tuchman, 1976a, p. 94). Some events may be excluded from news coverage because they do not fit the conventions of past story-frames, she suggests. Indeed, journalists seek events "in which they can locate *themes* [italics added] and conflicts of a particular society" (Tuchman, 1976a, p. 93). Framing "implies identifying some items as facts, but not others" (Tuchman, 1976b, p. 1066).

In a self-described extension of Goffman's logic, Tuchman furthered scholarly thought on framing, particularly with respect to the mass media, with the publication of *Making News: A Study in the Construction of Reality* (1978a). Based on a decade of participant observation and interviews with journalists, the book begins and ends with her thesis that "news is a window on the world" (p. 1, p. 217).

Frames "both produce and limit meaning," according to Tuchman (1978a, p. 209). Production and limitation of meaning are accomplished through the selection process—the selection by editors, related to *what* should be covered, and the selection by journalists related to *how*.

This principle is articulated in the Supreme Court opinion on *Columbia Broadcasting System, Inc. v. Democratic National Committee* (1973), delivered by Chief Justice Warren E. Burger (and discussed in Tuchman, 1978a, and Friendly, 1976). Justice Burger notes, "For better or worse, editing is what editors are for; and editing is selection and choice of material" *(Columbia Broadcasting System, Inc. v. Democratic National Committee,* 412 U.S. 94 [1973], p. 124; 93 S. Ct. 2080 [1973], p. 2097).

Reporters produce "a glut of information that must then be winnowed and

weeded," Tuchman observes (1978a, pp. 12-13). The inevitable result of this selection process is the attention afforded some topics and ideas and the overlooking of others:

> It seems trite to observe that knowledge is power. Yet that rationalist dictum is both a tenet of our society and a ruling premise of newswork. For power may be realized through the *dissemination* [italics added] of some knowledge and the *suppression* [italics added] of other ideas. And it may be reinforced by the way knowledge is framed as a resource for social action. News, as I have argued, is a social resource whose construction limits an analytic understanding of contemporary life. (p. 215)

By the media's selection of events and points of view on which to focus attention, they effectively frame and reframe those issues for the public, defining and redefining them (Tuchman, 1978a):

> For so long as hard news continues to be associated with the activities of legitimated institutions and the spatial and temporal organization remains embedded in their activities, news reproduces itself as a historical given. It not only *defines* and *redefines, constitutes* and *reconstitutes* social meanings; it also *defines* and *redefines, constitutes* and *reconstitutes* ways of doing things—existing processes in existing institutions. (p. 196)

The selection, framing, and interpretive aspects of news are discussed also by Gans (1979) in his influential and suggestively-titled book, *Deciding What's News: A Study of* CBS Evening News, NBC Nightly News, *and* Time. Journalists, he observes,

> being unable to report everything that happened in America, must select some actors and activities from the many millions they could choose. The result is a recurring pattern of news about a fairly small number of actors and activities. . . . Journalists cannot inform the audience about everything; but in deciding what they should include and not, they skirt the issues of what are the right questions. (pp. 5, 312)

Gans (1979) disagrees with the notion (popular among some journalists) that

the news media merely mirror the events in society, while he acknowledges the usefulness of the mirror theory in reminding that journalists "begin with what they deem to be an empirically graspable external reality" (p. 79). He credits phenomenological researchers (Berger & Luckmann, 1967; Molotch & Lester, 1974; Tuchman, 1972, 1978a) for insights into human perception of external phenomena and construction of reality. "Even before phenomenological theories became popular, sociologists had shown that events journalists ostensibly cover are themselves journalistic constructs that *frame* [italics added] chronologically and otherwise related phenomena" (Gans, 1979, pp. 79-80, referring to a classic study by Lang & Lang, 1953).

The referenced study by the Langs (1953), still widely cited, compared perceptions of participants and television viewers of a 1951 parade in Chicago honoring General Douglas MacArthur. Discussing the Langs' report, Boorstin (1971) comments:

> This ingenious study confirmed my observation that we tend increasingly to fill our experience with contrived content. . . . Actual spectators, with sore feet, suffered long periods of boredom. Many groups were apathetic. The video viewer, his eyes fixed alternatively on the General and on an enthusiastic crowd, his ears filled with breathless narrative emphasizing the interplay of crowd and celebrity, could not fail to receive an impression of continuous dramatic pageantry. (pp. 134-135)

Gans posits that in the process of packaging information as news, journalists give meaning to the activities being covered; in the words of Philip Schlesinger, they provide "interpretation on reality" (Schlesinger, 1972, p. 4, quoted in Gans, 1979, p. 81). As journalists "translate information into news, they *frame* it in a national

context, and thereby bring the nation into being" (Gans, 1979, p. 298).

In introducing his news media content analyses, Gans (1979) observes they "only begin to hint at how the news portrays America. Obviously, much more needs to be done" (p. 7). He calls for literary analysts to apply their insights and methods "to news stories that reach tens of millions of people" rather than devoting efforts to prominent writers of the past.

In *The Whole World is Watching: Mass Media in the Making & Unmaking of the New Left,* Gitlin (1980) offers a more detailed analysis of news frame establishment and shifts in his study of news coverage of the Students for a Democratic Society (SDS)—which was involved in public protests over the Vietnam War—in the 1960s and 1970s. Gitlin, who was the president of SDS in 1963-64, concludes from his qualitative analysis that the "more closely the concerns and values of social movements coincide with the concerns and values of elites in politics and media, the more likely they are to become incorporated in the prevailing news frame" (1980, p. 284).

The *selective* and *definitive* nature of news is observed by Gitlin (1980):

> . . . everyday, directly or indirectly, by *statement* and *omission,* [italics added] in pictures and words, in entertainment and news and advertisement, the mass media produce fields of definition and association, symbol, and rhetoric. . . . Mass media *define* [italics added] the public significance of movement events, or, by blanking them out, actively deprive them of larger significance. . . . The forms of coverage accrete into systematic framing, and this framing, much amplified, helps determine the movement's fate. (pp. 2-3)

In the media coverage of the activities of the SDS, according to Gitlin, some themes were emphasized and others were neglected. Numerous framing devices were

employed, such as trivialization, polarization, emphasis on internal dissension, marginalization, underestimation of numbers, disparagement of the movement's effectiveness, reliance on statements of government officials and other authorities, considerable attention to opposition to the movement, and delegitimization by use of quotation marks (diminishing the credibility, for instance, of a "peace march").

The news media may report claims with quotations marks, "these marks being one of the less gentle framing devices available to the press," as Goffman (1974, p. 109) observes parenthetically. In his example, a news article may report a rape or a "rape," the latter case in which the simple enclosure of a reference in quotation marks reduces the credibility (as Gitlin's term *delegitimization)* of a description.

The New York Times' frames for the SDS shifted during 1965 from respectful to trivializing and denigrating to unflattering, Gitlin suggests. Fred Powledge, who worked at the *Times* from August 1963 to December 1965, observes that when this kind of subtle communication is "done by smart people, it's never done in so many words" (quoted in Gitlin, 1980, p. 40).

Frames are as subtle as they are selective, Gitlin concurs. His thoughtful discussion merits lengthy quotation (1980):

> What makes the world beyond direct experience look natural is a media *frame.* Certainly we cannot take for granted that the world depicted is simply the world that exists. Many things exist. At each moment the world is rife with events. Even within a given event there is an infinity of noticeable details. Frames are the principles of selection, emphasis, and presentation composed of tacit little theories about what exists, what happens, and what matters. In everyday life, as Erving Goffman has amply demonstrated, we frame reality in order to negotiate it, manage it, comprehend it, and choose appropriate repertories of cognition and action. *Media* frames, largely unspoken and unacknowledged, organize the world both for journalists who report it and, in

> some important degree, for us who rely on their reports. *Media frames are persistent patterns of cognition, interpretation, and presentation, of selection, emphasis, and exclusion, by which symbol-handlers routinely organize discourse, whether verbal or visual.* Frames enable journalists to process large amounts of information quickly and routinely: to recognize it as information, to assign it to cognitive categories, and to package it for efficient relay to their audiences. Thus, for organizational reasons, frames are unavoidable, and journalism is organized to regulate their production. Any analytic approach to journalism—indeed, to the production of any mass-mediated content—must ask: What is the frame here? Why this frame and not another? What patterns are shared by the frames clamped over this event and the frames clamped over that one, by frames in different media and in different places at different moments? (pp. 6, 7)

Similarly, researchers will want to investigate the origination and evolution of news frames. "Where do news frames come from? How are they fixed into the appearance of the stable, the natural, the taken-for-granted? And how, despite this, are the prevailing frames disputed and changed?" (Gitlin, 1980, p. 249).

Several theories on the selection of news stories are described by Gans (1979) and recalled by Gitlin (1980). These include journalist-centered theories, theories focusing on the inertia or habit of the news organization, event-centered theories, and theories placing the selection of articles in institutions or social conditions outside the news organization, such as in the national culture, the audience, or the dominant ideology in society.

Gitlin (1980) credits Gans (1979) for recognizing that none of the theories is adequate in explanation and for synthesizing the views to explain "news as information which is transmitted from sources to audiences, with journalists—who are both employees of bureaucratic commercial organizations and members of a profession—summarizing, refining, and altering what becomes available to them from

sources in order to make their information suitable for their audiences" (Gitlin, 1980, p. 250).

In assessing areas for future research Gitlin (1980) calls for news frame analysis of media coverage of other movements—such as feminism and the environmental and consumer movements, as he bemoans the unmanageability of the task "for a single researcher lacking co-workers or more lifetimes" (p. 296).

Recent Media Framing Studies

Since these early studies and writings about framing and news media framing, researchers have conducted a number of related studies on media coverage using a variety of methods. A review of these indicates a rather consistent conceptualization of framing along with a recurring recognition of the critical need for an improved methods for identifying and comparing news frames.

A study of "Political Framing and Agenda Setting in the 1980 Presidential Campaign" by Williams, Shapiro, and Cutbirth (1982) employs traditional content analysis and telephone surveys. They describe framing as "applying context to the communication of issues" (p. 5). (In this dissertation, page numbers given for documents available in ERIC refer to the ERIC document page number.) The study suggests a strong correlation between audience and media agendas for issues presented in a campaign frame.

Traditional content analysis of network newscasts is used by the same authors (Cutbirth, Shapiro, & Williams, 1983) in a study of "The Ethics of Media Framing of

Issues in the 1980 Presidential Campaign," in which frames are considered again as contexts, and framing is described as "a perspective or point of view":

> We all engage in activities and evaluate them based on our point of reference. Framing is a function of our cognitive and affective structure. (p. 6)

Their studies are reported also in Williams, Shapiro, & Cutbirth (1983). A similar analysis by Shapiro and Williams (1983) addresses issue framing in newspaper coverage of a state gubernatorial campaign.

In a thoughtful discussion of media portrayal of proposed welfare reform, Gamson and Lasch (1983) describe the frame as "suggesting a central organizing idea of understanding events related to the issue" (p. 398). They use political cartoons to illustrate interpretive packages, which they suggest include the framing component dealing "with the gestalt or pattern organizing nature." They divide the "signature" of an interpretive package into framing and reasoning devices.

Framing devices, according to Gamson and Lasch (1983), include metaphors, exemplars (real events of the past or present), catchphrases ("attempted summary statements"), depictions, and visual images (p. 399). These may be accompanied by characteristic analyses they refer to as reasoning devices. "The devices that provide justifications or reasons for a general position are roots, consequences, and appeals to principle." Their analysis focuses on cultural themes, which "contain a core frame" (p. 408). They argue that frames may be studied to analyze the political culture of an issue, and they call for future research on "the ebb and flow of prominence and media usage over time" (p. 413).

Gamson (1985) offers an insightful discussion, observing that "Representatives of a movement organization are framing the challenge in a particular fashion by emphasizing certain features and denying others" (p. 608).

Gamson (1985, p. 616) recalls that as Goffman (1961, p. 133) observes, "We must start with the idea that a particular definition is *in charge of the situation."*

As Gamson (1985) notes,

> That the frame is implicit and participants unaware of it does not prevent them from acting in terms of it. On the contrary, the implicit nature helps insure this. Would-be challengers face the problem of overcoming a definition of the situation that they themselves may take as part of the natural order. (p. 616)

Carragee and Jarrell (1987, citing Gitlin, 1980) adopt Gitlin's definition of media frames as "consistent patterns of cognition, interpretation, and presentation . . . " (pp. 6-7). They conduct a content analysis of coverage by three newsmagazines of a series of peace group demonstrations, concluding that the "dominant frames in the newsmagazines' reporting on Action Week defined the West European peace movement as illegitimate, irrational and ineffectual" (p. 36).

Rachlin (1988) employs qualitative content analysis and literary/linguistic analysis in comparing framing of news accounts in *The New York Times, Time, Newsweek,* and foreign newspapers in portraying the Soviet shooting of Korean Air Lines Flight 007, a strike of the U.S. Postal workers, and the Solidarity movement in Poland. Influenced by Tuchman and Gitlin, Rachlin describes frames as "contexts within which events are presented" (p. 3) and as "defining assumptions" (p. 103). He refers to a redefinition of the KAL incident as a *reframing.*

Graber (1989) and Gamson (1989) raise some important issues related to use of sources and the usefulness of content analysis in studying media discourse. Graber calls for social scientists to:

> develop new theories to cope with the complexities of content and meaning. . . . When journalists choose content and frame it, they are constructing reality for their audiences, particularly when the story concerns unfamiliar matters and there is no easy way to test its accuracy. (pp. 145-147)

She suggests that too little attention has been given to the sources on which journalists rely for facts and comment, and she calls for more systematic examination of media content for ideological slants.

Gamson (1989), on the other hand, argues that a great deal of attention has been given to journalists' dependence "on sources in general and on official sources in particular plus all that this implies" (p. 160). Although earlier studies have offered accounts of frame sponsorship by image managers, he suggests that what is lacking "is a way of systematically relating such factors to outcomes measured through an analysis of media content. Frame analysis offers a way of specifying the relationship by focusing on the relative prominence of competing frames as a measure of outcome" (pp. 160-161).

As indicated in the title of his article, Gamson (1989) views "News as Framing." He describes sources and journalists as sponsors of frames, and he advances frame analysis as a way to identify omissions as well as inclusions. More than one frame may be suggested for many events; therefore questions about the prominence of competing frames in the same report merit the attention of researchers. He suggests:

> Facts have no intrinsic meaning. They take on meaning by being embedded in a frame or story line that organizes them and gives them coherence, selecting certain ones to emphasize while ignoring others. Think of news stories as telling stories about the world rather than as presenting "information," even though the stories, of course, include factual elements. (p. 157)

He repeats his call for research to "explain the relative prominence of given news frames and *how this ebbs and flows over time*" [italics added] (Gamson, 1989, p. 160).

Similarly, Gamson and Modigliani (1989) argue that media discourse and public opinion are parallel systems of constructing meaning, and researchers may study one or the other apart from the relationship between the two. They argue, "The process by which this issue culture is produced and changed needs to be accounted for *in its own right,* [italics added] regardless of any claims that one might make about its causal effect on public opinion" (p. 1). They view media discourse as both reflecting and contributing to public opinion, presenting a set of interpretive packages that give meaning to an issue. The frame is the "central organizing idea . . . for making sense of relevant events, suggesting what is at issue" (p. 3).

In discussing interpretive packages, they identify three sets of determinants: *cultural resonances* (similar to what Snow and Benford, 1988, refer to as *narrative fidelity), sponsor activities,* and *media practices.* Some frames resonate with broader cultural themes and thus will enjoy more popular appeal. Sponsor activities affect frames and packages in that savvy sources "are well aware of the journalist's fancy for the apt catchphrase and provide suitable ones to suggest the frame they want" (Gamson & Modigliani, 1989, p. 7). Media practices, they suggest, affect the process

to the extent that journalists accept the frames and packages offered by officials, leaving dissenters with the burden of proof.

In their framing analysis Gamson and Modigliani (1989) employ traditional systematic content analysis methods, supplemented with qualitative and interpretive analysis, to investigate coverage by television networks news, newsmagazines, editorial cartoons, and syndicated columns related to nuclear power.

Traditional content analysis methods also are employed by Swenson (1990) in a study of media framing of abortion issues in *The New York Times* and a large daily newspaper. She adopts the definition of frames proposed by Gitlin (1980, p. 7) as principles of selection, emphasis, and presentation. Swenson calls for continued research on framing changes in relation to political and social changes, and she notes the need for improved methodology for analysis of text.

Entman (1991) combines qualitative and quantitative content analysis with public opinion surveys to contrast coverage of major U.S. news media of the 1983 Soviet shooting of the Korean Air Lines Flight 007, which killed 269 people, and the 1988 United States' shooting of Iran Air Flight 655, which killed 290 people. He concludes that the "news frame itself can help render resistance by elites futile and politically foolhardy" and that the news frame can "reinforce itself" (p. 24).

Entman describes (1991) the existence of news frames at two levels—as mental organizing principles for information processing and as characteristics of news text:

> Frames reside in the specific properties of the news narrative that encourage those perceiving and thinking about events to develop particular understandings of them. News frames are constructed from and embodied in the keywords, metaphors, concepts, symbols, and visual images emphasized in a news

> narrative. Since the narrative finally consists in nothing more than words and pictures, frames can be detected by probing for particular words and visual images that consistently appear in a narrative and convey *thematically consonant meanings* [italics added] across media and time. By providing, repeating, and thereby reinforcing words and visual images that reference some ideas but not others, frames work to make some ideas more salient in the text, others less so—and others almost entirely invisible. . . . through repetition, placement, and reinforcing associations with each other, the words and images that comprise the frame render one basic interpretation more readily discernible, comprehensible, and memorable than others. (p. 7)

According to Entman, an interactive relationship exists between media frames in news texts and mental frames or schemata within the audience. He proposes not only that news organizations shape their coverage to suggest positive response from news consumers, but also that the expected responses of the public help mold the "rhetoric and actions of political elites, who are the primary 'sponsors' of news events" (Entman, 1991, p. 7, citing Gamson, 1989).

He further posits that the dominant news frame becomes likely to affect political outcomes. "The necessary condition for media influence on policy or politics is not that everyone interpret a story alike; it seems necessary only that significant majorities are thought to do so," he suggests (Entman, 1991, p. 8).

One of the key elements of the news frame relates to amount, prominence, and duration of coverage, aspects which together suggest the importance of an event. In fact, Entman (1991) proposes, "The essence of framing is sizing—magnifying or shrinking elements of the depicted reality to make them more or less salient" (p. 9). The amount of material on an event and the prominence with which it is displayed thus implies the event's importance. The frame of a news portrait can be enlarged to "penetrate the consciousness of a mass public" or shrunk "to miniaturize an event"

(pp. 9, 10) and public awareness.

Three areas, related to the effect of framing in media and audience information processing, merit the attention of future research focus, according to Entman. These include (1) audience autonomy, (2) media autonomy, and (3) identification of common framing devices. In the first case, he argues, a better understanding is needed of how news consumers come to accept the dominant news frame even when contradictory frames are available. Secondly, conditions promoting "administrative control over frames, versus more autonomous journalistic control, merit research, especially since journalistic autonomy is so critical to democratic theory" (Entman, 1991, p. 25). Thirdly, extended content analysis of news texts could further investigate the traits of media texts that Entman found to comprise framing: importance judgments, agency, identification, categorization, and generalization. He notes, "More content analysis explicitly informed by theories of framing and of information processing should be on the research agenda" (p. 25).

Drawing on Gans (1974), Gamson (1984), and Gamson and Modigliani (1989), Thompson (1991) offers a model for studying news framing using either qualitative or quantitative methodologies. Synthesizing others' definitions, he defines media framing as "a central organizing idea for news content that supplies interpretive background and suggests what the issue is through selection, emphasis, exclusion, and elaboration" (p. 518).

Methodological emphasis is developed by Tankard, Hendrickson, Silberman, Bliss, and Ghanem (1991 and 1992). "The concept of framing appears to be emerging

as a significant one in mass communication theorizing and research. The term is used widely by both communication researchers and media critics, as well as political insiders. . . . Framing appears useful to researchers as a means of referring to *how* an event is portrayed in a particular news story," they observe (1991, p. 1). Tankard et al. cite McLeod, Sun, Chi, and Pan (1990) who also argue for the importance of studying how the media present an issue.

One problem with studies of media framing, Tankard et al. (1991) posit, is an apparent lack of rigorous method for determination of what frames are being used in articles. Often this appears to be accomplished "by fiat":

> One unfortunate result of this tendency to define frames by fiat is that the researcher devotes little effort to being exhaustive about the possible frames that could occur in reporting on a particular topic. There may be a tendency for researchers to find the frames they are consciously or unconsciously looking for. At its worst, this would mean researchers would see only the one frame that they are sympathetic to or are expecting to see. (p. 1)

Tankard et al. (1991) review and synthesize definitions of framing by Tuchman (1978), Goffman (1974), Gitlin (1980), Gamson (1989), and Graber (1989) to offer: "A **frame** is a central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection, emphasis, exclusion, and elaboration" (pp. 4-5).

Their study introduces a *list of frames approach*—an effort to anticipate possible frames—and traditional content analysis methods to consider news framing of abortion issues. They compare the list-of-frames approach with the media package approach employed by Gamson and Modigliani (1989) and the multidimensional approach used by Swenson (1990). Tankard et al. (1991) conclude that all three

approaches share the two difficulties that frames and frame elements must be redefined for each topic being studied and that intercoder reliability is less than perfect. They conclude (1991), "Framing appears to be emerging as such an important concept in news studies that some effective method of measuring it needs to be found" (p. 12). This observation echoes the call by Gamson (1989) for improved methods for analysis of frames and media content. Several of these concurring calls for more precise and reliable methods are listed in Table 2.

Development of improved techniques for identifying and rigorously measuring media frames would allow for theory building in this area, Tankard et al. (1992) suggest. In their paper, "The Measurement of Media Framing," they criticize the "approach of the single researcher identifying and labelling frames by fiat—the Humpty Dumpty approach" (p. 14).

The reference is to the comment by Lewis Carroll's classic fictitious character to Alice in Chapter 6 of *Through the Looking Glass,* published in 1872:

> "When I use a word," Humpty Dumpty said, in a rather scornful tone, "it means just what I choose it to mean—neither more nor less." (cited in Bartlett, 1980, p. 613)

Qualitative analysis is used by Voland (1992) in a study of framing by the national prestige press of coverage on gays and lesbians. As Voland notes, "Framing theorists make a strong case that how news is framed—what is asked and not asked, what is included and what is excluded, who is asked and who is not, what is assumed and not assumed—serves to construct or define a version of reality for the audience, rather than a true picture of reality" (p. 160).

Table 2. Assessments of Frame Analysis Methodology

Study	Assessment
Tankard et al. (1991, p. 12)	"Framing appears to be emerging as such an important concept in news studies that *some effective method of measuring it needs to be found"* [italics added].
Maher (1994, p. 5)	"If framing is indeed as significant an influence as Goffman, Gitlin, Tuchman and others have suggested, why has it not been reliably measured?"
Hendrickson (1994, p. 139)	"In moving beyond the critical theory approach, we suggest it is important for research employing the concept of framing to approach it carefully, through rigorous methods and checks."
Gamson (1989, p. 160)	What is lacking "is a way of systematically relating such factors [frame sponsorship, etc.] to outcomes measured through an analysis of media content."
Entman (1991, p. 25)	"More content analysis explicitly informed by theories of framing and of information processing should be on the research agenda."
Shoemaker & Reese (1991, p. 213)	"Another reason for identifying the influence on media content involves our *need to develop precise and valid measures of content"* [italics added].
Gamson (1989, p. 157)	*"Frame analysis* offers a way of specifying the relationship by focusing on the relative prominence of competing frames as a measure of outcome."

Coleman, Bacaltchuk, and Lathrop (1993) address interactions of community pluralism, news framing, source use, and conflict in a study of coverage in six daily and four weekly newspapers of conflict related to local siting of a copper mine. Their investigation uses traditional quantitative content analysis, using coders to identify broad, thematic categories. They define frames as "interpretive packages that capture the central focal points of news stories. Frames should tell us the essential nature of a news story—what the story is all about. We argue that frames may indeed arise from political elites or claims-makers with the intention of conveying information with a particular accent or emphasis" (p. 9).

Entman (1993) provides a thoughtful and challenging assessment of the relevance of framing studies, noting the power of framing in the democratic process and suggesting framing merits attention as a new research paradigm.

Hendrickson (1994) suggests that the concept of news frames originated "from the application of the term 'frame' to the psychological process used by individuals to make sense of information, much as a schema does" (p. 12). In a combination of content analysis and experimental methods, she studies the interaction of individual schema and degree of framing or proportion of a newspaper or magazine article falling into a particular frame related to the topic of child maltreatment.

She observes the difficulty of coding and measuring frames reliably, using traditional content analysis procedures, presented by potential interference by the researcher's (or coder's) existing schema: "When media frames are reliably coded, then we can feel some assurance that the frame we have assigned to it is a part of the

manifest content and is not a reflection of the reader's or researcher's existing schemata" (Hendrickson, 1994, p. 131). She calls for continued research employing the concept of media framing: "In moving beyond the critical theory approach, we suggest it is important for research employing the concept of media framing to approach it carefully, through rigorous methods and checks" (p. 139).

Coleman (1994) discusses how news is "framed by reflecting the ideological rhetoric by claimsmakers" in the context of a controversy. In this regard, she explains, framing "refers to the 'central organizing ideas' found in news," (p. 51) which she uses "interchangeably with story 'theme'" (p. 52).

Two recent studies (Nicodemus, 1995; Krogman, 1995) investigate specifically the wetlands issue with regard to framing in news media coverage.

Framing of Bush's "no net loss" wetland policy in *The New York Times* from 1988-92 is investigated by Nicodemus (1995) using quantitative and qualitative content analysis. During the five-year period, the 24 articles related to wetlands in the prestige newspaper shifted generally "from advocating environmental goals to assaulting them" (p. 15). She concludes:

> As the debate evolved, . . . the coverage became more politicized and made more authoritative appeals as compared to the earlier coverage. The *Times,* in looking for authoritative and credible news sources, shifted from scientists to administrative officials. The Administration was largely portrayed as unified on the wetlands policy issue and as an arbitrator in the conflict rather than the force that would have eliminated much of what is now protected. In doing so, the press *reframed* [italics added] the argument as one of property rights rather than environmental values. (p. 15)

Nicodemus suggests that the *Times* coverage in 1988 emphasized the environmental value of wetlands, but by August 1991 the conflict was characterized in

the *Times* as one of aesthetics versus economic growth. According to Killingsworth and Palmer (1992, p. 26, cited in Nicodemus, 1995), the news media:

> cast environmentalists as the spoilers of economic development in a rhetoric that covertly (or unconsciously) upholds the values of industrialization and the creation of new jobs in a community regardless of the nature and source of these jobs. . . . The resulting portrait of the environmentalist comes out to be chiefly negative. The environmentalist is anti-development, antiprogress, against the building of this road or that power plant. (p. 13)

Nicodemus observes a higher incidence in wetlands coverage in the *Times* in 1991 compared to the periods immediately before and after, 1988-90 and 1992. She attributes the emphasis to congressional hearings and legislative bills on wetlands introduced in 1991. As she notes, the controversies surrounding the definition and classification of wetlands continue.

Krogman (1995) similarly observes the issue of wetlands regulation as "a focal point of environmental debates that center around the issue of public and private rights" (p. 1). She reports on qualitative interviews with a number of stakeholders involved in wetlands-related policy debates in Louisiana. "Over the past 15 years, various stakeholders in the wetlands debate, including regulators, members of the regulated community, and environmentalists and concerned citizens, have framed their arguments for regulating wetlands differently," according to Krogman. *"Stakeholders are able to shape policy by advancing these arguments in such a way to achieve interpretive dominance and enlist the support of various decisionmakers"* [italics added] (1995, p. 1).

The recurring themes in these recent framing studies include (1) the recognition of issue framing by stakeholders and in the news media as meriting

continued study by researchers in communication and related fields, and (2) the general consensus that an improved method for rigorously identifying, quantifying, comparing, and investigating issue frames is needed.

In reviewing the findings and methods of studies in media frame analysis, Maher (1994) raises a critically relevant question: *"If framing is indeed as significant an influence as Goffman, Gitlin, Tuchman and others have suggested, why has it not been reliably measured?"* [italics added] (p. 5).

A methodologically pertinent answer to Maher's question was suggested in recent studies by Miller and Riechert (1994). Miller and Riechert studied thematic emphasis of pesticides coverage in four magazines. Methodologically, the study employed a unique application of Concept Mapping, a multidimensional scaling system developed by Miller (1995a, 1995b) and described in Andsager and Miller (1994), Chew and Miller (1993), Chew and Kim (1993), and Chew, Mehta, and Oldfather (1993 and 1994).

The identification of prominent themes is a useful technique in framing studies. Hendrickson (1994) uses *news frame* interchangeably with *theme,* and Entman (1993) suggests frames are manifest in *thematic clusters.* Gamson emphasizes themes in his studies. Priest (1995a) refers to "thematic emphasis of coverage" as "a media framing effect." She argues (1995b, personal communication) that frames may involve more than themes—such as story structure, sources, etc. These examples illustrate the variation with which the term *framing* has been used—to imply a single theme, to incorporate co-occurring themes, and to include themes and more.

The notion of *frame* to indicate the theme or themes in text, particularly as crafted by different sources, appears to be a useful (though not exclusive) conception for the term. This study applies the middle-range conceptual scope of framing—framing as representing more than a single theme but not so much as story structure. Thus, in this study sets of key terms that occur together frequently in text will be specified to indicate key themes, and prominent themes that occur relatively exclusively and together in communication from one source or another will be compared as alternative issue frames by the different sources. In this conceptualization frames in text may (and usually will) include more than one theme, and themes in text will be manifest in frequently-occurring key terms. The usefulness of this conceptualization in conducting frame analysis will be demonstrated.

Miller and Riechert (1994) used Concept Mapping to identify the major themes in articles mentioning pesticides in four publications including one general magazine *(Time)* and three specialized magazines *(Audubon, Nutrition Today,* and *Successful Farming)*. The researchers identified 11 major themes in the pesticides articles, including general, environment, product safety, farming, farm policy, crop residue, food risk, nutrition policy, diet, human health, and birds.

In the study Miller and Riechert (1994) identify significant differences in relative prominence of these major themes among the magazines. The relative prominence was measured by frequency of occurrence of key theme terms in analysis of variance and post hoc tests. The study illustrates the potential usefulness of the Concept Mapping procedures to investigate themes and frames in different

publications or by different sources.

The Concept Mapping procedures (which will be described in more detail in a later section) are based on term frequency and co-occurrence. The procedures calculate the cosine coefficient for a document-by-term matrix to construct a term-by-term cosine coefficient matrix from which the largest eigenvectors for each term are extracted. These eigenvector values are used to sort the terms into co-occurring clusters in multidimensional scaling and hierarchical cluster analysis using the agglomerative algorithm and the cosine method. Miller and Riechert (1994) note:

> The ease and convenience of the computer-based concept mapping procedure to identify and locate themes cannot be overemphasized. Using traditional content analysis methods of reading and coding articles for common and distinct themes is not only time consuming but also subject to errors of individual judgment. The VBPro content analysis and concept mapping programs place in the hands of the communication scientist a whole new set of analysis tools. (p. 16)

Andsager and Miller (1994) used similar computerized content-analysis procedures to investigate 12 years of news coverage of RU-486, the French abortion pill. They identified three main frames in this controversial ongoing issue—product information, the abortion debate, and health and social issues. They also conducted time-sequence analysis to show that news coverage on the topic was sporadic and event-driven.

Methodologically, the Concept Mapping procedures offer important improvements over traditional approaches to identifying and comparing themes in text. With Concept Mapping, (1) the themes are specified by the text itself, thereby avoiding the potential problems of measurement validity and coder reliability; and (2)

methods of measuring and comparing relative emphases in text are precise. The Frame Mapping application of the Concept Mapping procedures, which will be elaborated throughout this dissertation, appear to provide a welcome answer to the call by Tankard, Maher, Gamson, and others for a more precise (and thus, more effective) method of conducting frame analysis.

The relevance of frame analysis has been noted by several authors. Tankard et al. (1991) for instance, note that framing is emerging as an "important concept in news studies" (p. 12). Similarly, Beniger and others suggest framing is central in "the new process paradigm" involving "cognitive processing, media framing, and active audience engagement in mass communication" (Beniger, 1987, p. S57; Beniger & Jones, 1990, pp. 157-158).

News Media Content and Agenda Building

The previous section discussed some of the many facets of framing. The following section will address the broad topic of news media content and agenda building, focusing particularly on the interconnections of framing, news media content, and media sociology or agenda building, and some of the potential implications to policy agenda building. From the convergent implications of framing and news media content are proposed the research questions addressed in this study, which will be presented at the end of this section.

The following discussion on news media content and agenda building will focus on four areas: (1) research domain, (2) related terminology, (3) theory-related

formulation, and (4) methodological issues.

The relevance of studying *news media content* is noted by numerous researchers in communication and related fields. Gamson, it is recalled, specifically notes the need for systematically relation of frame sponsorship by image managers "to outcomes measured through an analysis of media content" (1989, pp. 160-161).

Shoemaker and Reese (1991) argue for the investigation of news media content *"as a dependent variable"* (p. 8). Noting the preponderant occupation in most mass media research studies with "the process through which the audience receives mass media content or with the effects of content on people and society" (p. 2), they raise as equally important the understanding of the influences that shape content: "Instead of taking media content as a given, we ask: *what factors inside and outside media organizations affect media content?"* (p. 1).

Domain of News Media Content Studies

Shoemaker and Reese (1991) call for the development of a theory of media content, contributing to this effort by reviewing and comparing related communication studies.

They describe 12 domains of mass communication research, some of which are relatively neglected. They divide these types of research into studies involving media content, studies not addressing content, and potential research directions that could integrate media content and media effects studies. They suggest that current research areas that involve media content include *media sociology* (how media content

is shaped), *marketing media content* (primarily a marketing domain), *direct effects of content* (such as agenda-setting studies), *direct effects of media content with influences on content as contingent conditions,* and *effects of content with audience use intervening* (such as cultivation analysis). Research areas that "do not incorporate an important theoretical or empirical role for mass media content," Shoemaker and Reese suggest (1991, p. 210), include the *active audience* (such as uses and gratifications and diffusion of innovations studies), *direct effects of media use* (such as studies on effects of media reliance on political knowledge and attitudes), and *direct effects of media use with audience characteristics as contingent characteristics* (media effects studies that control for audience demographics, for example). Research directions that could integrate media content and media effects studies, they suggest, include *marketing media content with media characteristics as contingent conditions, effects of content with audience use intervening and media characteristics as contingent conditions, effects of media use and media content with media and audience characteristics as contingent conditions,* and *direct and inferred effects of content with influences on content and audience characteristics as contingent conditions.*

According to Shoemaker and Reese (1991) the focus of media sociology studies is "how mass media content is shaped by characteristics of the media, media workers, and the environment in which the media exist" (pp. 208-209). These influences include those from outside media organizations—some of which will be investigated in this study—as well as influences from individual media workers, from media routines, from media organizations, and from ideology. Studies related to these

influences on media content are reviewed by Shoemaker and Reese (1991) in *Mediating the Message: Theories of Influences on Mass Media Content.*

In a hierarchical model that represents various influences in concentric circles, Shoemaker and Reese (1991) locate the influences on media content from outside of media organizations in the *extramedia level,* occurring beyond the *organizational level* but encompassed within the *ideological level.* Extramedia level influences on media content include "the *sources of the information* that becomes media content, such as special interest groups, public relations campaigns, and even the news organizations themselves; *revenue sources,* such as advertisers and audiences; *other social institutions,* such as business and government; the *economic environment;* and *technology"* (p. 147).

People available to journalists as news sources include official sources such as government officials, representatives of special interest groups, and other spokespersons. Journalists may interview these spokespersons or news sources as experts, as witnesses to an event, or as involved parties in events and issues that are being covered. The "journalism tenet" of objectivity is responsible for such powerful source influence, "because it requires a journalist to attribute information to a legitimated source . . . " (Berkowitz, 1992/1994, p. 81).

As noted by Hough (1988), most news articles are second hand in that they are based on facts told to the reporter but not witnessed by him or her. (And sometimes the news articles are even third hand, reporting information told to the reporter by sources who got the information from witnesses or participants.)

The presentation of information obtained by reporters from others is emphasized in journalism teaching and practice. According to Hough (1988):

> The use of exact words spoken by people appearing in news stories is known as *direct quotation,* and the words the speaker used are called *direct quotes* or merely *quotes*. Direct quotation is a useful device, one that breathes life into a story because it *enables the participant in an event to speak directly* [italics added] to the newspaper reader rather than indirectly, through an intermediary—the reporter and writer. (p. 111)

In addition to direct quotations, *indirect quotations* are used in news articles. "Indirect quotation, which is not enclosed in quotation marks, is a slightly edited or altered version of what the speaker said," according to Hough (1988, p. 113). The source of an indirect quotation is identified, but an indirect quotation tells what a speaker said without using exactly the same words (generally, to summarize in fewer words).

For example, an indirectly quoted or paraphrased version of the historic Gettysburg Address might be something like this:

> President Lincoln suggested that national leaders had sought liberty and personal freedom for more than 80 years.

Indirect quotations are helpful in summarizing information to present it more concisely, though they usually—as in this example—lack the brilliance of the original statements.

On the other hand, direct quotes are useful in bringing the reader "into direct contact with the action" and adding "authenticity and color to a news story." Hough (1988) advises journalists, *"Paraphrase the ordinary, the routine, but not the special"* [italics added] (p. 115).

Attribution in a news article is the identification of the source of the information, whether the information is included in a direct or indirect quotation (Hough, 1988). News articles identify the source or sources of information. Like science, news reporting is expected to seek objectivity—the editorializing or opinion of the journalist is considered inappropriate in newspaper articles that are not identified clearly as editorials. The journalist's opinion, in other words, is not considered a news value. *News values,* rather, include qualities such as *"timeliness, proximity, prominence, consequence, rarity,* and *human interest"* (Hough, 1988, p. 3), as well as impact, conflict, "the bizarre or unusual," and currency—events related to issues of current interest (Stovall, 1990, p. 85).

The influence of persons who are interviewed and quoted in news articles (whether quoted directly or indirectly) on the scope and nature of news media content is potentially powerful because information in a news article must be attributed to its source. Here the convergence of the consequences of framing and news media content becomes apparent.

To recall Sartre and Natanson's example of the Romans and the Cathagenians, quite distinct interpretations to *what is it that's going on here* might be offered by spokespersons from either city. For instance had Marcus Porcius Cato, a leader in ancient Rome, been interviewed centuries ago by a journalist, he might have repeated the statement he included in each of his speeches to the senate—*"Delenda est Carthago"* (Carthage must be destroyed) (Bartlett, 1980, p. 95). On the other hand, a Carthage citizen interviewed as a news source might have described "valiant defense

against brutal attacks," as each news source addressed the aspects of the event or issue most salient to him or her.

As Shoemaker and Reese (1991) note, "Sources have a tremendous effect on mass media content, because journalists can't include in their news reports what they don't know" (p. 150).

Similarly, Berkowitz (1992/1994) observes, "Put most simply, news sources exert a stronger influence over the news agenda than do journalists" (p. 81).

The journalist-source relationship has been described variously as a dance (Gamson, 1985) and a tug-of-war (Linsky, 1986). Journalists need sources because they must provide attribution to information in a news article. Sources, on the other hand, need journalists in order to have their message given voice in the news media. Such is an *interest group,* which is "composed of individuals who want to communicate their stance on one or more issues to the public" (Shoemaker & Reese, 1991, p. 157).

Of particular interest in this study is the relationship of media content to *divergent stakeholders* as *news sources* in news articles. The question of where frames in the news media come from is of particular interest. Entman discussed the influence of *frame agencies,* and Gamson emphasized the need for investigation of *image managers* and *frame sponsors* in relation to news media content, while also noting the inadequate rigor of current methodologies to study these phenomena.

Related Terminology

Studies of journalists, news sources, and media content apply a challenging array of terminology, which will be reviewed here to clarify the constructs of particular focus in this study.

Berkowitz (1992/1994) provides one of the most helpful discussions on this topic, describing the research areas referred to as *agenda setting, agenda building,* and *information subsidy*. "Who sets the media agenda? Nobody, really," (Berkowitz, 1992/1994, p. 81). The news agenda is more the result of a *process* than the setting or transfer of priorities from some directing force or forces, Berkowitz suggests. And, while a common language "does not exist for discussing key concepts related to news agendas, . . . such a language is crucial to shared understanding" (p. 83). Table 3 summarizes the explication of this terminology offered by Berkowitz.

Rogers and Dearing (1988, cited in Berkowitz, 1992/1994) distinguish between the foci of studies related to *agenda setting* and *agenda building*. While *setting* is concerned with studying some effect of the media agenda on society, *building* "in contrast, is concerned with a broader picture, where media and public agendas influence public policy" (Berkowitz, 1992/1994, p. 83).

The concept usually referred to as *agenda setting* considers "the effect of mass media content on the *public's* perception of a news agenda," according to Berkowitz (1992/1994, pp. 83-84). Focus on *policymaker's* perceptions, shaped by the media agenda and other forces such as opinion polls, also is referred to as *agenda setting,* as well as *agenda building* and *policy agenda building*.

Table 3. Terminology for Concepts Commonly Used in the Study of Agendas

Concept	Terms in Use	Recommended Term
A. Effect of mass media content on the *public's* perception of news agenda.	Agenda-setting Public agenda	Agenda-setting
B_1. Media-policymaker linkage, focusing on *policymakers'* perceptions	Agenda-setting Policy agenda-setting Agenda-building	Policy agenda-setting
B_2. Societal context where public issues surface and gain salience	Agenda-building	Policy agenda-building
C. *Media content* and how the media agenda is formed	Agenda-setting Media agenda-setting Agenda-building	Agenda-building or Media agenda-building[a]
D. Information as economic commodity bartered between journalists and sources	Information subsidy	Information subsidy

Source. Adapted from, and based on, Berkowitz, D. (1992/1994). "Who Sets the Media Agenda? The Ability of Policymakers to Determine News Decisions," in J. D. Kennamer (Ed.), *Public Opinion, The Press, and Public Policy,* (pp. 81-102). Westport, Conn.: Praeger.

[a]"In discussions of the evolution of both the media and policy agenda, the label *media agenda-building* can add clarity" (Berkowitz, 1992/1994, p. 87).

The influence of various sources **on** the media has been referred to variously as *agenda setting, media agenda setting,* and *agenda building.* (However, as he argues, "the media agenda is not simply set, but instead evolves from the interaction of people and organizations in society" [Berkowitz, 1992/1994, p. 84]).

Another narrower and less confused conceptualization of information is as a economic commodity (such as news releases provided to news media), which generally is referred to as *information subsidy.* This area is discussed, for example, by Cutlip (1988).

The solution to this semantic schizophrenia involves development of general consensus for use of this terminology, Berkowitz (1992/1994) suggests. He argues that the term *agenda setting* is most representative of the notion of transfer of the media agenda to the public agenda. Further, he recommends the use of the term *policy agenda setting* when the focus is limited to the media-policymaker interaction, while "when the focus is not on policymakers' personal agendas, but instead on the broader societal context where public issues surface and gain salience, the mass media become only one indicator of public sentiment, and the term *policy agenda building* is more accurate" (p. 87).

Discussion on how the media agenda is formed, Berkowitz (1992/1994) argues, is best reflected in the term *agenda building,* and "in discussions of the evolution of both the media and policy agenda, the label *media agenda building* can add clarity" (p. 87).

The initiative for research on the media agenda is echoed specifically by Reese (1991) and supported by Becker (1991), though Becker objects to the potentially misleading term *media agenda setting,* favoring the term *media content:*

> The term *agenda-setting* carries with it a notion of media power. Historically, as Rogers and Dearing note, it is rooted in the period of a reexamination of media effects. To carry the term over to the literature of news creation suggests a power that at present cannot be documented. In fact, it seems unlikely to be justified. (p. 346)

Reese (1991, p. 335), in fact, acknowledges the lack of an acceptable single descriptive term for this area of research: "Closest, perhaps, is *media sociology,* which Davison, Boylan, and Yu (1982) note 'seeks to explain why the content of mass communication is as it is' (p. 77)."

Theory-Related Formulation

As developed in an earlier discussion, framing involves selection and salience (Entman, 1993) in issue definition. The notions of framing imply that complex issues can be defined in many ways, and in fact *may be expected to be defined in different ways* by distinct stakeholders in a particular issue (such as the Romans and the Carthagenians discussing alternatively the "conquering" or "enslavement" of the ancient city and state in the bitter Punic Wars of long ago). Some aspects of the framing phenomena of selective definition and representation will be examined in detail in this study.

The differential framing of a complex issue *by diverse stakeholders who are quoted by journalists as news sources* holds enormous theory-related implications

relating to news content and media agenda building. This phenomenon will be examined in some detail in this study. It also can be argued that the phenomena of framing and media content hold critical implications for policy agenda building—the development of policy issues on the public agenda—although examination of these relationships is beyond the scope of this study.

From the current state of understanding of framing and media sociology or agenda building come the research questions that will guide this study. These will relate to stakeholder framing, news media framing, and frame changes over time.

Methodological Issues

In addressing the research questions posed in this study, new methods will be applied. Tankard, Maher, and other researchers have noted the need for more precise analytic methods for studying frames and content in news. By identifying, comparing, and measuring frames in communications by different stakeholders and in news coverage, this dissertation seeks to introduce and promote the use of more rigorous and precise measurement and study of framing and news media content. Positive evidence for the research questions investigated herein may be interpreted to contribute to knowledge related to communicator and text framing, as well as news media content. More importantly, it will demonstrate the effectiveness of the methods explicated here, which can be used by researchers to refine theories and contribute to the state of knowledge.

Research Questions

Research Question 1: ***Stakeholder Framing***

Will diverse stakeholders involved in policy debates tend to frame or define a policy issue differentially, emphasizing different aspects or concerns related to the overall issue?

Research Question 2: ***News Media Framing***

In news media coverage of complex policy issues involving different stakeholders, will news articles emphasize different themes or frames, depending on the stakeholder(s) quoted as sources within a particular article?

Research Question 3: ***Frame Changes Over Time***

Do frames in news coverage change systematically across time?

CHAPTER III.

METHODS

In addressing these questions, this study will employ a variety of analytic techniques, which will be reviewed generally in this section and elaborated more specifically in Chapter IV. The techniques include computer-assisted content analysis, cluster analysis (specifically, agglomerative hierarchical cluster analysis), and multidimensional scaling. The multidimensional scaling techniques used are Concept Mapping and the Frame Mapping Method, a unique application of Concept Mapping. The type of Concept Mapping used in this study is based on the frequency of key terms and their co-occurrence in text. The procedures use the innovative computer programs VBPro and VBMap, developed specifically for analysis of verbatim text in natural language and for multidimensional scaling of concepts.

Computer-Assisted Content Analysis

Content analysis is described by Singletary (1994) as a "research technique for the systematic analysis of text" (p. 454) and by Stempel (1981) as "a formal system for doing something we do informally rather frequently, drawing conclusions from observations of content" (p. 119).

Kerlinger (1986) defines content analysis as "a method of studying and analyzing communications in a systematic, objective, and quantitative manner to measure variables" (p. 477).

Berelson's oft-quoted classic definition of content analysis (1952a/1971) remains pertinent to contemporary studies: "*Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication*" (p. 18). This succinct comment describes important aspects of content analysis. Focusing on the visible and apparent content, "Content analysis assumes that the study of the manifest content is meaningful. . . . that the manifest content can be taken as a valid unit of study. . . . [and] that the quantitative description of communication content is meaningful" (Berelson, 1952a/1971, pp. 19-20).

Objectivity, is "an essential requirement of science," and being systematic is "a logical extension of objectivity" (Singletary, 1994, p. 281). These are important quality control factors in research and are necessary "to give truth the opportunity to emerge" (p. 282).

Basic methods of content analysis have been used by scholars for decades. According to Berelson (1952a/1971), basic content analysis methods were used as early as the 1890s to study stylistic features in literature. Content analysis methods were employed in the 1920s by students in journalism to investigate the content of American newspapers, and the methods received wide attention in the research of Harold Laswell, Paul Lazarsfeld, and Irving Janis in the late 1930s and 1940s. Albig commented on the usefulness of content analysis in "noting trends and changes in content" in 1938 (cited in Berelson, 1952a/1971, p. 29). More powerful applications of the approach are becoming possible with new computer capabilities, availability of

online subscription services, and the development of computer-assisted content analysis systems.

Content analysis is "not a problem area or a field or a subject matter for investigation but rather a method for studying problems and fields and subjects. . . . The method has produced a number of useful studies which combine original ideas with sound, careful documentation. This is, of course, the heart of the matter" (Berelson, 1952a/1971, pp. 196-198). Content analysis can used for several purposes in research, according to Wimmer and Dominick (1991). These include describing communication content, testing hypotheses about message characteristics, and comparing media content to the real world.

Stempel (1981) describes the four methodological challenges of content analysis as relating to the unit of analysis, category construction, sampling of content, and reliability of coding. The uses of online subscription services now available and new computer programs designed for analyzing verbatim text offer attractive solutions to the sampling and coding reliability problems. "Under optimal conditions, such procedures can save time and provide highly reliable coding," notes Stempel (1981, p. 129).

Tankard, Hendrickson, and Lee (1994) discuss the potential benefits and possible pitfalls of using available computer information sources such as Lexis/Nexis in content analysis research. Content analysis using computerized databases has at least three advantages—it makes feasible the obtaining of large (therefore representative) samples of mass media content; it processes large amounts of data

quickly; and it can allow for searching for rare kinds of media content.

The use of these large text samples obtained through key word searches also holds some potential problems, of course. Such online searches can be expensive. In addition, key word searches can yield articles that are not on the topic of the study due to the fact that words can have more than one meaning. For example, Tankard, Hendrickson, and Lee (1994) note that a researcher downloading articles about "spin control" may get some articles about airplane propellers.

Similarly, a study by this author (Riechert, 1995) involved computer-assisted content analysis of 1984-94 Associated Press articles on the Human Genome Project. The sample was obtained through several online key word searches including use of the word "gene" with the word "identified." Though most of the articles obtained in this manner were, in fact, on the topic of new genes being identified by scientists, the search also yielded a handful of crime articles in which a suspect was arrested and "identified as Gene . . . " Of course, such inappropriate articles must be discarded through careful inspection of the data sample before meaningful analysis can proceed. With thoughtful planning of key word searches and rigorous research design, the computer-assisted content analyses offer exciting new opportunities in media research.

Other recent studies involving content analysis of news articles and other text obtained from online information services include Andsager and Miller (1994), Miller (1994), Miller and Riechert (1994), Riechert and Miller (1994), Tankard and Sumpter (1994), Boone (1993), Miller, Boone, and Fowler (1992), Swisher and Reese (1992), Dyer, Miller, and Boone (1991), and Dyer (1991).

Kerlinger (1986) observes that the use of computers and computer programs in content analysis has made this "one field that is rapidly evolving and changing; it certainly has not reached the sort of stability necessary for routine inspection" (p. 482).

While content analysis has been used for decades to "make valid inferences from text" (Weber, 1990, p. 89), recent developments of computer programs such as VBPro for use in computer-assisted content analysis, together with the increasing availability of online subscription services and optical scanning technology, create exciting new frontiers for exploration by communication researchers.

Singletary (1994) describes these expanding methodological possibilities and research opportunities:

> The potential for computer analysis of text is tremendous. What makes it the more remarkable that in this computer age how little use of the computer has been made in content analysis. . . . The great potential of computer analysis is in its ability to process huge chunks of text at electric speed. . . . In some cases, as with news wire services, copy can be captured directly on disk. This enables the analyst to study many thousands of words of newspaper copy daily for broad patterns in the news. (p. 298)

The current expansion of computer-assisted content analyses is noted by Weber (1990), who suggests the methods will be applied to a wide range of social science questions. As he observes, computer assisted content analysis offers the remarkable advantage of perfect coder reliability, which "then frees the investigator to concentrate on other aspects of inquiry such as validity, interpretation, and explanation" (p. 41).

Cluster Analysis

The classification of objects "according to perceived similarities is the basis of much science" and the organization of data "into sensible groupings is one of the most fundamental modes of understanding and learning," according to Jain and Dubes (1988, p. 1).

Classification in Research

For example, Romesburg (1984) proposes six uses of classifications in research: (1) to aid in memory and thinking, (2) to organize and retrieve objects, (3) as building blocks in scientific theories, (4) to predict the values of specific variables, (5) to discover varied inductive generalizations, and (6) to improve planning. Classifications, he suggests "are like the pilings a pier sits on. And scientific theories are like a pier that spans the pilings. From this it follows that when a theory is experimentally tested and confirmed, this process determines the validity of the classifications, as well as their theoretic interrelationships" (p. 226).

Romesburg (1984) describes cluster analysis as "a generic name for a variety of mathematical methods, numbering in the hundreds, that can be used to find out which objects in a set are similar" (p. 2). As an example, he explains that a person might gather stones from a stream and sort them by size or color—thereby accomplishing a manual or physical cluster analysis process that would separate them into groups sharing a similarity. With mathematical clustering, he notes, "Objects with similar descriptions are mathematically gathered into the same cluster." Through

cluster analysis the researcher determines which objects are similar, and also which ones are dissimilar.

In contrast to manual grouping processes, clustering techniques offer several advantages to the researchers. They are reliable, they are time-efficient, and they can detect similarities that otherwise would be overlooked. As noted by Jain and Dubes (1988), "The speed, reliability, and consistency of a clustering algorithm in organizing data together constitute an overwhelming reason to use it" (p. 3). The clustering algorithm frees the researcher from the time-consuming and unappealing task of analyzing a similarity matrix so that instead he or she may devote attention to interpreting the groupings found in the data.

"The basic notion of clustering is intuitively sensible," according to Kruskal (1977). "A human being growing up under primitive conditions, but with a reasonable set of life experiences, would doubtless form many clusters spontaneously: the cluster of people, the cluster of birds, the cluster of trees, and so forth. He or she would no doubt perceive a cat as more similar to a squirrel than a cat to an ant. What distinguishes clustering [analysis] . . . from the spontaneous human activity I've just described is that we derive the clustering systematically from the data" (pp. 17-18).

Definitions of Cluster Analysis

Jains and Dubes (1988) define cluster analysis as "the formal study of algorithms and methods for grouping, or classifying, objects" (p. 1). This approach to scientific investigation, therefore, focuses on similarity relationships between objects

of interest.

Foster (1992, referencing Lorr) suggests cluster analysis "is actually a set of statistical techniques for finding equivalence classes, or clusters, among the input data" (p. 169).

Similarly, Press (1972) describes clustering as "a collection of techniques that are used to group multidimensional entities according to criteria of their degrees of homogeneity and heterogeneity" (p. 408).

In his classic book, *Cluster Analysis for Applications,* Anderberg (1973) describes cluster analysis as "an umbrella term for a loose collection of heuristic procedures and diverse elements of applied statistics" (p. 10). The objective in cluster analysis, he suggests, is to group the objects of interest into clusters "such that the elements within a cluster have a high degree of 'natural association' among themselves while the clusters are 'relatively distinct' from one another" (p. xi).

Similarly, Jaines and Dubes (1988) describe the objective of cluster analysis as finding "a convenient and valid organization of the data . . . Clustering algorithms are geared toward finding structure in the data" (p. 1).

As Anderberg observes (1973), clustering methods rearrange facts "so as to sharpen the effect of the analysts's faculties for pattern recognition and discovery" (p. 213). Cluster analysis methods "involve a mixture of imposing structure on the data and revealing that structure which actually exists in the data" (p. 23).

Researchers would be remiss in expecting the results of cluster analysis to speak for themselves; however, they may find in its techniques a number of useful

exploratory tools. Anderberg emphasizes this point, arguing that the most useful results of submitting data to a cluster analysis algorithm is "increased understanding and improved organization of known facts permitting a more parsimonious description of the topic under study" (p. 176).

Cluster analysis is an important technique in exploratory data analysis and offers a variety of applications in numerous scientific fields, according to Jain and Dubes (1988). Cluster analysis "organizes data by abstracting underlying structure either as a grouping of individuals or as a hierarchy of groups. The representation can then be investigated to see if the data group according to preconceived ideas or to suggest new experiments" (Jain and Dubes, 1988, p. xiii).

Cluster analysis is contrasted with factor analysis by Blashfield and Aldenderfer (1978) and Young (1987).

Hierarchical Cluster Analysis

Among the various clustering analysis procedures available to researchers, hierarchical clustering is a popular approach, according to Bernstein (1988): "Hierarchical clustering takes an initial grouping . . . and unites the two most similar groups into one subject to the constraint that an observation can belong to one and only one group (cluster). The process is repeated until eventually all observations belong to one large cluster" (pp. 345-346).

Hierarchical agglomerative methods "start the clustering process by forming a matrix which represents the pairwise similarities of all entities being clustered. These

methods then proceed to build clusters gradually *(i.e.* to agglomerate) by putting the most similar entities together" (Blashfield & Aldenderfer, 1978, p. 271).

The procedures of hierarchical cluster analysis are revealed by their name to be concerned with clustering arrangement in rank order of similarity or dissimilarity. Hierarchical techniques are useful in constructing taxonomies and therefore are popular in a variety of sciences. Press (1972) credits Ward (1963) with outlining hierarchical clustering techniques in general form.

According to Romesburg (1984) methods of hierarchical cluster analysis follow a series of prescribed steps. First, a data matrix is collected in which the columns represent the cases to be investigated and the rows represent the attribute of interest. Second, the data matrix may be standardized. Third, the data matrix or standardized data matrix is used to compute the values of a similarity or resemblance coefficient based on similarities of all pairs of data. Fourth, a cluster method is used to process the values of the similarity or resemblance coefficient. This results in a visual "map of sorts, called a tree, that shows at a glance the degree of similarity between all pairs of objects" (Romesburg, 1984, p. 14). The tree or *dendogram* "shows the hierarchy of similarities among all pairs of objects. From the tree the clusters can be read off" (p. 3).

In the nested or hierarchical classification, larger clusters are obtained through sequential merger of smaller clusters (Anderberg, 1973).

Hierarchical clustering techniques, according to Jain and Dubes (1988) "organize the data into a nested sequence of groups. An important characteristic of

hierarchical clustering methods is the visual impact of the dendogram, which enables the data analyst to see how objects are being merged into clusters or split into successive levels of proximity" (p. 89).

As noted by Anderberg (1973), "moving down the tree from the branches toward the root depicts increasing aggregation of the entities into clusters. Hierarchical clustering methods which build a tree from branches to root often are called *agglomerative* [italics added] methods" (p. 131). Divisive hierarchical methods—those moving from root to branches or larger clusters to smaller ones—are less common.

Norušis (1990) discusses the popular techniques of hierarchical clustering analysis, which includes both the agglomeration or divisive methods. "In agglomerative hierarchical clustering, clusters are formed by grouping cases into bigger and bigger clusters until all cases are members of a single cluster" (p. B-157). This process begins by considering all cases as separate clusters, then two or more of the cases are combined into a single, larger cluster, and so on.

The results of the cluster analysis are presented in an *agglomeration schedule* and a dendogram. The agglomerative schedule lists the number of clusters combined at each stage. The distance between the clusters is indicated in the column labeled *coefficient*. This value can be useful to the researcher in determining how many clusters most appropriately represent or organize the data (Norušis, 1990).

As Norušis (1990) observes, the dendogram is a useful way of visualizing the nested cluster results. The dendogram plotted by the SPSS/PC procedure rescales

actual distances to numbers between 0 and 25, thereby preserving the ratio of the distances between the steps.

Dendograms

The dendogram consists of a tree-type plot in which objects are indicated as clustering in similarity at various levels—in somewhat the same way that a family tree would show brothers and sisters are more closely related to another than to their cousins, and so forth. Dendograms generated through cluster analysis provide the researcher with dramatic and interpretable visualization of whether, and the degree to which, objects of interest relate in similarity and dissimilarity to one another.

Bernstein (1988) discusses the dendograms produced in hierarchical cluster analysis:

> The results of hierarchical clustering possess a "tree" structure, a terminology rather similar to that used in botany. Individual observations may be thought of as "leaves," which join to form small "branches": small branches join to form larger "branches," until the "root" is reached. (p. 359)

Interpretation of the dendogram generally proceeds from the clusters representing the closest similarity outward (which would correspond to groups of siblings on a family tree). According to Jain and Dubes (1988), a "good cluster" is "both compact and isolated, which means that it forms early in the dendogram and is not absorbed into another cluster until late in the dendogram" (p. 196). Clusters that are not absorbed together until the final cluster(s) are detected as the most diverse from one another.

The researcher may use the dendogram to confirm or disconfirm hypothesized structure. In cluster validity a null hypothesis is a statement of "no structure" (Jains and Dubes, 1988, p. 144). The plot also may suggest relationships that were unanticipated. The usefulness of the dendogram is in its interpretation by the researcher.

Relationships in the data "as shown by a dendritic hierarchy are basically one-dimensional and unable to express the often quite divergent similarities between individual members of different clusters," according to Sokal (1977, pp. 7-8).

As a tool for exploring data, cluster analysis is supplemented by various techniques for illustrating the findings visually. Often two-dimensional plots, which indicate the objects of analysis as points, are employed, though some multivariate data cannot be adequately visualized in two dimensions. Multidimensional scaling also is used to supplement cluster analysis (Jain & Dubes, 1988).

Clusters have been described (Everitt, 1974, cited in Jain and Dubes, 1988) variously as "a set of entities which are *alike,* and entities from different clusters are not alike" and as "connected regions of a multi-dimensional space containing a relatively *high density* of points, separated from other such regions by a region containing a relatively low density of points" (p. 1).

Clustering Algorithms

The "speed, reliability, and consistency" (Jain and Dubes, 1988, p. 3) of a *clustering algorithm* was referenced in the preceding discussion on *Classification in*

Research. Statistical and mathematical cluster analysis is accomplished through the use of appropriate algorithms, such as the agglomerative algorithm used in agglomerative hierarchical cluster analysis.

An *algorithm* is defined generally as a "finite sequence of instructions that when followed will terminate after a finite number of steps" (Foster, 1992, p. 50). It also is described "as a recipe, or a finite set of instructions (sometimes constrained to halt after a finite number of steps) written in a formal language such as LISP or FORTRAN" (Foster, 1992, p. 1).

Similarly, Brookshear (1991) describes *algorithm* as "a finite sequence of unambiguous, executable steps that will ultimately terminate if followed" (p. 121).

Kronsjö (1987) defines *algorithm* as "a procedure consisting of a finite set of unambiguous rules which specify a finite sequence of operations that provides the solution to a problem, or to a specific class of problems" (p. 1).

Wetzel and Bulgren (1985) note the distinction between an algorithm and a *program:* "A program is the statement of an algorithm in a computer programming language (C, PASCAL, FORTRAN, etc.)" (p. 7). Algorithms require "explicitly stated criteria; no 'maybe's' are allowed" (p. 7). Furthermore, they are evaluated on the basis of their efficiency and generation of the desired solutions or outputs.

Multidimensional Scaling

Spatial representation of the structure of data is possible with a set of analytic procedures known as multidimensional scaling. The value of visual representation is

almost intuitive, and captured succinctly in the Chinese proverb about the worth of one picture. Similarly, Turgenev is credited with the statement, "A picture shows me at a glance what it takes dozens of pages of a book to expound" (cited in Bartlett, 1980, p. 564).

Multidimensional scaling or MDS "rests on the premise that a picture is worth a thousand numbers," according to Young (1987, p. 3).

Or, as Coxon (1982) phrases it, "A picture *of data* [italics added] is worth a thousand words . . . " (p. vii).

The usefulness of visual diagrams was noted by Fisher (1936) long before multidimensional scaling techniques were developed and used in research:

> The preliminary examination of most data is facilitated by the use of diagrams. Diagrams prove nothing, but bring outstanding features readily to the eye; they are therefore no substitute for such critical tests as may be applied to the data, but are valuable in suggesting such tests, and in explaining conclusions founded upon them. (p. 26)

The term *multidimensional scaling,* according to Young (1987) refers to a family of data analysis methods, all of which portray the data's structure in a spatial fashion . . ." (p. 3).

Parsimonious description is among the virtues of multidimensional scaling, a point which will be emphasized in this discussion. As noted by Young (1987), multidimensional scaling " . . . is a method for analyzing data that takes an *essentially incomprehensible matrix* of data and represents it in a spatial fashion that is *easily interpreted* . . . " [italics added] (p. 13).

Representing Data Structure Spatially

Coxon (1982) emphasizes three points related to MDS analysis. First, multidimensional scaling *is concerned with representation*—that is, representation of data structure spatially. Secondly, models in multidimensional scaling *may be used with data of varying quantitative properties* (that is, data may be non-metric or metric depending on whether they are ordinal, interval, etc.). Thirdly, multidimensional models *may be applied to a wide range of data and measures.* "Any data which can be interpreted as a similarity or a dissimilarity measure are appropriate for scaling analysis" (p. 3).

Early contributors to multidimensional scaling methods, according to Young (1987), include Torgerson (1952), Shepard (1962), Kruskal (1964), and Guttman (1968). The most common early applications of multidimensional scaling were in psychology or marketing; researchers found MDS techniques helpful, for example, in representing similarity among subjects of perceptions or preferences for various products among subjects. The use of multidimensional scaling applications has expanded in the social sciences.

Shepard (1980), a researcher in psychology, credits Torgerson with development of "the first fully workable method of metric multidimensional scaling." According to Shepard, the basic idea of *modeling data as points in space*—to that spatial proximity represents similarity—can be traced back to Isaac Newton's suggestion in 1704 "that spectral hues be represented on a circle" (p. 390). Early progress and applications of multidimensional scaling are described by Carroll and

Arabie (1980).

Kruskal and Wish (1978) describe multidimensional scaling as a "class of techniques" that use proximities as input:

> A proximity is a number which indicates how similar or how different two objects are, or are perceived to be, or any measure of this kind. The chief output is a spatial representation, consisting of a geometric *configuration of points,* as on a map. . . . This configuration reflects the "hidden structure" in the data, and often makes the data easier to comprehend. (p. 7)

The authors compare the usefulness of multidimensional scaling to the idea of constructing from a table of distances between a group of cities a map showing their relative location.

Reflecting on the historical and expanding contributions of multidimensional scaling, Coxon (1982) observes:

> [MDS is] . . . a family of models for the description and representation of data and the processes generating them. It should now be clear that the family is complex and growing. What began as an interesting but highly restricted attempt to reduce the dimensionality for reproducing the adjudged psychological similarities has become as extensive as the general linear model—and, indeed, has merged with it at certain points. (p. 253)

Extracting the Principal Components

In MDS methods data points or objects "are projected in the attribute space and taxonomic structure is determined from the constellation of points in that space," according to Sokal (1977). "Since this space is hyperdimensional, one frequently employs methods for reducing its dimensionality" (p. 8). An effective approach is principal components analysis.

The method of *principal components* or *principal axes* is described by Coxon

(1982). Data structure can be represented as a set of points in a multidimensional space or configuration. A line can be identified on the configuration from the points that are at maximum distance from one another; along this line or axis dimension is maximum variation. Identified by the method of principal components, the line is thus extracted as the first principal component or principal axis of the space.

Then a second line or axis can be identified or extracted—such that the line maximally *explains the remaining variation* among the points and is *orthogonal,* or at right angles, to the first axis of the space. The second axis or component is statistically unrelated to the first, in that correlation is zero for the coordinates of points along the two axes. Additional coordinates may be selected in the same manner; axes would be identified that explain the maximum remaining variation and that are orthogonal to the axes already extracted.

Orthogonality assumes a prominent role in matrix computations. "Intuitively, orthogonal vectors are maximally independent for they point in totally different directions" (Golub & Van Loan, 1989, p. 70). The orthogonal vectors are at right angles to one another; consequently, the variance accounted for by one is unrelated to the variance accounted for by the other.

The process of extraction of principal components may be continued until the final axes explain only trivial amounts of the total variation in the overall data structure. As a result, the method of principal components may be thought of as a "way of orienting the configuration so that the *variation is concentrated into as few dimensions as possible"* [italics added] (Coxon, 1982, p. 71).

The proportion of total variation accounted for by a particular component is indicated by the size of its *latent root,* which is also referred to as the *eigenvalue.* The word *eigen* in German means *characteristic* or *special* (Parlett, 1980, p. 5).

This, says Coxon (1982), "can be thought of as a standard deviation measuring the dispersion of objects along that dimension" (p. 71). These values get progressively smaller as additional dimensions are incorporated, and when the values approximate zero the researcher can conclude that the additional dimensions account effectively for no variation and thus the dimensionality used is excessively high. Attempts to increase the number of dimensions to account for the total amount of variation generally overlook the purpose, power, and parsimony intended for the method, as will be shown.

Often the early developers of multidimensional scaling techniques used them in conjunction with cluster analysis. The methods were considered complementary, as noted by Kruskal (1977): "Clustering and multidimensional scaling are both methods for analyzing data. To some extent they are in competition with one another. Much more, however, they stand in a strongly complementary relationship. They can be used together in several ways, and these joint uses are often desirable" (p. 17).

A key difference noted between MDS and clustering methods is that multidimensional scaling "provides a spatial representation for the proximities, while clustering provides a tree representation for them," according to Kruskal (1977, p. 29).

Additionally, he notes (1977), multidimensional scaling may be best suited to

represent the data structure information of large dissimilarities, while clustering may provide more detailed data structure information relating to small dissimilarities:

> Consider hierarchical clustering. It is a common experience in many applications to discover that the small clusters fit well, and are often meaningful groups, but that the large clusters high up on the tree fit poorly and do not seem meaningful. . . . Now the small clusters are based on the small dissimilarities and the large clusters are based on the large dissimilarities. Thus, clustering appears to be extracting meaning from the small dissimilarities but not from the large ones. . . . On the other hand, consider multidimensional scaling. It is notorious that local features of the arrangements are not meaningful. Small changes in the data can cause drastic changes in the local position and arrangement of the points. . . . On the other hand the general position of the points within the configuration is meaningful. . . . Since the local arrangement reflects the small dissimilarities, and the global position reflects the large dissimilarities, we see that multidimensional scaling is extracting information about the large dissimilarities. (p. 33)

On this point, Coxon (1982) concurs, suggesting that MDS maps provide for more reliable interpretation for global distances between points or clusters than for local distance between points that are relatively close.

Shepard (1980) compares the use of multidimensional scaling, fitting additive trees, and hierarchical clustering. It would be a mistake, he argues, to ask which of these methods reflects **the** correct model, for "different models may be more appropriate for different sets of stimuli or types of data. Even for the same set of data, moreover, different methods of analysis may be better suited to bringing out different, but equally informative aspects of the underlying structure" (p. 397).

Different methods of interpretation, agrees Coxon (1982), "often provide convergent evidence about both local and global aspects of the structure or configurations which, with a little imagination, can be invaluable in aiding interpretation" (p. 116).

Interpreting the MDS Configurations

In a text on multidimensional scaling Coxon (1982) introduces his chapter on "Interpreting Configurations" with a quotation from A. A. Milne's *The House at Pooh Corner:*

> "Do you know what this is?"
> "No," said Piglet.
> "It's an *A.*"
> "Oh," said Piglet.
> "Not *O—A,*" said Eeyore severely. (p. 93)

The conversation between the two charming characters in children's literature illustrates an important point related to the use of MDS techniques in research. While multidimensional scaling can provide a visual representation of data structure that obviously is easier to review than a matrix of coefficients, the point is not to simply draw a picture or make a map representing the data structure but to *interpret the configuration reasonably and meaningfully.*

"The substantive interpretation of a spatial configuration obtained by multidimensional scaling is usually a matter of paramount importance. Typically, in fact, such interpretation is *the* end result which the investigator is seeking" (Shepard, 1974/1982, p. 5).

In interpreting a configuration, according to Coxon (1982), the researcher should ask what information is *significant* and *stable:*

> Our interpretation is essentially a two-stage process: First, we look for significant patterns in the configuration, i. e. detect structure, and secondly, we ascribe a meaning or interpretation to those patterns or structure. In so doing, it is important that the patterns make use of features of the configuration that are not simply arbitrary artefacts of the scaling procedure. The first questions, then, are: What information is significant and which

> aspects are stable in a configuration obtained from the basic MDS model? (p. 93)

The set of relative distances between the data points is the most basic significant information. Patterns and meanings are explored in the configuration. As Coxon (1982) notes, "In fortunate circumstances, hitherto unsuspected characteristics of the data may then become apparent" (p. 95). The configuration also may be interpreted on the basis of the most extreme positive and negative coordinates on each dimension. The properties of each dimension can be identified, often intuitively (or through more complex factor analytic procedures that, again, depart from the appealing simplicity of the visual representations).

One of the decisions facing the researcher is the determination of *how many dimensions* are appropriate and optimum for any particular application. As implied in this discussion, usually this will depend on the purpose for which a particular multidimensional model is being constructed (for exploration of meaningful patterns, for explanation of maximum variations, etc.). A number of researchers have addressed and debated this issue. Among them, Coxon (1982) suggests:

> A two-dimensional solution is the easiest to comprehend because it can be readily assimilated, and whereas *a third dimension can be easily visualized,* [italics added] higher dimensionalities, can not. "If a solution exists it probably exists in two dimensions; if it doesn't it certainly exists in three," might be a reasonable extension to Shepard's law [a rule ascribed to Shepard]. (p. 87)

"In the worst cases," according to Shepard (1974/1982), "an overriding preoccupation with the reduction of stress to some desired level has led to solutions in four or more dimensions where (a) the configuration can not be visually apprehended and is probably not statistically reliable anyway, and even (b) where attempts at

substantive interpretation, if any, have been based solely on the coordinates for the points as they are printed out with respect to the unrotated axes of the solution" (p. 6).

In the context of discussing the qualities of good theory, Westley (1963) notes, *"The parsimonious explanation is the one that accounts for the most variance with the fewest propositions"* (p. 249). His point also may be applied to the notion of dimensionality in multidimensional scaling. As he well notes, parsimony is valued in science.

MDS—Not Just Another Technique

Forgas (1974/1982) makes the observation that multidimensional scaling "can be an important tool for discovery" and thus can constitute a research strategy. In fact, he notes, in the areas where MDS has been applied, such as person perception, political behavior, the study of social structure, social episodes and the study of self concept, it has affected research profoundly. It is in this sense that MDS can be regarded as more than simply another statistical technique.

The point of multidimensional scaling, as these scientists have observed, is the representation of data patterns and interconnections that otherwise might not be apparent and that very well may suggest new exploration directions and thereby lead to new understanding of phenomena of interest. The use of multidimensional scaling techniques is restricted, therefore, only by the creative imagination of the researcher.

To conclude this introductory discussion on multidimensional scaling,

following Hough's (1988) advice to quote *directly* the most effective statements, repeated is a lengthy but illuminating observation by Westley (1963) discussing the role of creativity in scientific inquiry:

> Creative insights are demanded at every level of science, from the first germ of an idea for a conceptual restructuring that begins to find some shape or order in an apparently shapeless mass of data or of seemingly conflicting reports, to the creative use of analytical devices to feel out hidden richness in new data, to the brilliance required in interpretive insights in the writing of final research reports, pointing to hitherto untapped relationships and probing implications for future research. Scientific work is demanding in terms of the special skills it requires of competent practitioners. But it is vastly more demanding in the realm of ideas than of skills. Two favorite adjectives of scientists are "elegant" and "exciting." Scientific method provides a model for elegance, but only the richness of its creativity can provide the excitement. (p. 271)

Concept Mapping

The descriptive terminology of *Concept Mapping* has been applied to a variety of intuitive, creative, and quantitatively analytical techniques, one of which will be employed in this study. The range of techniques referred to as Concept Mapping merit review in this context, because some important commonalities may be seen.

The literal meaning of the phrase *Concept Mapping* is the drawing of an idea or generalized idea of a class of objects. Some of the advantages of visual representations as noted by Fisher (1936), Young (1987), and Coxon (1982) were discussed in the previous section. Some of the methods referred to as Concept Mapping—including procedures used in quantitative analysis and creative learning or expression—are compared in Table 4, and will be described in the following discussion.

Table 4. Types of Concept Mapping

Method	Citations	Basis	Uses for Method
Concept Mapping	(Miller, 1995a, 1995b)	Multidimensional Scaling Hierarchical Cluster Analysis with Cosine Similarity Measure Uses VBPro[a] and VBMap[a] Computer Programs	Content Analysis of Natural Language Text
Frame Mapping (an application of above)	(Miller, 1995a, 1995b) (Miller & Riechert, 1994)	Same as Above with Use of Code Source Identifer Terms	Frame Analysis of Natural Language Text
Concept Mapping	(Trochim 1989a, 1989b) (Mannes, 1990)	Group Brainstorming Input Multidimensional Scaling Cluster Analysis with Ward's Algorithm Uses Concept System Computer Program	Pre-Implemenation Program Planning
Concept Mapping	(Novak & Gowin, 1984)	Key Ideas and their Linkages	Educational Tool for Increasing Learning
Mind-Mapping	(Buzan, 1984a, 1984b, 1983, 1976)	Multidimensional Note-Taking	Remembering, Analyzing, Critical Thinking
Clustering	(Rico, 1983)	Nonlinear Brainstorming Process (Similar to Free Association)	Creative Writing as Natural Expression Form

[a] Available at this writing at URL: http: //excellent.com.utk.edu/~mmmiller.

While each of these procedures is distinctive, they also share some noteworthy features and in the aggregate support the power and appeal of the visual representation of relationships between concepts.

Concept Mapping with VBPro Programs

The concept mapping method employed in this research is an innovative method for multidimensional scaling of concepts and uses a family of computer programs called VBPro that were designed for content analysis of verbatim text. Use of the VBPro programs, including VBMap, will be discussed and illustrated in detail in Chapter IV of this report. As noted previously, the programs were developed by Miller (1995a, 1995b) at The University of Tennessee and have been used in a variety of research applications to derive multidimensional scaling configurations of key term and concept co-occurrence structure in text. This study will employ a special application of Concept Mapping, which is introduced here as Frame Mapping.

Recent descriptive and theory-related studies demonstrate the usefulness of Concept Mapping, a multidimensional scaling procedure, in a variety of research applications. The usefulness of Concept Mapping in identifying and analyzing themes in text has been demonstrated in recent studies of media coverage of various topics including pesticides (Miller & Riechert, 1994) and the French abortion pill RU-486 (Andsager & Miller, 1994). Researchers also have used Concept Mapping in identifying patterns in public opinion research literature (Miller, 1994) and in analysis of open-ended survey responses in studies of source credibility and celebrity-message

congruence (Chew & Kim, 1994), congruence of candidate attitudes with voter preference (Chew & Miller, 1993), and the source-message effectiveness model (Chew, Mehta, & Oldfather, 1993).

The importance of improved methodology in studying media framing is noted by Tankard, Hendrickson, Silberman, Bliss, and Ghanem (1991) and Hendrickson (1994). Tankard et al. (1991) criticize the traditional qualitative methods of studying media frames as identification of frames "by fiat" (p. 1).

Hendrickson (1994) observes, "The difficulty with the 'researcher fiat' approach is that it does not bother to test the reliability of the frame assigned to media content by the author" (p. 14). Hendrickson notes the difficulty in measuring media frames reliably and the usefulness of "the concept of degree of framing. . . . To build theory in the domain of media framing, we must be willing to perceive this variable, like so many others, as existing on a continuum" (1994, p. 131). The robustness, the reproducibility, the precision, and the power of Concept Mapping in identifying themes and studying media frames give this method obvious advantages over analysis methods using conventional coding procedures. Compared to the methods employed in earlier studies of media framing, Concept Mapping appears to be a promising answer to the call for a more rigorous intersubjective approach.

Methodologically, Concept Mapping offers important improvements over traditional approaches to identifying and comparing themes in text. First, it allows the themes to emerge *from the text itself* rather than from a typology developed by the researcher—which runs the obvious risk of overlooking an important theme present in

the text. In addition, Concept Mapping provides precise methods of measuring relative emphasis of themes in text, avoiding the problem of intercoder reliability faced in traditional content analysis approaches.

Reliable identification of themes and precise measurement of relative theme emphasis are critical to the rigorous analysis of framing. As Entman notes, frames can be detected by "probing for particular words" (1991, p. 7) because text contains frames, "which are manifested by the presence or absence of certain keywords, stock phrases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments" (1993, p. 52).

Similarly, Priest refers to "thematic emphasis of coverage" as "a media framing effect" (1995a, p. 46).

As noted by Miller (1995a), Concept Mapping is a multidimensional scaling procedure developed for use in computer-assisted analysis of natural language text—such as news reports and open-ended interviews. Unlike other computerized content analysis programs, Concept Mapping derives spatial representations from the co-occurrence of terms by generating term frequencies and a matrix of cosine coefficients based on the terms used. The formula for the co-occurrence cosine coefficient, with A and B representing the respective terms, according to Salton (1989), is:

$$COS = [\ \Sigma\ (AB)\ ]\ \div\ \sqrt{[(\Sigma A^2)(\Sigma B^2)]}.$$

The principal components of the co-occurrence cosine coefficient matrix can be extracted, standardized, and plotted or mapped spatially. Concepts appearing close

to each other are related through co-occurrence and therefore, represent a cluster of related terms.

The usefulness of this procedure in identifying and comparing central concepts in various types of text has been demonstrated by Chew and Miller (1992), Chew and Mehta (1992), and Chew, Mehta, and Oldfather (1993, 1994), Miller (1994), Miller and Riechert (1994), and Andsager and Miller (1994).

Finding and Mapping Co-Occurring Terms, Concepts

The VBPro programs (which include VBMap) developed by Miller are used to derive multidimensional configurations of data representing the co-occurrence of key terms and concepts in text. Multidimensional scaling and hierarchical cluster analysis methods, using the cosine similarity measure, are applied. The VBPro and VBMap programs are fully compatible with commercial statistics packages such as SPSS® and SAS® and work in conjunction with them.

At the time of this writing VBPro is available via anonymous FTP at the address: excellent.com.utk.edu in the pub/mmmiller directory under the file name VBPAK.EXE. The file is a self-expanding zip file that can be copied to a DOS-based computer hard drive. A VBPro directory should be set up before the file is copied on to the computer. The program is initiated by keying in *VBPro* at the VBPro directory prompt ("C:\VBPro>"). The user's guide manuals—*User's Guide for VBPro: A Program for Analyzing Verbatim Text* (Miller, 1995b) and *User's Guide for VBMap: A Program for Multidimensional Scaling of Concepts* (Miller, 1995a)—are in ASCII

format under the names VBPRO.MAN and VBMAP.MAN. The programs also are available, at the time of this writing, from the home page http://excellent.com.utk.edu/~mmmiller/vbpro.html.

The Concept Mapping analysis techniques developed by Miller are related conceptually to a set of procedures developed by several educators and used in various ways for learning, creativity, and program planning—in that these techniques demonstrate the benefit of visual representation of relationships among ideas and concepts. Some of these techniques also are referred to as Concept Mapping, though are methodologically quite distinct from the Concept Mapping methods used in this study, which are based on the use of Miller's VBPro programs. For purposes of comparing and contrasting, some of these other methods are reviewed in the following section.

Schematic Device for Hierarchy of Ideas

Another method referred to as Concept Mapping, in which diagrams are used in curriculum planning or studying, is advanced by Novak and Gowin (1984). They discuss the use of drawings they refer to as concept maps—which represent key concepts or ideas and the propositions that link them—as teaching-learning tools to illustrate hierarchy of ideas. They describe this type of concept map as "a schematic device for representing a set of concept meanings imbedded in a framework of propositions" (p. 15).

Novak and Gowin (1984) report on early studies and uses of this type of

teaching tool (citing Cardemore, 1975; Bogden, 1977; and Moriera, 1977), and they describe their own work with the method with college students and later elementary students (citing Novak, Gowin, & Johansen, 1983). Novak and Gowin credit the theoretical foundation of their concept mapping teaching-learning method to Ausubel's cognitive learning theory, noting that they incorporate his concept of subsumption—the idea that information is often subsumable under larger concepts. In addition, they draw from Ausubel's principle of progressive differentiation, which suggests that learning is an on-going process.

Interlinking Key Concepts

The use of diagrams for linking ideas in learning also is advanced by Buzan (1976). He promoted the use of diagram drawings in note-taking to promote recall and creative thinking. In his "brain pattern key words noting" and "organic study" method, a main idea is drawn to form the center of a diagram, from which related ideas are drawn branching out as dictated by their interconnections. Each resulting diagram pattern will be unique and build a mental picture that can be more easily and more completely recalled than traditional linear note-taking. In his non-linear style of note-taking and studying, subsequent information can be integrated conveniently. He argues:

> If the brain is to relate to information most efficiently, the information must be structured in such a way as to 'slot in' as easily as possible. It follows that if the brain works primarily with key concepts in an interlinked and integrated manner, our notes and our word relations should in many instances be structured this way rather than in traditional 'lines' (p. 87-88).

Buzan (1983, 1984a, 1984b) develops his Mind-Mapping system for key words and key images further in particular application to memory, suggesting such systems can be used "as gigantic filing systems for the mind, enabling extraordinarily fast and efficient access" and contributing to academic success (1984b, p. xi).

Recognizing Connections

Similarly, Rico (1983) promotes a creative thought process similar to free association, which is useful in creative writing as a natural expression form. He refers to this "nonlinear brainstorming process" (pp. 11, 28) as *clustering,* in which key words are drawn and circled on a page with related ideas drawn in circles connected to the "nucleus" word, phrase, or impression. Explains Rico, "Clustering always unfolds from the center, like ripples generated by a rock thrown into a pond" (p. 31). He argues that recognizing connections and visualizing interconnectedness of ideas are critical to the process of perceiving patterns or meanings.

In his preface Rico credits a diverse duo for his inspiration—Bogen for his research in the 1970s on brain hemispheric specialization and creativity, as well as Ehrenzweig (1967) for a roadmap-like diagram depicting the process of a creative search in *The Hidden Order of Art.*

Ehrenzweig's (1967) "maze (serial structure) of a creative search" (p. 36) is representative of comprehensive *(übersehbar)* view of affairs, the need to "visualize syncretistically" (p. 38) or comprehensively, he suggests, citing the writings of Wittgenstein.

Connecting and Planning

Trochim (1989a, 1989b) describes an analysis method referred to as concept mapping, which is used in pre-implementation program planning. The method derives pictorial multivariate conceptual frameworks from group brainstorming input. The concept mapping method uses a computer program known as Concept System, which is based on multidimensional scaling and cluster analysis. Uses of the method for various program planning applications are described by Galvin (1989), Mannes (1989, 1990), Keith (1989), Linton (1989), and Trochim, Cook, and Setze (1994).

The methods discussed by Novak and Gowin (1984), Buzan (1983, 1984a, 1984b), Rico (1983), and Trochim (1989a, 1989b) and others are reviewed to prevent confusion with the Concept Mapping methods, including the Frame Mapping application, employed in this study.

Frame Mapping

The methods employed in this study include a special application of Concept Mapping that is introduced in this report as the *Frame Mapping Method,* and which will be discussed in detail in Chapter IV of this report.

Using the text analysis and multidimensional scaling methods available in Miller's (1995a, 1995b) VBPro and VBMap programs, the Frame Mapping Method allows the researcher not only to identify, examine, and compare predominant themes and frames in text, but it also allows for comparisons between and among different sources.

Like Concept Mapping, the Frame Mapping Method is a computer-assisted content analysis technique used to identify recurring and co-occurring keywords in text. Mathematically, the method is based on construction of a term-by-term similarity or cosine coefficient matrix and extraction of the principal components for analysis of term co-occurrence data structure thorough multidimensional scaling and cluster analysis. Concept Mapping, in other words, provides mathematical procedures for determining the patterns of terms in text, or for identifying which terms occur *most frequently* and *relatively exclusively together* in text, making them the essence of, or representative of, the particular text from which they are distilled.

Frame Mapping carries the term analysis a step further through the use of code *source identifier terms* inserted in the text from distinct sources (or advocacy groups, as in this study). In Frame Mapping, source code terms are inserted into the text prior to the mathematical computation of the term-by-term cosine coefficient matrix, the extraction of principal components, and the derivation of multidimensional scaling configurations (concept maps) and cluster analysis results from the term co-occurrence similarities. In this way the researcher can complete these procedures with the inserted code terms to determine which terms occur with (that is, in this study, in the same cases or articles as) each unique identifier term. The terms that locate closest to the identifer terms in the concept maps, and which cluster with the code terms in the cluster analysis procedures, will be the terms that reflect the themes, and therefore, the issue frame, communicated by each source.

The Frame Mapping procedures thus identify the words and phrases used

frequently, and relatively exclusively, by each source in a set of frame makers. Computer-assisted content analysis that is focused on the occurrence of the sets of terms in text allows for comparison of relative prominence of competing issue frames with precision and validity.

The notion that the frequency of occurrence of a term in text indicates its significance is credited to Luhn, according to Schultz (1968), Gerrie (1983), and others. In the context of information retrieval Luhn (1958/1968) argues:

> The justification of measuring word significance by use-frequency is based on the fact that a writer normally repeats certain words as he advances or varies his arguments and as he elaborates on an aspect of a subject. This means of emphasis is taken as an indication of significance. The more often certain words are found in each other's company within a sentence, the more significance may be attributed to each of these words. (p. 119)

The Concept Mapping and Frame Mapping Methods apply these notions, and the principles of "probing for particular words" suggested by Entman (1991, p. 7). The Frame Mapping Method will be described in detail and illustrated in this report. Notably, this appears to be the first dissertation using this type of Concept Mapping and its application of Frame Mapping. The analytic procedures were developed by Miller and promise to place new and precise frame analysis tools in the hands of researchers.

Design of the Study

This study will employ the methods reviewed in this chapter, elaborating in detail the Frame Mapping Method as an innovative spplication of Concept Mapping.

Analysis of Research Question 1: *Stakeholder Framing*

Research Question 1 suggests that diverse stakeholders involved in policy agenda debates will tend to frame or define a policy issue differentially, emphasizing distinct aspects or concerns related to the overall issue.

To test this research question a sample of news releases mentioning wetlands from diverse stakeholder groups—conservation advocacy groups and property-owner advocacy groups—will be obtained, to which the Frame Mapping Method will be applied for determining terms representing the *Conservation Frame* and the *Property-Owner Frame.*

The topic of wetlands is relevant to a number of stakeholders, as established in the recent studies by Nicodemus (1995) and Krogman (1995). In addition, the topic is adequately complex, involving ambiguities that would provide grist for selectivity and definition involved in issue framing among stakeholders. The identification of conservationists and property-owners as contrasting stakeholders in the wetlands debates is suggested by the previously-mentioned studies and a 1990 survey by *U.S. News & World Report* (in the March 19, 1990 issue) on environmental issues including wetlands. Leaders of 10 conservation groups and 10 business and trade associations were asked to grade the efforts of the Bush presidential administration related to environmental efforts. Conservation groups, including the National Aududon Society, the National Wildlife Federation, The Nature Conservancy, and the Sierra Club gave President Bush a *D* on wetlands policy leadership, while business and trade associations including the American Farm Bureau Federation gave him a

grade of *C* (Roberts, Walsh, Satchall, Andrews, & Friedman, 1990).

News releases from groups representing these stakeholders—conservationists and property-owners—will be obtained for specification of sets of terms through the Frame Mapping Method that represent the issue frame by each group. The procedures for the Frame Mapping Method will be described in detail in Chapter IV.

The statistical test for difference in means in two independent samples, the *t*-test, will be applied to the news releases for the variables *Conservation Frame* terms and *Property-Owner Frame* terms. Thus, for these variables the difference in mean term frequency between news releases from the conservation advocacy groups and from the property-owner advocacy groups will be tested.

The analysis and subsequent results relating to this research question will be presented in the section on *Frame Mapping* in Chapter IV.

Analysis of Research Question 2: *News Media Framing*

Research Question 2 suggests that in news media coverage of complex policy issues involving diverse stakeholders, news articles will emphasize different themes or frames depending on the stakeholder(s) quoted as sources within a particular article.

To test this research question a sample of news articles covering this complex policy issue over an extended period of time will be obtained and analyzed with regard to relationships among news sources and relative frame prominence. News articles mentioning wetlands that were released by Associated Press from July 1984 until June 1995 will be investigated. The Associated Press is the most comprehensive

supplier of general interest news to news media in the United States, serving more than 15,000 print and broadcast media outlets *(DIALOG Database Catalogue,* 1995). Page and Shapiro (1992) note the important influence of the Associated Press and other wire services on the content of news media coverage: "Practically all Americans are exposed to the same facts and ideas, through network television news and the wire service reports that dominate daily newspapers," (p. 319).

Sets of frame terms specified in the analysis for Research Question 1 will be used to identify and measure relative prominence of the Conservation Frame and the Property-Owner Frame in the news coverage. On the two variables of Conservation Frame terms and Property-Owner Frame terms, statistical tests will be conducted under three conditions of stakeholder representation in news articles. Mean frequencies of frame terms will be compared in articles that mention stakeholders (one group, the other group, or both groups), articles that give indirect or direct attribution to stakeholders (one group, the other group, or both groups), and articles that directly quote one group first compared to articles that quote the other group first. One-way analysis of variance and *t*-tests will be conducted to determine the significance of any differences among and between the means. Post hoc tests to identify differences among more than two groups will be conducted as appropriate.

The single-factor analysis of variance statistical model is appropriate for testing research hypotheses or questions that involve two or more population means and tests of differences among their sample means. The research hypothesis for comparing the means among three groups, thus, is that the populations are not

different, implying the null hypothesis to be that the means are equal. While the analysis of variance results may give statistical support for rejecting the null hypothesis in favor of the alternative research hypothesis, they do not identify where the differences among the means occur. Follow-up or post hoc tests, however, may be used to obtain this information (Williams, 1986).

The analysis of variance tests serve to partition the observed variability—in these cases the variability in frame occurrences—into variability (1) within a group and (2) among the means of the groups. The mean squares for between groups and within groups, based on the variation that occurs among and within the groups, provide the numerator and the denominator in the statistical *F ratio* or *F* value, from which is determined the statistical significance (Norušis, 1993).

When compared groups are similar, the variability or variance between them and within them will be similar, while the probability that the groups represent different populations increases as the variance between the groups exceeds the variance within the groups (Williams, 1986). Once statistical difference among the means is established, researchers may use one of several tests to determine which groups are, in fact, different at a statistically significant level. Among the available multiple comparison procedures for comparing the means of more than two groups and for identifying the groups in which significantly different means occur, the Scheffé test is one of the more conservative tests. Consequently, statistical differences identified among groups by the Scheffé test can be evaluated with relative confidence.

The comparisons and statistical tests of relative prominence of frame terms in

news articles using different news sources hold theory-related implications for news content, which will be elaborated in a later section. The frame terms specified by the Frame Mapping Method also will be used in investigating changes in prominence of competing frames in news coverage of a complex issue over time, as the discussion will show.

The analysis and subsequent results relating to Research Question 2 will be presented in the section on *Frame Analysis of News Coverage* in Chapter IV.

Analysis of Research Question 3: *Frame Changes Over Time*

To explore the relative prominence of the Conservation Frame and the Property-Owner Frame in the news coverage on wetlands, observations will be made related to the occurrence of frame terms at differing levels of analysis—in the overall 11-year period, in each annual period, and in individual articles. Possible influences over relative frame prominence, and implications of trends and changes within frame representation in news coverage, will be explored.

Additionally, the construction of various indices will be accomplished to support analysis of this research question. These will include the Conservation Frame Index, the Property-Owner Frame Index, the Conservation Frame Purity Index, and the Property-Owner Frame Purity Index. These indices will allow the rank ordering of articles in the large sample by relative prominence or pure representation of alternative frames, and the rank ordered articles may be examined to address any number of questions. For example, the articles may be examined with regard to

relative frame prominence and news sources, as will be shown.

The analysis and subsequent results relating to Research Question 3 will be presented in the section on *Frame Analysis of News Coverage* in Chapter IV.

This chapter on *Methods* reviewed the various analytic tools to be applied in the analysis reported in this dissertation. These methods include content analysis, cluster analysis, multidimensional scaling, and Frame Mapping, an innovative application of Concept Mapping. In addition, this chapter presented the design of this study with regard to addressing the three research questions presented in Chapter II. These research questions involve stakeholder framing, news media framing, and frame changes over time.

Results of the analyses conducted according to the design of the study outlined in this chapter are presented and discussed in the following chapter, *Analysis and Results*.

CHAPTER IV.

ANALYSIS AND RESULTS

Frame Mapping

This chapter will apply and describe in detail the analysis method referred to as *Frame Mapping* in addressing the research questions relating to whether diverse stakeholder groups frame, or define, complex public policy issues differentially; how the use of news sources may affect presentation of different issue frames in news coverage; and whether frames change systematically over time in news coverage.

The basis of the Frame Mapping Method is described in the previous chapter. Frame Mapping is a special application of Concept Mapping, which involves derivation of multidimensional scaling configurations or concept maps through co-occurrence of terms in natural language text, such as news articles. Co-occurrence patterns among the terms are identified in Concept Mapping through construction of a term-by-term similarity cosine coefficient matrix (from a document-by-term matrix) and extraction of the principal components. This process is described in the section on *Extraction of Principal Components* in Chapter III. Values of the extracted components may be used as coordinate values to produce multidimensional maps that indicate the term co-occurrence data structure—terms that occur in proximity in the text will be located together on the concept map. Similarly, the information can be used to produce cluster analysis dendograms that provide another type of visual representation of how the terms relate to one another—some terms cluster together to

form meaningful themes and frames, some themes or word clusters tend to occur together or to not occur together, and so on.

Frame Mapping is based on the same mathematical principles and procedures, except the method also employs the use of unique inserted code terms that identify sources within the text. In the resulting analysis relative location of the identifier code terms in the concept maps and cluster analysis dendograms indicates empirically and rigorously which substantive terms occur relatively exclusively in text from each source. These sets of terms, therefore, represent the theme(s) and issue frame communicated by each particular source. The procedures will be elaborated in this section.

The five stages or steps of the Frame Mapping Method, shown in the model presented as Figure 1, are (1) planning, (2) obtaining and preparing data, (3) analysis, (4) generation of maps and dendograms, and (5) interpretation. The model helps to visualize the Frame Mapping Method, although the model is an over-simplification; ideally, activities will cycle through a series of iterations between analysis, generation of maps and dendograms, and interpretation.

The first portion of this chapter will describe the procedures and provide examples of analysis, using this method, of framing of a public policy issue by diverse stakeholders. The second portion of this chapter will use the findings of this frame mapping analysis as the basis for investigating news media coverage of this complex public policy issue.

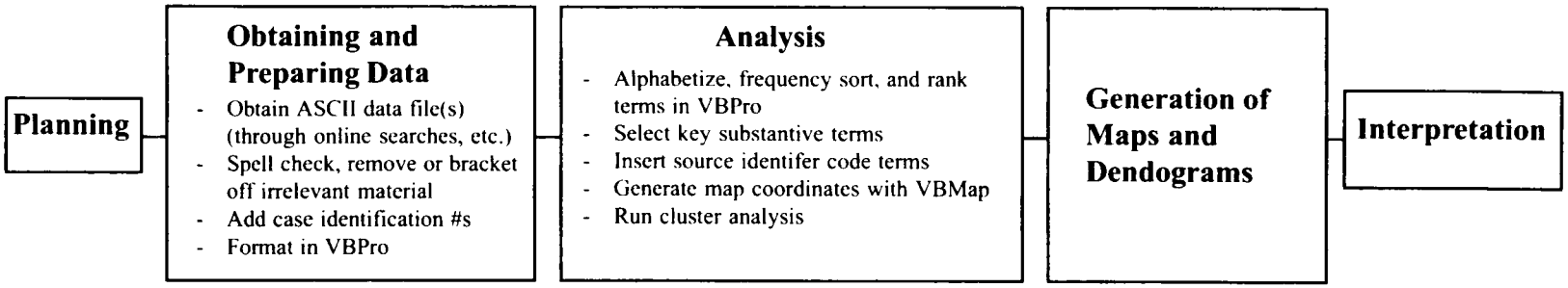


Figure 1. The Five Stages of the Frame Mapping Method, an Application of Concept Mapping

The relative representation of distinct issue frames in news coverage, in relationship to attribution to different stakeholders as news sources, will be investigated. The relationship of frame representation in news content and different conditions of source attribution also will be addressed specifically. Additionally, the relative prominence of competing frames in news coverage over time will be investigated.

This analysis will employ computer-assisted analysis of the predominant themes in text representing (1) framing of a policy issue by different stakeholder groups and (2) those frames in news coverage, over time, of the policy issue. The analysis of most frequently-occurring terms and co-occurring terms in large volumes of text would be a daunting, time-consuming, and virtually impossible task for researchers without the means to conduct the analysis efficiently, reliably, and flexibly. Without appropriate analytic methods, the relative emphasis of different terms and the patterns of term co-occurrence would be practically impossible to investigate. The quantitative analysis systems developed with the innovative VBPro computer programs provide the means to effectively identify and compare issue frames—as represented by co-occurring key terms—by different sources. The usefulness of the VBPro and VBMap programs will be demonstrated.

A previous section developed the conceptualization of framing as the definition of an issue, object, or event by selection and corresponding deselection of certain aspects, among those available, to describe it. The differential framing, or definition, of a policy issue by diverse stakeholders has been suggested. It is expected that in

discussing an issue of common interest, divergent groups will describe and define the issue quite differently. By implication, as stakeholders diverge in their points of view related to an issue they will focus on separate themes and concepts—even using different terms in communicating, for themes are expressed in the emphasis and recurrence of key terms, and the themes together reflect frames.

Stakeholders' definition of issues, therefore, will be reflected in the terms they use in discussing them. The meaningful, substantive terms that are used frequently, and which tend to be used together rather exclusively by a source, provide measurable and comparable expression of differential framing by particular sources.

Chaffee (1991), Kerlinger (1986), and others draw the distinction between *constitutive* and *operational* definitions. "The concept of *intelligence,* for example, is usually explicated as including verbal, quantitative, analytic, and other abilities; operationally it may be represented by an IQ test score" (Chaffee, 1991, p. 11). A *constitutive definition* defines a construct with other constructs. Various selected definitions of framing reviewed earlier and summarized in Table 1, for instance, are examples of constitutive definitions.

An *operational definition* specifies how the construct will be measured in a particular study. The selective and relative usage of terms by various sources provides the basis of the operational definition of source frames as applied in this study. In this study, the operational definition of a frame is the manifest presence of the substantive terms that originate from a distinctive source and that occur most frequently and relatively exclusively together, forming one or more themes in natural language text.

The set of substantive terms together reflect a particular source's definition or frame of an issue. Of specific interest is the emphasis by different stakeholders of various aspects of an issue to define it. Different sources' frames or definitions of an issue will be specified through identification of the sets of substantive terms and concepts that are emphasized by each most frequently, emphasized relatively exclusively, and emphasized together, to form key themes. As Entman (1993) observes, frames "are manifested by the presence of certain keywords" (p. 53) and are present as "clusters of messages" (p. 57).

The first phase of the analysis conducted in this study is the identification of sets of substantive terms that reflect stakeholder frames. Identification of these sets of terms will be accomplished through the implementation of the Frame Mapping Method, as described below.

Frame Mapping Stage One—Planning

The first stage in the frame mapping process, as in many types of scientific inquiry, is formulation of the plan for the study. At this stage, selections related to policy issue, relevant stakeholders, and appropriate data should be addressed: (1) *What complex policy issue will be investigated?* (2) *Who are the stakeholders involved?* And (3) *What data can be obtained for the analysis?*

Policy Issue. As noted previously, the policy issue selected for the basis of this study is *wetlands*. As a policy issue for investigating the nature of stakeholder framing and news media framing, the topic of wetlands is appropriately complex,

controversial, continuing over time, and covered prominently in the news media. Thus, the wetlands policy debate reasonably is expected to offer adequate resource for addressing the research questions posed for this study.

Stakeholders. Two diverse types of stakeholder groups involved in policy debates related to wetlands—conservationists and property owners—were specified in earlier discussion. Focal organizations identified to represent these key stakeholders with face validity were the National Audubon Society, representing conservationists, and the American Farm Bureau Federation, representing property owners. Once the policy issue is determined and the stakeholder groups are specified, the remaining task in the planning stage involves developing a strategy for obtaining appropriate text to provide the data for the analysis.

Data Files. The computer-assisted procedures used in this study enable the researcher to analyze the content of large ASCII text files, which may be obtained in one of several ways. Appropriate text may be optically scanned or manually keyed in to create electronic text files, although "for large quantities of text this method is unappealing" (Salton, 1989, p. 29). A more convenient way to obtain files is to download files from an online database service.

In this study the Database Search Services department in The University of Tennessee Hodges Library was contacted to arrange some exploratory online searches relating to the availability of resources of particular interest. A trained information professional in the library department served as the *search intermediary*—the specialist who actually performed the online search. An initial online search was scheduled to

determine whether news releases from the key stakeholder groups were available from an online service (if not, an alternate data collection strategy could have been to contact the groups directly for copies of their news releases on the topic of interest). Online database services include the *DIALOG* service, an online information service encompassing more than 450 databases including *AP News* and *PR Newswire*. PR Newswire is a database including the full text of news releases of news releases from companies, public relations agencies, trade associations, government and non-government agencies, and other sources. News releases available currently from PR Newswire date from May 1987. The AP News database will be described later.

The PR Newswire database in the DIALOG service was accessed, and an exploratory search was conducted with the single search term of *wetlands*. The initial search revealed that more than 1,200 news releases mentioning wetlands, from various industry and organizational sources, were accessible through this database. Subsequent preliminary searches were conducted to determine whether, from among the news releases that mentioned wetlands, the originating sources included the specific advocacy organizations of particular interest—the National Audubon Society and the American Farm Bureau Federation. The searches confirmed that the news releases mentioning *wetlands* included some from each of these organizations. In order to obtain as many appropriate news releases as possible for this investigation, arrangements were made with the reference department for downloading the full text of all of the PR Newswire news releases (n = 1,226) that mentioned *wetlands,* from all sources, in ASCII files, on to several disks.

To review, the planning stage in the Frame Mapping Method involves making decisions and formulating strategies related to (1) policy issue, (2) relevant stakeholders of interest, and (3) data acquisition. The plan for the frame mapping analysis reported here called for investigation of issues definitions (1) within the policy topic of wetlands, (2) by two groups of relevant stakeholders—conservationists and property owners, (3) based on news releases mentioning *wetlands* that were distributed by advocacy groups representing each stakeholder group.

Frame Mapping Stage Two—Obtaining and Preparing Data

Once the plan for the frame analysis is developed, the next step in the Frame Mapping Method is the procurement and preparation of the data for the analysis.

Downloading News Releases. Through the assistance of the reference department at The University of Tennessee Hodges Library, the news releases mentioning *wetlands* were downloaded from the PR Newswire database. The DIALOG online information service was accessed through the Knight-Ridder Classroom Instruction Program, which provides a substantial discount to students. As specified in the exploratory preliminary searches described earlier, the final search was broad and straightforward: specified were all news releases, from *any* source, that included the word *wetlands* anywhere in the release. This search tactic yielded a total of 1,226 "hits" or news releases, which were downloaded in ASCII files for the computer-assisted analysis procedures. Once the news releases were downloaded from the database, a backup copy of the data files was made immediately and stored in a

secure location.

Identifying Sample. The text files were reviewed using a word processing program, and from the large group of downloaded news releases were identified the news releases from target advocacy groups, which would serve as the data set for the frame mapping analysis. The following steps were taken.

The text files were called into a word processing program (WordPerfect® 5.1 was used in this analysis) and reviewed. The word processing search procedure was used to identify all news releases originating from the focal stakeholder groups specified for the analysis—the National Audubon Society and the American Farm Bureau Federation. News releases from these organizations represent with face validity the conservationists' and property-owners' points of view in the wetlands issue because they discuss the issue in the advocacy group representatives' own words.

Identified for inclusion in the analysis were news releases originating from the National Audubon Society and the American Farm Bureau Federation and their local affiliates, as well as advocacy organizations that co-sponsored news releases about wetlands with them. (Several of the news releases from the target groups were co-sponsored with other similar organizations; for example, several releases from the National Audubon Society were co-sponsored by the Sierra Club and other similar conservation-oriented groups. News releases from state affiliates of the national groups also were identified for inclusion in the analysis; for example, the downloaded news releases included several from state affiliates of the Farm Bureau.)

These decision rules excluded from this analysis the downloaded news releases from all other sources, such as those originating from commercial corporations, governmental agencies, and other types of special interest and industry groups.

Through this selection strategy were identified for the analysis some 102 news releases including 58 releases from nine conservation groups and 44 releases from six property-owner groups. These groups are listed, along with the number of news releases from each of these organizations, in Table 5. The conservation advocacy group news releases used in this analysis are listed individually in *Appendix B* by case number, date and time of release, number of words, and organization. The property-owner advocacy group news releases used in this analysis are listed similarly in *Appendix C.*

Throughout this analysis, the 15 organizations listed in Table 5 will be referenced as *target groups* to distinguish them from other organizations that may be similar in cause, but which were not included specifically in this frame mapping analysis because they were not represented among the news releases that were obtained from PR Newswire database on which the analysis was based. The analysis will consider the wetlands issue frames (1) by the combined conservation target groups, (2) by the combined property target groups, (3) and also by each of the individual target groups.

Formatting Data Files. Once the large news release data set was obtained and the news releases for the analysis were identified, the data for were prepared for the frame mapping analysis using the VBPro and VBMap programs.

Table 5. Target Groups, Including Conservation Groups and Property-Owner Groups, Originating News Releases about Wetlands

Group	Number of Articles from Group
Conservation Groups (n = 9):	
National Aubudon Society	23
American Rivers	12
Sierra Club	9
The Nature Conservancy	7
Wildlands Conservancy	2
World Wildlife Fund	2
American Oceans Campaign	1
American Society of Landscape Architects	1
North Carolina Nature Conservancy	1
n =	58
Property Owner Groups (n = 6):	
American Farm Bureau Federation	13
Pennsylvania Farmers' Association	17
Ohio Farm Bureau	6
Pennsylvania Farm Bureau	6
California Farm Bureau Federation	1
National Cattlemen's Association	1
n =	44

Note. Conservation and property-owner advocary group sources of news releases mentioning "wetlands" (*n* = 102) from among news releases obtained from PR Newswire database through DIALOG (*n* = 1,226). The news releases were used in analysis of issue framing by diverse stakeholders, and the groups (*n* = 15) are referenced in this report as "target" groups.

The following procedures were used:

(1) With the backup copy of the data files permanently set aside, the files containing the entire data set were opened and reviewed.

(2) Word processing block-delete procedures were used to create from the original files of 1,226 releases a file containing *only* the 102 news releases identified for the analysis.

(3) A distinct case identification number was inserted at the beginning of each news release, or case, along with the pound symbol (#) to signify individual cases. For convenience, the consecutive numbers assigned by the online search process were retained as case numbers. (This included numbers 0001 to 1226, with numbers assigned by the search process even to those cases later excluded from the analysis.) Also for convenience, the initial *C* or *P* was added to each case number, depending on whether the news release originated from a conservation or property-owner group. The case identification numbers inserted in the releases, therefore, were #0007P, #0009C, #0011C, #0041P, . . . #1220C.

(4) Material extraneous to the analysis was bracketed off, because the VBPro program will ignore material in brackets. Extraneous material included information such as the release date and time, organizational contact name ("For more information contact . . ."), and database information.

(5) The entire file was checked for spelling and searched to ensure that no extraneous pound signs or brackets appeared within the news release texts.

(6) The text file was saved as a generic text file in the VBPro directory on an IBM Personal Computer.

(7) The VBPro program was then called up on the computer. As described in Chapter III on *Methods,* the program is initiated by keying in *VBPro* at the VBPro directory ("C:\VBPro>") after a VBPro directory is set up and VBPro is installed on a DOS-based computer hard drive. When VBPro is initiated, the opening menu includes several choices:

FORMAT
SEARCH
CODE
ALPHABETIZE
RANK
EDIT
DOS
PATH
QUIT

The *formatting procedure* was chosen by pressing the *Control* and *F* keys simultaneously. This called the formatting menu, which includes three items:

Press Choice Key
<1> File to format
<2> Check abbreviations . . . No
<3> Omit bracketed material . . . No

The name of the prepared (spell-checked, case numbered, and bracketed) text file with the 102 news releases was keyed in as the *File to format,* and the toggle for *Omit bracketed material* was changed to *Yes.* When the file name was input, a fourth selection appeared:

<B> egin formatting

The *B* key was pressed to initiate the formatting procedure. When the programs are running the screen indicates, *"Please wait."* The formatting and other procedures in VBPro require adequate hard drive space on the computer and, depending on the size of the file, the computations may take several minutes or more to run. For a text file of this size—215 pages—the formatting procedure took no more than a couple of minutes. When the procedures are completed the menu changes to read, *"Press Choice Key."*

The formatting procedure created a new formatted file from the prepared data file for subsequent analysis using VBPro. The VBPro program automatically assigned the formatted file the same file name as the generic text file from which it was created (with the extension *.FRM)* and saved the formatted file to the VBPro directory. The procedures for these preliminary steps also are described in the *User's Guide for VBPro: A Program for Analyzing Verbatim Text* (Miller, 1995b).

Frame Mapping Stage Three—Analysis

Alphabetizing Terms with VBPro. Once the formatted file containing the 102 news releases was created, the VBPro program easily accommodated a number of additional procedures for analyzing text. The *alphabetizing procedure* was selected by pressing simultaneously the *Control* and *A* keys from the VBPro menu. The alphabetizer menu includes four items:

Press Choice Key
<1> File to Alphabetize:
<2> Capitals Control: None
<3> Include/Exclude File: None
<4> Convert to All Caps: No

The file name to alphabetize (the formatted file described previously) was keyed in and the toggle for *Convert to All Caps* was changed to *Yes* so that the file output would list the terms in all capitals. When the file name was keyed in a fifth selection appeared:

<B> egin Alphabetizing

The *B* key was pressed to initiate the alphabetizing procedure. The screen again indicated *"Please wait"* while the procedure was running, which again required no more than a couple of minutes.

The alphabetizing procedure output is a file listing *all terms alphabetically* in the text file, along with their frequency of occurrence in the entire text. The alphabetized term file automatically was assigned a file extension of *.ALF* by the VBPro program and was saved in the VBPro directory in the computer. The alphabetized file of all terms may be opened in the word processing program of choice and either inspected on screen or printed for reference or review for the terms of interest. The created alphabetized file of the terms included in the organizational news releases was 110 pages long and listed terms (with their frequency of occurrences in the file) such as the following:

.
.
.
AGRICULTURE, 62
.
.
AUDUBON, 99
.
.
ENDANGERED, 84
.
.
FARM, 297
.
.
PROPERTY, 120
.
.
SPECIES, 107
.
.
.

Frequency Sorting Terms. Once the formatted and alphabetized files were created and saved to the VBPro directory, the VBPro frequency *ranking procedure* was run to produce a file that lists all terms according to frequency of occurrence. The frequency ranking procedure is called by pressing both the *Control* and *R* keys on the VBPro menu. The ranking menu then appeared and asked for the name of the alphabetized file to rank. The name of the file was entered (it must have an extension of *.ALF)*. The ranking procedure ran within a couple of minutes, creating a 110-page report that lists the terms by raw frequency. The report also includes the relative frequency of the terms, given in decimals of one percent, as well as other summary information discussed below.

Both the absolute frequency and the relative frequency of terms are useful

numbers to use in comparisons of term usage in separate data sets of similar or divergent sizes. In this analysis, the output of the VBPro program in the *.FRQ* file (1) listed each term in 102 news releases making up the data set by frequency of occurrence and (2) reported the data file contains "5,832 types and 50,059 tokens," indicating, respectively, the number of *different terms* and *total terms* in the file. According to the VBPro *.FRQ* file output, these terms occurred in frequencies ranging from 1 to 3,332 in the news releases. Not surprisingly, the grammatical function term *the* occurred most frequently, while a large number of substantively meaningful words occurred numerous times, and some 2,543 terms (from *abandon* to *zoo)* occurred only once. The ranking procedure output included the following terms (listed in order of raw frequency, and also indicated in relative frequency in decimals of one percent):

THE, 3332, 6.643
OF, 1801, 3.590
AND, 1655, 3.299
TO, 1441, 2.873
IN, 875, 1.744
A, 818, 1.631
.
.
.
WETLANDS, 368, 0.734
.
.
.
FARM, 297, 0.592
.
.
RIVER, 217, 0.433
WATER, 209, 0.417
.
.
YELLOW, 1, 0.002
ZOO, 1, 0.002

The frequency rank-sorted file was assigned a file extension of *.FRQ* by the VBPro program and was saved in the VBPro directory. Like the alphabetized list of all terms in the document set, the frequency-ranked list of terms may be called up in the word processing program of choice and printed for reference or simply reviewed on screen. (Depending on the size of the formatted text file being processed, the alphabetized and frequency-sorted lists of terms can be rather long; therefore the researcher may prefer to review them on screen rather than handle bulky hard copies.)

To accommodate the subsequent frame mapping analysis, the frequency-sorted list of terms in the 102 organizational news releases was printed and inspected for selection of *substantive* terms that were used most *frequently* and that could be considered most *interpretable.*

As described in a previous section, the Concept Mapping and Frame Mapping Methods are based on mathematical analysis of term co-occurrence. As will be demonstrated, the Frame Mapping Method will enable the researcher to begin with a large list of high-frequency terms that represent the overall discussion of an issue then to identify from among them those terms best representing the issue definition or frame by particular participants in the discussion. A large number of terms may be included in the analysis. In fact, the frame mapping procedures in VBPro and VBMap will accommodate up to 125 terms. This appears to be an ample number for identifying key terms that substantively represent a complex issue discussion. The selection of substantive terms will be addressed in the following section.

Selecting Substantive Terms. The term selection procedures are not automatic but are accomplished through a combination of judgment and subsequent validation assessment by the researcher, as will be shown. Terms are selected ideally on the basis of criteria including, but not limited to, frequency of occurrence; meaningfulness or substantive interpretability, including absence of ambiguity, also are recommended criteria for selection. A term also may be selected simply on the basis of particular interest; in fact, this selection criterion will be discussed later with regard to the use of added code source identifier terms in the text in special applications of Concept Mapping. Grammatical function words such as *the, of, and,* and *to,* though occurring frequently, would not be selected for analysis because they are not substantively meaningful. Instead, the procedures aim to distill the essence of meanings within the discussion in multiple sources by specifying the sets of terms that exhibit the most discrimination.

Table 6 lists a number of exemplar high-frequency terms from the news releases that were judged by these criteria to be substantively meaningful in the wetlands controversies and therefore selected for this analysis. The terms are ordered by absolute frequency of occurrence in the 102 releases, shown in column 2 of the table.

As the VBPro output revealed, some of the most frequently-used substantive terms in the organizational news releases included *wetlands,* occurring 368 times; *farm,* 297; *river,* 217; *water,* 209; *farmers,* 164; *federal,* 162; *rivers,* 161; *state,* 135; and *environmental,* occurring 132 times.

Table 6. Selected High-Frequency Terms from News Releases about Wetlands from Conservation and Property-Owner Groups

Term[a]	Frequency in Combined Releases	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Wetlands	368	.488	1.135	- .647
Farm	297	.006	1.550	-1.544
River	217	.703	.000	.703
Water	209	.494	.294	.200
Farmers	164	.016	.835	- .819
Federal	162	.302	.357	- .055
Rivers	161	.514	.000	.514
State	135	.247	.305	- .058
Environmental	132	.334	.147	.187
President	130	.209	.341	- .132
Property	120	.042	.562	- .520
Flood	116	.366	.011	.355
Management	114	.298	.110	.188
Species	107	.298	.074	.224
Land	104	.173	.263	- .090
Act	101	.189	.221	- .032
Conservation	101	.286	.063	.223
Public	99	.212	.179	.033
Natural	95	.292	.021	.271
Protect	95	.237	.105	.132
Wildlife	93	.286	.021	.265
Policy	92	.135	.263	- .128
Protection	92	.186	.179	.007
Private	85	.083	.310	- .227
Endangered	84	.231	.058	.173
Rights	82	.016	.404	- .388
Government	82	.103	.263	- .160
Program	80	.154	.163	- .009
Wetland	80	.109	.242	- .133
Bill	78	.119	.215	- .096
Control	77	.212	.058	.154
Support	71	.087	.231	- .144
Legislation	69	.051	.278	- .227
Development	68	.199	.032	.167
Floodplain	68	.218	.000	.218
Local	68	.109	.179	- .070
States	66	.180	.053	.127
Issues	64	.067	.226	- .159
Regulations	65	.032	.289	- .257
Agriculture	62	.010	.305	- .295

Table 6. (continued)

Term[a]	Frequency in Combined Releases	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Watershed	59	.189	.000	.189
Sound	58	.177	.016	.161
Acres	57	.157	.042	.115
Everglades	57	.180	.000	.180
Restoration	57	.087	.011	.076
Clean	56	.087	.152	-.065
Corps	56	.167	.021	.146
Programs	54	.093	.131	-.038
Projects	54	.167	.011	.156
Congress	53	.077	.152	-.075
Resources	51	.116	.079	.037
Pollution	51	.116	.079	.037
Habitat	50	.141	.032	.109
Agencies	49	.039	.194	-.155
Environment	49	.135	.037	.098
Health	49	.061	.158	-.097
Policies	48	.083	.116	-.033
Reform	47	.055	.158	-.103
Dams	45	.144	.000	.144
Society	45	.144	.005	.139
Engineers	45	.132	.021	.111
Area	42	.112	.037	.075
Bay	42	.128	.011	.117
Project	41	.132	.000	.132
Fish	40	.116	.021	.095
Regulatory	40	.010	.194	-.184
Economic	39	.051	.121	-.070
Administration	38	.090	.047	.043
Bird	38	.119	.000	.119
Landowners	38	.013	.179	-.166
Threatened	38	.119	.005	.114
Birds	34	.109	.000	.109
Quality	34	.067	.068	-.001
Agricultural	33	.029	.126	-.097
Legislative	33	.013	.152	-.139
Lands	32	.080	.037	.043
Loss	32	.067	.063	.004
Compensation	31	.000	.163	-.163
Preserve	30	.074	.037	.037
Plants	30	.083	.021	.062
Court	28	.029	.100	-.071

Table 6. (continued)

Term[a]	Frequency in Combined Releases	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Levees	28	.083	.011	.072
Ecosystem	28	.090	.000	.090
Supports	27	.019	.110	- .091
Migratory	26	.083	.000	.083
Future	26	.067	.032	.035
Laws	26	.042	.074	- .032
Issue	25	.026	.089	- .063
Balance	24	.019	.095	- .076
Damage	24	.061	.026	.035
Ecosystems	24	.077	.000	.077
Homes	24	.074	.005	.069
Preservation	24	.051	.042	.009
Statewide	24	.000	.126	- .126
Business	23	.032	.068	- .036
Definition	23	.003	.116	- .113
Regulation	23	.016	.095	- .079
Protecting	22	.045	.042	.003
Approach	21	.051	.026	.025
Rare	21	.067	.000	.067
Impact	20	.035	.047	- .012
Law	20	.051	.074	- .023
Owners	20	.003	.100	- .097
Construction	19	.048	.021	.027
Forests	19	.055	.011	.044
Global	19	.058	.005	.053
Protected	19	.042	.032	.010
Research	19	.045	.026	.019
Runoff	19	.045	.032	.013
Waters	19	.048	.021	.027
Benefits	18	.032	.042	- .010
Decision	18	.032	.042	- .010
Economy	18	.016	.068	- .052
Preserving	18	.039	.032	.007
Ranchers	18	.000	.095	- .095
Earth	17	.055	.000	.055
Field	17	.039	.026	.013
Plant	17	.042	.021	.021
Practices	17	.032	.037	- .005
Study	17	.035	.032	.003
Congressional	16	.013	.063	- .050
Lawmakers	16	.000	.089	- .089

Table 6. (continued)

Term[a]	Frequency in Combined Releases	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Flooding	16	.045	.011	.034
Restore	16	.045	.011	.034

Note. News releases were obtained from PR Newswire.

[a] Ranked by frequency of occurrence in combined news releases from conservation advocacy groups and property-owner advocacy groups.

[b] Listed in decimals of one percent.

It is not surprising that the term *property* occurs relatively frequently—120 times—and the term *conservation* also occurs relatively frequently—101 times in the combined news releases about wetlands. These terms and a number of additional frequently-occurring, meaningful, and substantively interpretable terms listed in the table were selected for the frame mapping analysis.

In the context of discussing selection of terms for information retrieval, Gerrie (1983) emphasizes the need to select terms that are content-bearing, rather than "fluff" terms. In discussing indexing in information science, H. P. Luhn argued for ignoring "articles, conjunctions, prepositions, too-generalized nouns such as 'Progress' or 'Report,' and the like" (discussed in Stevens, 1968, p. 27). Similarly, Salton and McGill (1983) emphasize the "discrimination value" (p. 69) of terms.

In selecting appropriate terms for this type of analysis, consideration should be given to whether a term might hold distinctive content or offer discrimination value among competing themes and frames. Thus, terms that might be common to any stakeholder discussion hold less relative utility in frame discrimination. For example, in this analysis terms that occurred relatively frequently in the news releases, but were considered too-generalized and lacking discriminative content included terms such as *national,* occurring 293 times; *more,* 140; *new,* 135; *other,* 104; *report,* 73; *organization,* 66; *conference,* 66; *major,* 52; *plan,* 36; and *efforts,* 34.

Table 6 also provides comparisons of the *relative frequency* of the selected terms *in each group* of stakeholder news releases (conservationists compared to property owners). These relative frequencies are expressed in decimals of one

percent. For instance, relative frequency for the term *property* was .042 in conservationists' news releases, dramatically lower than the frequency of .562 in property-owners' news releases, while the relative frequency of the term *conservation* was .286 in conservationists' news releases, much higher than the frequency of .063 in property-owners' news releases.

Other terms occurred relatively prominently in one group of news releases, but not at all in the other group. It is noted, for example, that the terms *river, rivers, floodplain, watershed, Everglades, dams, projects, bird, birds, ecosystem, migratory,* and *ecosystems* occurred in the conservationists' news releases but not at all in the property-owner news releases. On the other hand, the terms *statewide, ranchers, lawmakers, farm,* and *farmers* occurred prominently in the property-owner news releases but not at all, or only barely, in the conservationists' news releases.

Assessing Term Ambiguity. Many of the substantive terms exhibited dramatic variation in prominence in the news releases, therefore, while other terms exhibit minimal difference between the two groups. For instance the term *protection* is a high-frequency term in the combined releases—occurring a total of 92 times, as noted in Table 6. Yet, the term is used in similar proportions by both types of stakeholder groups. The *relative frequencies* of the term, in other words, are strikingly similar, differing by only .007 of one percent. This observation suggests that the term *protection* probably is used ambiguously or for multiple meanings by the various stakeholders, rendering the term relatively weak in distinguishing separate stakeholder frames. (Fortunately, the term specification procedures, which will be demonstrated

directly, will solve this problem by indicating the terms that best represent each stakeholder frame.) Comparisons of various uses of terms, which will aid in assessing the ambiguity of applications of terms, are accomplished conveniently using the VBPro searching and tagging procedures. The procedures for conducting such comparisons are described below.

Creating a Tagging Search File. A *tagging search file* for the term *protection* was created in WordPerfect. To create a search file for *tagging* a term of interest using the VBPro *search procedure,* a file is created containing (1) double sets of facing arrows (" > > < < ") on the first line, followed by a hard return, (2) the term or terms of interest on a separate line or separate lines, then (3) ending with a final hard return:

> > < <
> protection
> [Hard Return]

Such a file, containing the term *protection,* was created and saved as a generic text file in the same directory on the computer as the VBPro program. The VBPro program was opened, and the formatted file of the news releases was searched in sentence context (with capitals ignored) to create an output file in which the specified term is tagged, or marked with arrows on each side. Examples of the term occurrences in the conservationists' and property-owners' news releases, which are extracted from the VBPro search procedure output, are provided in Tables 7 and 8. The tables indicate the diversity with which the term *protection* was used by the two groups.

Table 7. Selected Examples of Occurrences of the Term *Protection* in Conservationists' News Releases on Wetlands

Stakeholder Group	Case #	Key Term in Context
Conservationists	#0009C	"Passage of HR961 could lead to the . . . roll back of >protection< of our nation's rivers and lakes and allowing industry to use unproven methods for pollution control."
Conservationists	#0021C	"The Clean Water Act and the National Wild and Scenic Rivers Act have provided relief and >protection< for a number of rivers."
Conservationists	#0181C	"Through science-based analysis and research, we have identified these project sites as in need of immediate >protection.<"
Conservationists	#0252C	"Once known as the world's premier builder of dams, the U. S. Bureau of Reclamation, part of the U.S. Interior Department, is dramatically changing its mission under President Clinton to focus on environmental >protection< and water management."
Conservationists	#0447C	"Sierra Club today applauded President-elect Bill Clinton's selection of Carol Browner to head the Environmental >Protection< Agency."
Conservationists	#0466C	"The >protection< of critical habitat in the Delaware Basin represents the >protection< of the quality of life in for New Jersey residents."
Conservationists	#0636C	"National Audubon Society has been in the forefront of the nationwide protest arising from the federal government's proposed revised manual, which would eliminate >protection< for much of the Everglades wetlands ecosystem as well as many more of the nations' wetland ecosystems.
Conservationists	#0871C	"The Nature Conservancy is an international nonprofit organization dedicated to the >protection< of rare species and natural areas."

Note. The term *protection* was a relatively frequently-occurring term in the organizational news releases, and its relative frequency in releases from both conservationists and property owners was similar, as shown in Table 6. Inspection of usages of the term by the conservationists and the property owners reveals a variety of meanings and confirms the relative ambiguity for the term in the news releases.

Table 8. Selected Examples of Occurrences of the Term *Protection* in Property-Owners' News Releases on Wetlands

Stakeholder Group	Case #	Key Term in Context
Property Owners	#0041P	"Farm Bureau is supporting S.B. 805, the Agricultural Private Property and Private Property >Protection< Act, to prevent unnecessary land use restrictions and further erosion of property rights."
Property Owners	#0046P	" >Protection< of property rights and the compensation provisions in the bill will encourage farmers and ranchers to participate in a voluntary, cooperative manner to address nonpoint source challenges."
		"'The bill includes classification of wetlands based on their value, a wetland definition which includes all three wetland parameters, and provides private property rights >protection< for landowners,' Thompson said."
Property Owners	#0228P	"'H.R. 1330 strikes a balance between >protection< of wetlands, >protection< of private property rights, and >protection< for our water quality,' Eckel said."
Property Owners	#0432P	"Every piece of legislation, like wetlands and endangered species, must include strong >protection< for private property rights."
Property Owners	#0482P	"The objective is to educate political leaders and the public about the need for sensible environmental decisions and the >protection< of private property rights."
Property Owners	#0841P	"County Farm Bureau presidents will also hear from officials representing the U. S. Environmental >Protection< Agency, Australian Embassy, U.S. Department of Agriculture, U. S. Department of State and American Farm Bureau Federation."
Property Owners	#0989P	"The >protection< of wetlands is another issue concerning agriculture."

Note. The term *protection* was a relatively frequently-occurring term in the organizational news releases, and its relative frequency in releases from both conservationists and property owners was similar, as shown in Table 6. Inspection of usages of the term by the conservationists and the property owners reveals a variety of meanings and confirms the relative ambiguity for the term in the news releases.

For example, the term *protection* was used by the stakeholder organizations in reference to *numerous kinds of protection*—of rivers, environment, habitat, species, property rights, landowners, and wetlands, as well as reference to the proper name of the Environmental Protection Agency.

As this example shows, use of a term such as *protection* for multiple meanings affect its interpretability and usefulness in frame analysis of this type. To the extent that such potential ambiguity can be anticipated and avoided in the initial selection of key terms, the identification of most representative frame terms will be aided. (The ambiguity indicated here for the term *protection* suggests that when all the selected terms are tested later for their representation of one stakeholder group or another, this term will not emerge as reflecting either frame. As the discussion will elaborate in a later section, this expectation is confirmed.)

Creating a Basic Search File. Discussion of this analysis returns to the list of high-frequency terms selected prior to the consideration of assessing term ambiguity. Based on the selection criteria described, some 123 terms (listed previously in Table 6) that occurred frequently and that were considered substantively meaningful in the wetlands issue were selected for the frame term analysis procedures. (Recall that the Concept Mapping procedures can accommodate up to 125 terms.) In the procedures that follow, the 123 selected terms are submitted to analysis through the method of extraction of principal components to produce multidimensional scaling configurations or concept maps and cluster analysis tree-type diagrams (dendograms) that specify which terms occur together in the news releases. (Submitting 123 terms allows for

later addition of two code terms in subsequent analyses.) After this baseline term co-occurrence data structure is established, two unique constructed source identifier terms (signifying either the conservation stakeholder or the property-owner stakeholder) will be added and the procedures will be repeated. (The analysis proceeds through these steps to assure that measurement validity is not compromised by the addition of the code terms.)

A *basic search file* listing the 123 selected substantive terms was created, in word processing procedures, according to the guidelines in the *User's Guide for VBPro: A Program for Analyzing Verbatim Text* (Miller, 1995b). As noted earlier, search files are created in the word processing program of choice. The basic search file for the VBPro *search procedure* and *coding procedure* consists of (1) a single set of facing arrows (" > < ") on the first line, (2) each of the 123 selected key terms for which the search will be done, listed on separate lines, (3) with individual terms of interest separated by two facing arrows (" > < ") on separate lines, and (4) ending with a hard return:

> <
$Term_1$ [wetlands]
> <
$Term_2$ [farm]
> <
$Term_3$ [river]
.
.
.
$Term_{123}$ [restore]
[Hard Return]

The file was named, assigned the extension *.FRM,* and saved as a generic text file in

the VBPro directory on the computer. The basic search file may be used to create coded numeric data files or to search formatted text files for terms of interest without tagging them, while tagging search files are used to point out key words in context.

Creating a Numeric Data File. With the basic search file created, the VBPro program was opened and the *coding procedure* was selected. The menu prompter requested the file names for the formatted text file to be searched and the search file for which the text file will be coded. The names of the formatted text file of the combined news releases and the 123-term basic search file were entered, and the code procedure was run. When the procedure was completed the created coded file automatically was saved in the VBPro directory and the menu prompter returned to *"Press Choice Key."*

The created coded file is a numeric data file consisting of one row for each of the cases (102 news releases or cases in this procedure) and a column for the case identification number and value for each variable. In the coded file created in the procedures described, the first column for each row or case lists the case identification number, and the subsequent columns list the frequency of occurrence for each of the 123 terms specified in the search file used to create the code file. The file, therefore, reads as follows:

#0007P, 7, 2, 0, 6, 3, 0, 0, . . .

and so on, indicating that in the property-owner news release assigned as case #0007P the key term *wetlands* occurred 7 times; *farm,* 2; *river,* 0; *water,* 6; *farmers,* 3; *federal,* 0; *rivers,* 0; and so on through each of the 123 terms for all of the 102 cases.

Extracting Term Vectors with VBMap. Once this coded numeric data file was created, the VBPro program was closed and the VBMap program was opened on the IBM Personal Computer by typing in *VBMap*. The opening menu of the VBMap program asks for five entries: (1) the file names of the coded numeric data file to map; (2) the file name for the search file used to create the coded file; (3) specification of the number of dimensions or coordinates selected; and (4) whether the program should save the report file; and (5) whether the program should save the term coordinates file. In this analysis three dimensions were specified, and the *Yes* selections were made for saving both output files—report and term coordinates. The rationale for selection of three dimensions was elaborated in the previous section on multidimensional scaling—essentially, configurations in three dimensions provide a richer view of the data structure than with only one or two dimensions, but more than three dimensions are difficult to visualize.

The procedures for these steps also are described in the *User's Guide for VBMap: A Program for Multidimensional Scaling of Concepts* (Miller, 1995a). The VBMap program immediately reported it had saved two files as output, the report file assigned with the *.UNS* extension and the term coordinates file assigned with the *.MAP* extension. Both of these files are useful for further analyses.

The term coordinates file, the *.MAP* output of this procedure, is presented in Table 9. The term coordinates file output of the VBMap program includes a list of eigenvectors for the specified terms, representing in a multidimensional space the relationship of the terms by co-occurrence.

Table 9. Term Co-Occurrence Data Structure, Identified in VBMap *.MAP File* Output, for 123 Selected Terms from Organizational News Releases

Term	Coordinate 1	Coordinate 2	Coordinate 3
WETLANDS	0.32	0.12	-0.18
FARM	0.60	0.24	0.00
RIVER	-0.41	-0.08	-0.18
WATER	-0.18	0.02	-0.06
FARMERS	0.61	0.24	-0.07
FEDERAL	-0.05	0.33	0.29
RIVERS	-0.48	0.19	-0.12
STATE	0.18	0.11	-0.01
ENVIRONMENTAL	-0.06	-0.22	0.22
PRESIDENT	0.05	0.26	0.06
PROPERTY	0.53	0.24	-0.07
FLOOD	-0.47	0.65	0.08
MANAGEMENT	-0.43	0.57	0.02
SPECIES	-0.19	-0.43	-0.08
LAND	0.10	0.05	0.05
ACT	0.02	0.11	0.54
CONSERVATION	-0.22	-0.16	0.06
PUBLIC	0.05	0.05	0.24
NATURAL	-0.27	-0.41	0.02
PROTECT	-0.19	-0.20	-0.12
WILDLIFE	-0.21	-0.35	0.16
POLICY	0.12	0.13	0.15
PROTECTION	0.15	-0.24	-0.05
PRIVATE	0.46	-0.00	-0.09
ENDANGERED	-0.30	-0.33	-0.19
RIGHTS	0.59	0.21	-0.02
GOVERNMENT	0.33	0.25	0.22
PROGRAM	0.11	-0.05	0.28
WETLAND	0.22	0.01	-0.25
BILL	0.11	-0.14	0.65
CONTROL	-0.44	0.54	0.17
SUPPORT	0.25	0.12	0.05
LEGISLATION	0.38	0.24	-0.04
LOCAL	0.12	0.33	0.28
DEVELOPMENT	-0.32	0.14	0.33
FLOODPLAIN	-0.52	0.66	0.05
STATES	-0.07	-0.31	0.17
REGULATIONS	0.23	0.36	-0.05
ISSUES	0.39	0.05	0.13
AGRICULTURE	0.51	0.17	-0.04
WATERSHED	-0.26	-0.08	0.05
SOUND	-0.03	-0.09	0.23
ACRES	-0.16	-0.17	-0.22

Table 9. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
RESTORATION	-0.33	0.10	-0.13
EVERGLADES	-0.16	-0.13	-0.17
CLEAN	0.21	0.01	0.48
CORPS	-0.49	0.51	-0.06
PROGRAMS	-0.02	0.40	0.28
PROJECTS	-0.17	-0.19	0.58
CONGRESS	0.06	0.24	0.13
POLLUTION	0.06	-0.19	0.53
RESOURCES	-0.19	0.27	-0.05
HABITAT	-0.20	-0.31	-0.11
AGENCIES	0.33	0.26	-0.07
ENVIRONMENT	-0.28	0.18	0.20
HEALTH	0.26	-0.09	0.15
POLICIES	-0.10	0.55	0.17
REFORM	0.12	0.55	0.11
DAMS	-0.26	0.13	-0.05
ENGINEERS	-0.51	0.55	-0.08
SOCIETY	-0.12	-0.20	0.05
AREA	-0.11	-0.24	-0.00
BAY	-0.03	-0.14	0.01
PROJECT	-0.13	-0.09	-0.08
REGULATORY	0.42	0.06	0.11
FISH	-0.17	-0.13	-0.13
ECONOMIC	0.31	-0.02	0.10
ADMINISTRATION	-0.12	0.02	0.09
THREATENED	-0.33	-0.34	-0.21
BIRD	-0.07	-0.16	-0.08
LANDOWNERS	0.48	0.07	-0.22
QUALITY	0.07	-0.26	0.26
BIRDS	-0.12	-0.23	-0.11
AGRICULTURAL	0.30	0.08	-0.18
LEGISLATIVE	0.55	0.14	0.08
LOSS	-0.07	0.14	-0.17
LANDS	-0.08	-0.35	0.27
COMPENSATION	0.50	0.21	-0.10
PLANTS	-0.08	-0.39	0.45
PRESERVE	-0.04	-0.13	-0.14
LEVEES	-0.52	0.60	0.01
COURT	0.24	0.09	-0.10
ECOSYSTEM	-0.39	-0.16	-0.15
SUPPORTS	0.48	0.10	-0.00
MIGRATORY	-0.10	-0.23	-0.11
FUTURE	-0.18	0.25	0.03
LAWS	0.17	-0.02	-0.13

Table 9. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
ISSUE	0.27	0.02	-0.01
BALANCE	0.34	0.07	-0.13
PRESERVATION	0.08	-0.10	-0.26
DAMAGE	-0.10	-0.18	0.42
STATEWIDE	0.51	0.18	-0.16
ECOSYSTEMS	-0.38	-0.23	0.01
HOMES	-0.48	0.70	0.05
BUSINESS	0.26	-0.00	-0.15
REGULATION	0.37	0.03	0.37
DEFINITION	0.42	0.12	-0.25
PROTECTING	0.08	-0.25	-0.12
APPROACH	-0.17	0.25	-0.12
RARE	-0.16	-0.40	-0.15
OWNERS	0.38	0.16	0.00
IMPACT	0.21	-0.03	0.35
LAW	0.28	-0.01	-0.08
PROTECTED	-0.00	-0.30	0.05
CONSTRUCTION	-0.09	-0.14	0.53
RESEARCH	-0.10	-0.25	-0.00
RUNOFF	-0.29	0.29	-0.04
FORESTS	-0.08	-0.31	0.01
WATERS	-0.02	-0.07	0.14
GLOBAL	-0.05	-0.24	0.47
BENEFITS	-0.07	0.44	-0.08
PRESERVING	0.11	-0.12	-0.21
RANCHERS	0.19	0.06	-0.02
DECISION	0.11	0.03	0.10
ECONOMY	0.23	-0.00	0.35
EARTH	-0.20	-0.24	0.01
PLANT	-0.02	-0.28	0.41
FIELD	0.02	-0.18	0.25
STUDY	-0.18	0.24	0.18
LAWMAKERS	0.45	0.17	-0.13
CONGRESSIONAL	0.27	0.12	0.03
FLOODING	-0.36	0.56	0.01
RESTORE	-0.10	-0.14	-0.14

Note. Three dimensions were specified in the VBMap procedures.
Eigenvalues: 10.04 8.58 5.19
Percentage Variance Per Factor: 42 36 22
Cumulative Variance: 42 78 100

In other words, the numerical values for the three specified coordinates correspond to the co-occurrence of the terms in a three-dimensional space (also referred to as a three-space). The output may be simply inspected or used to generate multidimensional configurations or maps that visually show the relationship of the terms relative to one another. Examples of this process will be given later.

The term coordinate values may range from -1.0 to 1.0. It is noted that in the *.MAP* file presented in Table 9 the coordinate values in Coordinate 1 range from -.52 for *floodplain* and *levees* to .61 for *farmers,* indicating relative dissimilarity, or infrequency of co-occurrence, of these terms in the news releases from the conservation and property-owner advocacy group organizations. On the same dimension or coordinate, the term *engineers* has a coordinate value of -.51; *rivers,* -.48; and *flood,* -.47, near to the extreme coordinate value for *floodplain.* In contrast, *farm* has a coordinate value of .60; *rights,* .59; and *agriculture,* .51, similar to the other extreme coordinate value for *farmers.* The use of these coordinate values in producing multidimensional configurations for the terms will be illustrated, following discussion of procedures to assure measurement validity and collapsing of the terms into fewer, but meaningful, groupings to be mapped.

Interpretation of these eigenvector values also is facilitated by the use of statistical analysis programs. The data files generated in the mapping procedures can be input directly into statistical analysis programs such as SPSS or SAS for further analysis.

In this analysis SPSS for Windows, Release 6.1, was initiated on an IBM Personal Computer, and SPSS was instructed to read the ASCII report file with the *.UNS* extension that was generated in steps described above. (The *.UNS* files include commas to separate data information, and the files may be submitted directly to statistical packages.) The report output *.UNS* file of the VBMap procedures described above is shown in Table 10. The report file contains 123 rows, or one row for each term in the analysis. Each row contains four columns of data including the term and the values assigned to each of the three dimensions or coordinates.

To accommodate analysis of these data in the four columns in SPSS four variables were specified and defined as *term* (a string variable, with width of 18), and *C1, C2,* and *C3* (numeric variables) for Coordinates 1, 2, and 3. The *classify* statistics procedure was selected, and *hierarchical cluster analysis* was specified, for labelling by the variable *term.* Also specified were the *dendogram plot* and the *cosine method.* (The cosine pattern similarity measure is described and discussed in Norušis, 1994; Salton & McGill, 1983; Salton, 1963; and Miller & Riechert, 1994.)

Frame Mapping Stage Four—Generation of Maps and Dendograms

The procedures described above using VBPro, VBMap, and SPSS generate a dendogram tree diagram, which provides one type of visual representation of how these terms are related by their co-occurrence in the news releases from the conservation and property-owner groups. Dendograms, it is recalled, were described in Chapter III.

Table 10. VBMap Output in *.UNS File* for 123 Selected Terms from Organizational News Releases

Term	Coordinate 1	Coordinate 2	Coordinate 3
WETLANDS,	0.315,	0.124,	-0.177
FARM,	0.602,	0.244,	0.004
RIVER,	-0.414,	-0.082,	-0.178
WATER,	-0.175,	0.016,	-0.058
FARMERS,	0.609,	0.241,	-0.071
FEDERAL,	-0.049,	0.334,	0.289
RIVERS,	-0.479,	0.189,	-0.116
STATE,	0.185,	0.111,	-0.008
ENVIRONMENTAL,	-0.058,	-0.219,	0.224
PRESIDENT,	0.047,	0.257,	0.059
PROPERTY,	0.533,	0.244,	-0.070
FLOOD,	-0.474,	0.655,	0.078
MANAGEMENT,	-0.433,	0.572,	0.022
SPECIES,	-0.193,	-0.425,	-0.076
LAND,	0.097,	0.045,	0.051
ACT,	0.024,	0.113,	0.545
CONSERVATION,	-0.217,	-0.162,	0.058
PUBLIC,	0.045,	0.049,	0.240
NATURAL,	-0.267,	-0.408,	0.018
PROTECT,	-0.186,	-0.199,	-0.120
WILDLIFE,	-0.207,	-0.350,	0.160
POLICY,	0.125,	0.133,	0.154
PROTECTION,	0.152,	-0.239,	-0.046
PRIVATE,	0.463,	-0.002,	-0.086
ENDANGERED,	-0.302,	-0.326,	-0.192
RIGHTS,	0.587,	0.206,	-0.016
GOVERNMENT,	0.326,	0.248,	0.216
PROGRAM,	0.107,	-0.049,	0.276
WETLAND,	0.221,	0.013,	-0.250
BILL,	0.109,	-0.138,	0.653
CONTROL,	-0.437,	0.537,	0.174
SUPPORT,	0.251,	0.120,	0.050
LEGISLATION,	0.378,	0.236,	-0.042
LOCAL,	0.123,	0.326,	0.277
DEVELOPMENT,	-0.321,	0.138,	0.325
FLOODPLAIN,	-0.519,	0.660,	0.048
STATES,	-0.069,	-0.315,	0.175
REGULATIONS,	0.231,	0.359,	-0.053
ISSUES,	0.393,	0.045,	0.133
AGRICULTURE,	0.511,	0.166,	-0.035
WATERSHED,	-0.257,	-0.079,	0.052
SOUND,	-0.025,	-0.086,	0.233
ACRES,	-0.165,	-0.171,	-0.223

Table 10. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
RESTORATION,	-0.328,	0.102,	-0.127
EVERGLADES,	-0.160,	-0.134,	-0.175
CLEAN,	0.209,	0.011,	0.482
CORPS,	-0.487,	0.513,	-0.061
PROGRAMS,	-0.021,	0.403,	0.284
PROJECTS,	-0.174,	-0.189,	0.581
CONGRESS,	0.063,	0.244,	0.133
POLLUTION,	0.061,	-0.185,	0.535
RESOURCES,	-0.192,	0.266,	-0.048
HABITAT,	-0.204,	-0.311,	-0.113
AGENCIES,	0.335,	0.259,	-0.072
ENVIRONMENT,	-0.279,	0.177,	0.201
HEALTH,	0.262,	-0.091,	0.149
POLICIES,	-0.104,	0.549,	0.172
REFORM,	0.118,	0.551,	0.111
DAMS,	-0.262,	0.134,	-0.053
ENGINEERS,	-0.510,	0.545,	-0.078
SOCIETY,	-0.119,	-0.201,	0.048
AREA,	-0.105,	-0.235,	-0.001
BAY,	-0.031,	-0.144,	0.008
PROJECT,	-0.134,	-0.090,	-0.075
REGULATORY,	0.422,	0.064,	0.107
FISH,	-0.173,	-0.133,	-0.129
ECONOMIC,	0.307,	-0.017,	0.104
ADMINISTRATION,	-0.118,	0.024,	0.091
THREATENED,	-0.331,	-0.337,	-0.206
BIRD,	-0.067,	-0.155,	-0.077
LANDOWNERS,	0.482,	0.073,	-0.218
QUALITY,	0.066,	-0.256,	0.255
BIRDS,	-0.123,	-0.230,	-0.112
AGRICULTURAL,	0.300,	0.077,	-0.184
LEGISLATIVE,	0.547,	0.145,	0.076
LOSS,	-0.068,	0.141,	-0.173
LANDS,	-0.079,	-0.348,	0.269
COMPENSATION,	0.505,	0.215,	-0.100
PLANTS,	-0.075,	-0.388,	0.447
PRESERVE,	-0.038,	-0.130,	-0.137
LEVEES,	-0.522,	0.603,	0.008
COURT,	0.245,	0.088,	-0.103
ECOSYSTEM,	-0.393,	-0.156,	-0.149
SUPPORTS,	0.476,	0.095,	-0.001
MIGRATORY,	-0.103,	-0.229,	-0.108
FUTURE,	-0.183,	0.246,	0.028
LAWS,	0.170,	-0.017,	-0.131

Table 10. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
ISSUE,	0.266,	0.024,	-0.012
BALANCE,	0.342,	0.070,	-0.129
PRESERVATION,	0.080,	-0.096,	-0.257
DAMAGE,	-0.103,	-0.177,	0.421
STATEWIDE,	0.515,	0.176,	-0.163
ECOSYSTEMS,	-0.376,	-0.234,	0.006
HOMES,	-0.476,	0.696,	0.053
BUSINESS,	0.262,	-0.000,	-0.146
REGULATION,	0.368,	0.025,	0.372
DEFINITION,	0.425,	0.116,	-0.245
PROTECTING,	0.078,	-0.249,	-0.123
APPROACH,	-0.169,	0.246,	-0.119
RARE,	-0.157,	-0.404,	-0.153
OWNERS,	0.380,	0.160,	0.004
IMPACT,	0.206,	-0.027,	0.345
LAW,	0.281,	-0.008,	-0.078
PROTECTED,	-0.001,	-0.301,	0.051
CONSTRUCTION,	-0.089,	-0.137,	0.528
RESEARCH,	-0.098,	-0.251,	-0.001
RUNOFF,	-0.287,	0.295,	-0.042
FORESTS,	-0.079,	-0.313,	0.012
WATERS,	-0.022,	-0.072,	0.141
GLOBAL,	-0.045,	-0.244,	0.467
BENEFITS,	-0.074,	0.443,	-0.078
PRESERVING,	0.109,	-0.124,	-0.213
RANCHERS,	0.189,	0.062,	-0.016
DECISION,	0.110,	0.030,	0.099
ECONOMY,	0.226,	-0.002,	0.347
EARTH,	-0.199,	-0.237,	0.005
PLANT,	-0.024,	-0.284,	0.406
FIELD,	0.022,	-0.180,	0.246
STUDY,	-0.183,	0.242,	0.184
LAWMAKERS,	0.447,	0.174,	-0.131
CONGRESSIONAL,	0.269,	0.122,	0.032
FLOODING,	-0.361,	0.556,	0.011
RESTORE,	-0.103,	-0.139,	-0.142

Note. Three dimensions were specified in the VBMap procedures.

The analysis from this point proceeds with a series of iterative steps involving inspecting the cluster analysis dendogram created from the 123 terms, generating additional dendograms, and developing a series of frame maps to represent stakeholder issue definitions visually.

Dendograms, as described previously, are tree-type diagrams that display the grouping patterns obtained in hierarchical cluster analysis. The dendogram diagram shows the "steps in a hierarchical clustering solution," (Norušis, 1994, p. 91). The interpretation of the tree diagram requires basic understanding in the process of the type of clustering analysis used. In agglomerative hierarchical cluster analysis, each case (or *term,* in this analysis) initially is considered a separate cluster. The analysis proceeds through several stages in which the most similar cases *(terms,* in this application) are combined into clusters based on similarities until finally all the cases are connected at decreasing levels of similarity.

Criteria for the level at which various clusters are combined are "based on a matrix of either distances or similarities between pairs of cases," according to Norušis (1994, p. 85). Cluster methods include *average linkage between groups method,* also referred to as *UPGMA* (unweighted pair-group method using arithmetic averages), within-groups linkage, Ward's method, and others. In this analysis, the default between-groups linkage method was used.

Various measure selections may be used for computing the similarities or dissimilarities matrix on which the cluster analysis is based. As noted above, an appropriate one for this type of analysis is the *cosine* of vectors of variables, a pattern

similarity measure.

The dendogram plotted by SPSS rescales actual distances to numbers between 0 and 25 in order to preserve the ratio of the distances between the steps in which various clusters are combined. In agglomerative hierarchical cluster analysis, cases that are the most similar would be combined or connected by a line only one point from the origin, while cluster combinations in increasing distances from the origin would indicate decreasing similarity.

The dendogram tree diagram produced by cluster analysis in SPSS for the selected terms is shown (for readability, in *portions)* in Figure 2 and (for inspection of overall clustering patterns, in its *entirety)* in Figure 3. At first glance, the dendogram reveals some meaningful patterns of term co-occurrence. For instance, several terms are connected at the first line from the point of origin, indicating their strong tendency to occur together in the news releases. Such a cluster is shown at the top of the dendogram, where some eight terms are joined with a line only one distance from origin: the terms *protect, endangered, threatened, project, fish, acres,* and *Everglades,* and *restore.*

Below that cluster on the dendogram, another five terms are similarly connected *(bird, migratory, birds, rare,* and *habitat).* Terms connected at the initial distances from origin, early on in the dendogram, are thus revealed to be similar or "closely related" with regard to co-occurrence within the news releases. The term *protect* tends to occur with the term *endangered,* and *Everglades,* and so on, while the terms *bird* and *birds* tend to occur with *migratory* and *habitat.*

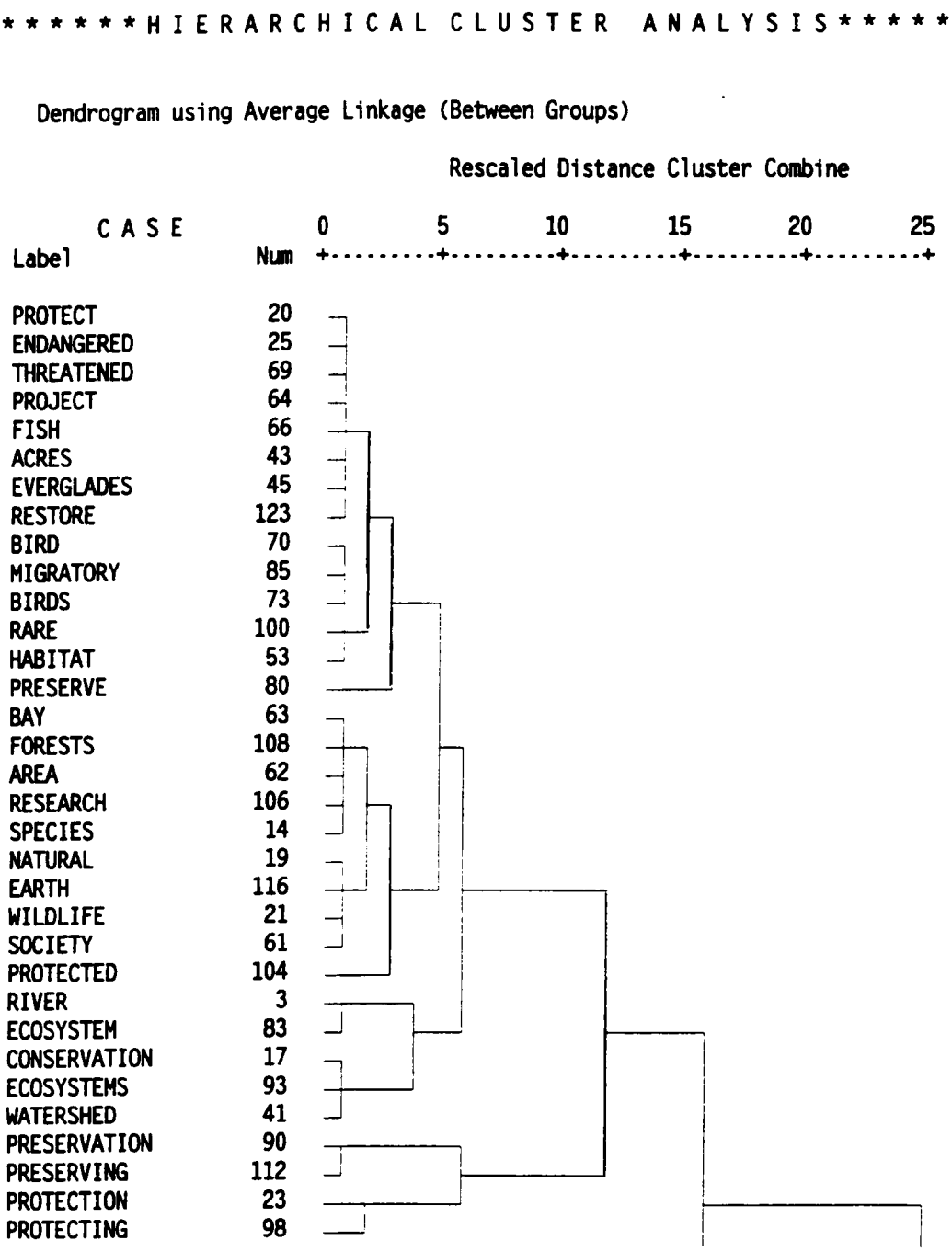


Figure 2. Clustering Dendogram for 123 Substantive Terms in News Releases from Conservation and Property-Owner Advocacy Groups

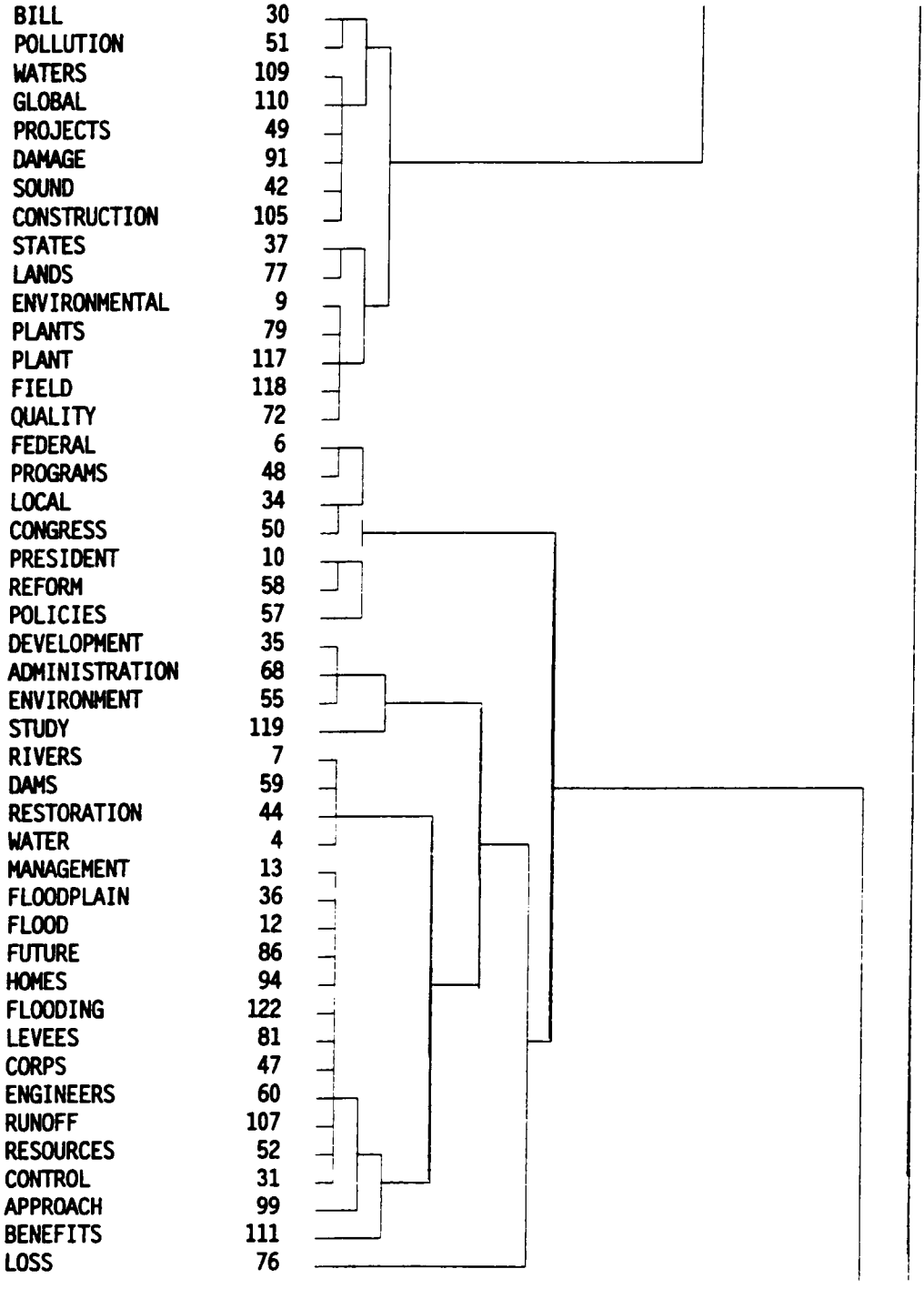


Figure 2. (continued)

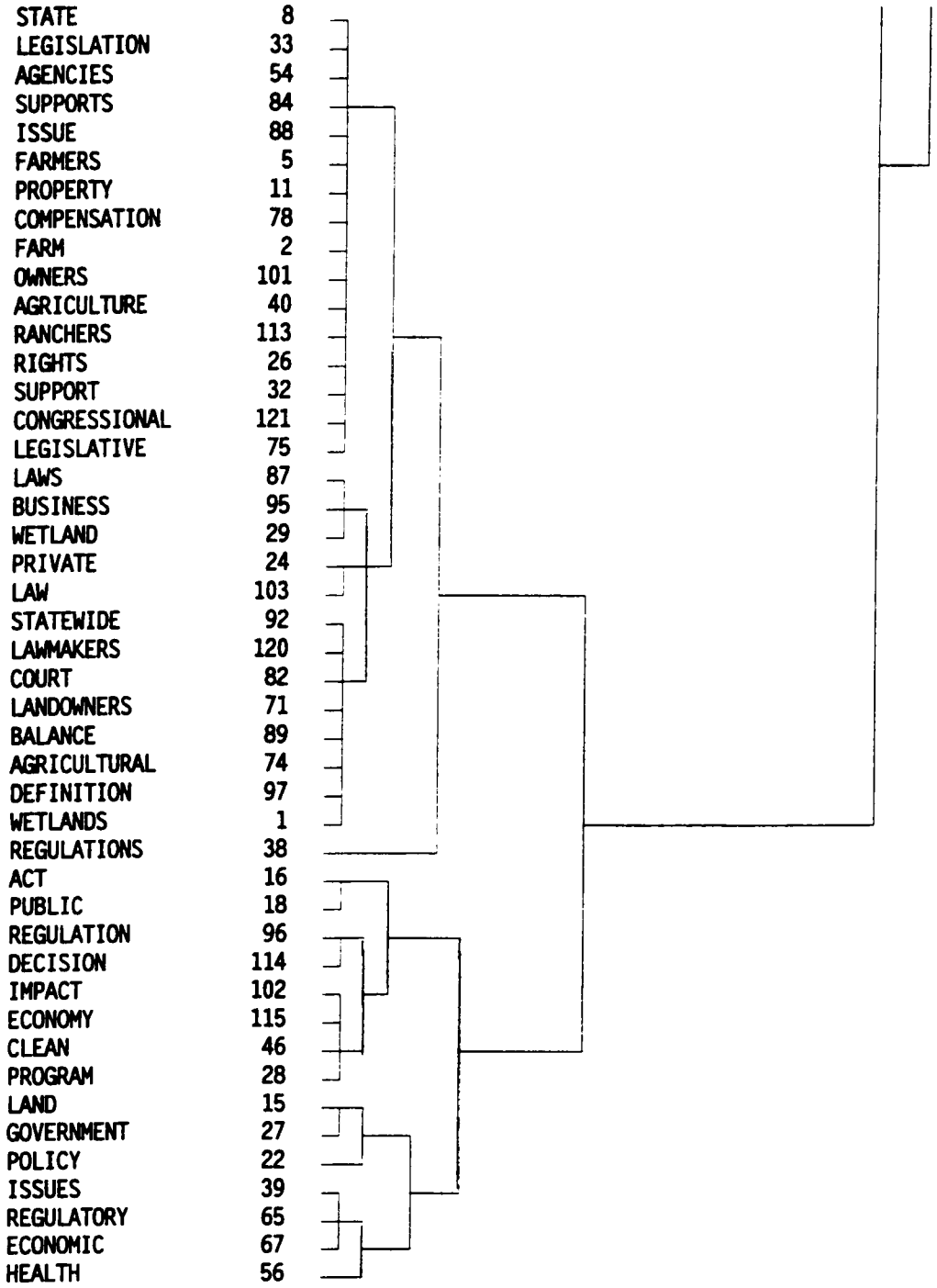


Figure 2. (continued)

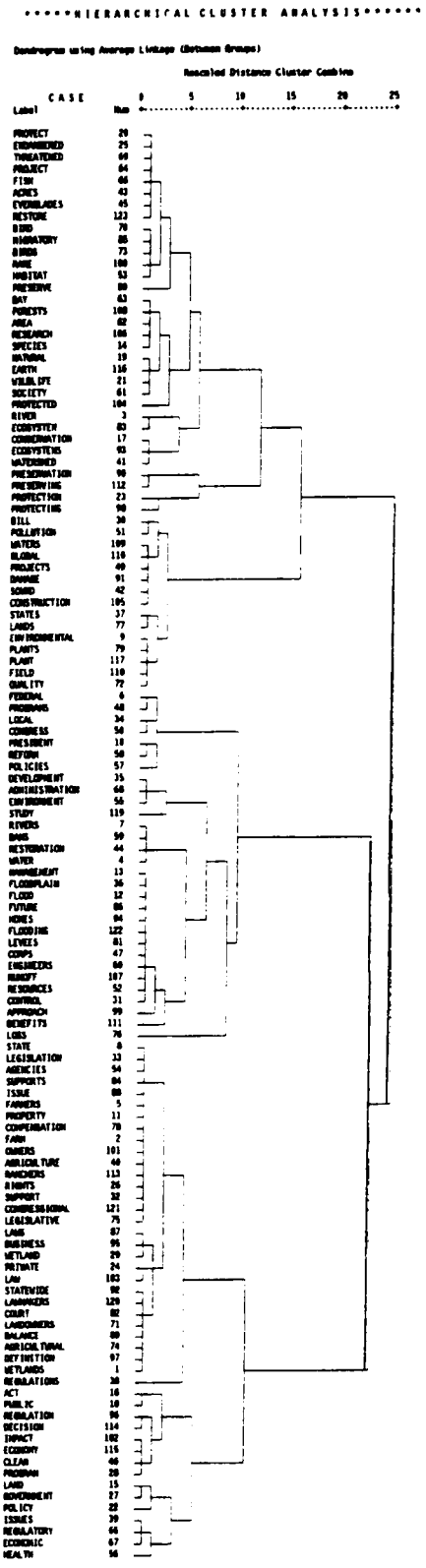


Figure 3. Full View of Clustering Dendogram for 123 Substantive Terms in Figure 2

The clustering schedule shown in the dendogram shows the *protect* cluster (eight terms) and the *bird* cluster (five terms) are joined at the *second* point from origin, indicating that the 13 terms tend to occur together in the releases.

Another term cluster of five terms is formed at the first point from origin by the terms *bay, forests, area, research,* and *species*. A four-term cluster is derived from similar connection of *natural, earth, wildlife,* and *society*. *River* and *ecosystem* are connected; *conservation, ecosystems,* and *watershed* are connected at the first possible level; *preservation* and *preserving* are connected; and *bill* and *pollution* are similarly connected. The terms *waters, global, projects, damage, sound,* and *construction* also are joined at only one distance from origin, as are *states* and *land.*

Numerous additional clusters are formed at the first point from origin. Of the 123 selected terms analyzed for co-occurrence, some 110 terms are joined at the first level with other word or words to form 26 clusters of co-occurring terms. The term clusters are listed in Table 11.

In addition to the clusters already described, a cluster is formed at the first point of origin by the terms *environmental, plants, plant, field,* and *quality*. The terms *federal* and *program* are similarly connected, as are the terms *local* and *Congress*. The terms *president* and *reform* are connected at one point from origin, as well as the terms *development, administration,* and *environment,* indicating the occurrence of these terms together. Similarly, a four-term cluster is formed by the terms *rivers, dams, restoration,* and *water.*

Table 11. Groupings of Co-Occurring Terms in Organizational News Releases on Wetlands from Hierarchical Cluster Analysis of 123 Selected Terms

	Terms Forming Tightest Clusters	Coordinate 1	Coordinate 2	Coordinate 3
(1)	Protect	-0.19	-0.20	-0.12
	Endangered	-0.30	-0.33	-0.19
	Threatened	-0.33	-0.34	-0.21
	Project	-0.13	-0.09	-0.08
	Fish	-0.17	-0.13	-0.13
	Acres	-0.16	-0.17	-0.22
	Everglades	-0.16	-0.13	-0.17
	Restore	-0.10	-0.14	-0.14
(2)	Bird	-0.07	-0.16	-0.08
	Migratory	-0.10	-0.23	-0.11
	Birds	-0.12	-0.23	-0.11
	Rare	-0.16	-0.40	-0.15
	Habitat	-0.20	-0.31	-0.11
(3)	Bay	-0.03	-0.14	0.01
	Forests	-0.08	-0.31	0.01
	Area	-0.11	-0.24	-0.00
	Research	-0.10	-0.25	-0.00
	Species	-0.19	-0.43	-0.08
(4)	Natural	-0.27	-0.41	0.02
	Earth	-0.20	-0.24	0.01
	Wildlife	-0.21	-0.35	0.16
	Society	-0.12	-0.20	0.05
(5)	River	-0.41	-0.08	-0.18
	Ecosystem	-0.39	-0.16	-0.15
(6)	Conservation	-0.22	-0.16	0.06
	Ecosystems	-0.38	-0.23	0.01
	Watershed	-0.26	-0.08	0.05
(7)	Preservation	0.08	-0.10	-0.26
	Preserving	0.11	-0.12	-0.21
(8)	Bill	0.11	-0.14	0.65
	Pollution	0.06	-0.19	0.53

Table 11. (continued)

Terms Forming Tightest Clusters		Coordinate 1	Coordinate 2	Coordinate 3
(9)	Waters	-0.02	-0.07	0.14
	Global	-0.05	-0.24	0.47
	Projects	-0.17	-0.19	0.58
	Damage	-0.10	-0.18	0.42
	Sound	-0.03	-0.09	0.23
	Construction	-0.09	-0.14	0.53
(11)	States	-0.07	-0.31	0.17
	Lands	-0.08	-0.35	0.27
(12)	Environmental	-0.06	-0.22	0.22
	Plants	-0.08	-0.39	0.45
	Plant	-0.02	-0.28	0.41
	Field	0.02	-0.18	0.25
	Quality	0.07	-0.26	0.26
(13)	Federal	-0.05	0.33	0.29
	Programs	-0.02	0.40	0.28
(14)	Local	0.12	0.33	0.28
	Congress	0.06	0.24	0.13
(15)	President	0.05	0.26	0.06
	Reform	0.12	0.55	0.11
(16)	Development	-0.32	0.14	0.33
	Administration	-0.12	0.02	0.09
	Environment	-0.28	0.18	0.20
(17)	Rivers	-0.48	0.19	-0.12
	Dams	-0.26	0.13	-0.05
	Restoration	-0.33	0.10	-0.13
	Water	-0.18	0.02	-0.06

Table 11. (continued)

	Terms Forming Tightest Clusters	Coordinate 1	Coordinate 2	Coordinate 3
(18)	Management	-0.43	0.57	0.02
	Floodplain	-0.52	0.66	0.05
	Flood	-0.47	0.65	0.08
	Future	-0.18	0.25	0.03
	Homes	-0.48	0.70	0.05
	Flooding	-0.36	0.56	0.01
	Levees	-0.52	0.60	0.01
	Corps	-0.49	0.51	-0.06
	Engineers	-0.51	0.55	-0.08
	Runoff	-0.29	0.29	-0.04
	Resources	-0.19	0.27	-0.05
	Control	-0.44	0.54	0.17
(19)	State	0.18	0.11	-0.01
	Legislation	0.38	0.24	-0.04
	Agencies	0.33	0.26	-0.07
	Supports	0.48	0.10	-0.00
	Issue	0.27	0.02	-0.01
	Farmers	0.61	0.24	-0.07
	Property	0.53	0.24	-0.07
	Compensation	0.50	0.21	-0.10
	Farm	0.60	0.24	0.00
	Owners	0.38	0.16	0.00
	Agriculture	0.51	0.17	-0.04
	Ranchers	0.19	0.06	-0.02
	Rights	0.59	0.21	-0.02
	Support	0.25	0.12	0.05
	Congressional	0.27	0.12	0.03
	Legislative	0.55	0.14	0.08
(20)	Laws	0.17	-0.02	-0.13
	Business	0.26	-0.00	-0.15
	Wetland	0.22	0.01	-0.25
(21)	Private	0.46	-0.00	-0.09
	Law	0.28	-0.01	-0.08

Table 11. (continued)

	Terms Forming Tightest Clusters	Coordinate 1	Coordinate 2	Coordinate 3
(22)	Statewide	0.51	0.18	-0.16
	Lawmakers	0.45	0.17	-0.13
	Court	0.24	0.09	-0.10
	Landowners	0.48	0.07	-0.22
	Balance	0.34	0.07	-0.13
	Agricultural	0.30	0.08	-0.18
	Definition	0.42	0.12	-0.25
(23)	Act	0.02	0.11	0.54
	Public	0.05	0.05	0.24
(24)	Regulation	0.37	0.03	0.37
	Decision	0.11	0.03	0.10
(25)	Impact	0.21	-0.03	0.35
	Economy	0.23	-0.00	0.35
	Clean	0.21	0.01	0.48
	Program	0.11	-0.05	0.28
(26)	Land	0.10	0.05	0.05
	Government	0.33	0.25	0.22
(27)	Issues	0.39	0.05	0.13
	Regulatory	0.42	0.06	0.11
	Economic	0.31	-0.02	0.10

Note. Three dimensions were specified in the VBMap procedures.

Also at one point from origin are connected the terms *management, floodplain, flood, future, homes, flooding, levees, corps, engineers, runoff, resources,* and *control.*

One of the largest term clusters formed at the first point from origin is comprised of 16 terms: *state, legislation, agencies, supports, issue, farmers, property, compensation, farm, owners, agriculture, ranchers, rights, support, congressional,* and *legislative.* Similarly connected in a cluster are the terms *laws, business,* and *wetland,* as well as *private* and *law.*

The seven terms *statewide, lawmakers, court, landowners, balance, agricultural,* and *wetlands* are joined into one cluster at the first point from origin, as are the terms *act* and *public.* The terms *regulation* and *decision* similarly are connected at the first level of similarity, along with the terms *impact, economy, clean,* and *program.* The small *regulation* cluster (two terms) and the *impact* cluster (four terms) are joined at the *second* point from origin, indicating the tendency of these six terms to occur together.

Remaining terms clustering together at the first point from origin are *land* and *government,* as well as *issues* with *regulatory* and *economic.*

Notably, the term *protection* is joined at the second point from origin with the term *protecting,* and the two terms are not connected with other terms *(preservation* and *preserving)* until the sixth point from origin, following the predicted pattern for the term identified earlier as relatively ambiguous in usage in the news releases.

Clusters representing closest co-occurrence similarity of terms are combined in

the agglomeration process, according to *reducing similarity* or *increasing dissimilarity* of co-occurrence, until finally all of the terms are forced to connect in the tree diagram, with some term clusters joined only at the distance of 25 indicating the least (that is, little or no) co-occurrence. For example, the dendogram suggests that the terms *conservation* and *watershed* rarely occur in the organizational news releases with the terms *issues, regulatory,* and *economic*. This suggests that they may tend to occur in different news releases (perhaps originating from different stakeholder groups, as the analysis will determine).

This range of clustering, from the distance of 1 to 25 in the dendogram, is ideal for meaningful interpretation related to terms in a data set, allowing for identification of terms and groups of terms that *tend to occur together* as well as those that *tend not to occur together.*

These procedures provide a baseline documentation of the term co-occurrence clustering patterns of the news release key terms. This is useful in ensuring the measurement validity of the frame mapping procedures, as will be shown.

It is recalled that the VBMap concept mapping procedures are based on calculation of matrix cosine coefficients for the term-by-term matrix; the cosine similarity measure indicates the degree of co-occurrence of terms in the various documents, or cases, under investigation. The mapping program extracts the largest eigenvectors *for each term* from the cosine coefficient matrix, depending on the number of dimensions specified (if three dimensions are specified, the three largest eigenvectors are extracted).

This discussion has reviewed how the mapping program indicates coordinate values that may be used for locating and plotting the terms in a multidimensional space; and, in a specifically-formatted output file of the VBMap program (the *.UNS* file) they also may be submitted to cluster analysis procedures to produce dendogram tree diagrams. As this analysis will show, both the cluster analysis dendograms and the multidimensional configurations provide graphic visual representations of the ways the terms relate to one another in the text under investigation. The mapping procedures, applied to substantive terms in documents, illustrate how "closely" or "distantly" the terms occur with respect to one another.

Inserting Code Identifier Terms. This analysis also will illustrate how the innovative addition of distinct constructed code identifier terms, inserted in various documents or cases, enables the researcher to carry the analysis of data structure a step further. In this analysis the insertion of a code term in each organizational news release, identifying the document as either a conservation advocacy group or a property-owner advocacy group news release, and the subsequent inclusion of these group identifier terms among the substantive terms specified for the VBMap multidimensional scaling and cluster analysis, allows the mapping procedures to address the question: What substantive terms occur in the documents (news releases) from one group, but not from the other group(s)? In this analysis, the question more specifically becomes, what terms in the news releases occur with the identifier code term for conservationists (and not with the other code term), forming their discussion and therefore representing their particular issue frame? Similarly, what terms co-occur

with the identifier term for property-owner organizations, thereby representing their particular issue frame? In other words, in the debates related to the policy issue of interest—wetlands—what terms comprise the conservationists' issue frame? The property owners'?

Through the use of inserted source identifier code terms signifying distinct stakeholder sources of the news release documents, the analysis can move beyond Concept Mapping to Frame Mapping.

So far, this frame mapping analysis of organizational news releases on wetlands has progressed through key term selection, mapping, and clustering procedures to establish the relative locations of key substantive terms to one another. Once this foundation is established, the analysis can proceed by repeating the searching, coding, mapping, and cluster analysis procedures on the same selected terms with the two inserted constructed group identifier terms representing the stakeholder groups of interest. The rationale for running the mapping and cluster analysis procedures without and also with the identifier terms is to confirm satisfactorily that insertion of the source identifier terms does not affect appreciably either the coordinate values assigned to the key terms nor the clustering patterns. In other words, it is important to ensure that the analysis is not based on an artifact of the measurement process in inserting the source identifier terms, which by definition occur with regularity, but never occur together, in the text.

It would be expected that the inclusion of a couple of additional terms in the mapping and clustering analysis could, would, and should "nudge" the location of

other words in the analysis, but only ever-so-slightly—it should not make a tossed salad out of the original mapping and clustering patterns. (The expected slight effect of the identifier term insertions is reasonable, given that 125 related terms will occupy a multidimensional space slightly different than would only 123 of the same terms.)

The procedures for making these comparisons follow.

A copy of the text file of the combined news releases (with added case identification numbers, etc.) was created and opened in WordPerfect, and within each news release was inserted a unique code group-identifier term signifying whether the news release originated from a conservation group or a property-owner group. The constructed code terms should be recognizable terms that would not occur naturally in the text. After these insertions, then, each of the 102 organizational news releases contained one and only one of the group identifier terms, and the terms would never occur together in the same news release. The revised text file was saved as a generic text file and formatted in the VBPro formatting procedure.

In WordPerfect a new search file was created to include the 123 selected terms of interest and the two group identifier terms. The search file was saved as a generic text file in the same directory as the VBPro program on the computer. The VBPro program was initiated, and the coding procedure was selected. The file names of the formatted file of the news releases and the new 125-term search file were input, and the coding procedure was run. The procedure created a coded numeric data file indicating, for each news release, the frequency of occurrences of the 123 selected terms and the two group identifier terms. The new coded file was saved by the

program in the same directory on the computer as the VBPro and VBMap programs. The coded numeric data file contained one row for each of the 102 news releases, and columns listing the identification number and frequency of occurrence for each of the 125 terms specified in the search file.

The VBMap program was opened and the file names for the new coded data file, and the expanded search file used to create it, were specified. Again, three dimensions were requested, and the program was instructed to save the report file and the term coordinates file. Within moments, the program reported the procedure was completed and the *.UNS* and *.MAP* files were saved.

Inspection of the term coordinates file, shown in Table 12, reveals assignment of divergent coordinate values (along *Coordinate 1)* of -.43 and .67, respectively, to the group identifier terms representing the conservationists and property-owners. The widely divergent coordinate values assigned to the group identifier terms are as expected for terms that, by definition, do not occur together. The terms that are assigned coordinate values nearest them are identified as those terms in the news releases that occur most frequently with them—terms that emerge as the most representative of the frame for each group in the issue debates. The coordinate values for *ecosystems* are similar to those for the Conservation Group identifier term, for instance, while the coordinate values for *farmers* and several other terms are similar to those for the Property-Owner group identifier term. As was the case earlier, the reported coordinate values could be used to produce a multidimensional map showing the relative location of each of the 123 key terms and two group identifier terms.

Table 12. Term Co-Occurrence Data Structure, Identified in VBMap *.MAP File* Output, for Two Code Terms and 123 Selected Terms from Organizational News Releases

Term	Coordinate 1	Coordinate 2	Coordinate 3
WETLANDS	0.32	0.08	-0.17
FARM	0.63	0.18	0.01
RIVER	-0.41	-0.03	-0.19
WATER	-0.18	0.03	-0.06
FARMERS	0.64	0.17	-0.07
FEDERAL	-0.02	0.33	0.29
RIVERS	-0.45	0.24	-0.12
STATE	0.18	0.08	-0.00
ENVIRONMENTAL	-0.10	-0.22	0.22
PRESIDENT	0.07	0.25	0.06
PROPERTY	0.55	0.18	-0.06
FLOOD	-0.41	0.70	0.08
MANAGEMENT	-0.37	0.61	0.02
SPECIES	-0.24	-0.40	-0.08
LAND	0.10	0.03	0.05
ACT	0.03	0.11	0.55
CONSERVATION	-0.24	-0.14	0.06
PUBLIC	0.03	0.04	0.24
NATURAL	-0.31	-0.38	0.01
PROTECT	-0.21	-0.18	-0.12
WILDLIFE	-0.26	-0.33	0.16
POLICY	0.13	0.12	0.16
PROTECTION	0.11	-0.26	-0.04
PRIVATE	0.45	-0.06	-0.08
ENDANGERED	-0.33	-0.29	-0.20
RIGHTS	0.61	0.14	-0.01
GOVERNMENT	0.34	0.21	0.22
PROGRAM	0.09	-0.07	0.28
WETLAND	0.21	-0.02	-0.24
BILL	0.09	-0.15	0.65
CONTROL	-0.38	0.58	0.17
SUPPORT	0.26	0.09	0.05
LEGISLATION	0.40	0.19	-0.04
LOCAL	0.15	0.31	0.28
DEVELOPMENT	-0.32	0.17	0.33
FLOODPLAIN	-0.45	0.71	0.05
STATES	-0.12	-0.31	0.17
REGULATIONS	0.27	0.33	-0.05
ISSUES	0.39	-0.00	0.14
AGRICULTURE	0.53	0.11	-0.03
WATERSHED	-0.27	-0.05	0.05

Table 12. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
SOUND	-0.04	-0.09	0.23
XCONS	-0.43	-0.14	0.08
ACRES	-0.19	-0.16	-0.22
RESTORATION	-0.32	0.13	-0.13
EVERGLADES	-0.18	-0.12	-0.18
CLEAN	0.20	-0.02	0.48
CORPS	-0.43	0.56	-0.06
PROGRAMS	0.02	0.40	0.29
PROJECTS	-0.20	-0.17	0.58
CONGRESS	0.09	0.23	0.13
POLLUTION	0.03	-0.20	0.53
RESOURCES	-0.17	0.28	-0.05
HABITAT	-0.24	-0.29	-0.12
AGENCIES	0.36	0.22	-0.07
ENVIRONMENT	-0.27	0.20	0.20
HEALTH	0.25	-0.12	0.15
POLICIES	-0.05	0.55	0.18
REFORM	0.17	0.53	0.12
DAMS	-0.25	0.16	-0.06
ENGINEERS	-0.45	0.60	-0.08
SOCIETY	-0.15	-0.19	0.05
XPROP	0.67	0.16	-0.02
AREA	-0.13	-0.23	-0.00
BAY	-0.06	-0.14	0.01
PROJECT	-0.15	-0.08	-0.08
REGULATORY	0.43	0.02	0.11
FISH	-0.19	-0.12	-0.13
ECONOMIC	0.30	-0.05	0.11
ADMINISTRATION	-0.12	0.03	0.09
THREATENED	-0.36	-0.30	-0.22
BIRD	-0.09	-0.15	-0.08
LANDOWNERS	0.48	0.02	-0.21
QUALITY	0.03	-0.26	0.25
BIRDS	-0.15	-0.22	-0.11
AGRICULTURAL	0.31	0.04	-0.18
LEGISLATIVE	0.55	0.08	0.08
LOSS	-0.06	0.15	-0.17
LANDS	-0.12	-0.34	0.27
COMPENSATION	0.52	0.16	-0.09
PLANTS	-0.12	-0.38	0.45
PRESERVE	-0.06	-0.13	-0.14
LEVEES	-0.45	0.66	0.01
COURT	0.24	0.06	-0.10
ECOSYSTEM	-0.40	-0.11	-0.16

Table 12. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
SUPPORTS	0.47	0.04	0.01
MIGRATORY	-0.13	-0.22	-0.11
FUTURE	-0.16	0.26	0.03
LAWS	0.16	-0.04	-0.13
ISSUE	0.27	-0.01	-0.01
BALANCE	0.35	0.03	-0.13
PRESERVATION	0.06	-0.11	-0.25
DAMAGE	-0.13	-0.17	0.42
STATEWIDE	0.53	0.12	-0.15
ECOSYSTEMS	-0.40	-0.19	0.00
HOMES	-0.40	0.74	0.05
BUSINESS	0.25	-0.03	-0.14
REGULATION	0.37	-0.02	0.38
DEFINITION	0.43	0.07	-0.24
PROTECTING	0.05	-0.26	-0.12
APPROACH	-0.15	0.26	-0.12
RARE	-0.20	-0.39	-0.16
OWNERS	0.40	0.12	0.01
IMPACT	0.19	-0.05	0.35
LAW	0.27	-0.04	-0.07
PROTECTED	-0.03	-0.30	0.05
CONSTRUCTION	-0.11	-0.13	0.53
RESEARCH	-0.12	-0.24	-0.00
RUNOFF	-0.25	0.33	-0.05
FORESTS	-0.12	-0.31	0.01
WATERS	-0.04	-0.07	0.14
GLOBAL	-0.08	-0.24	0.47
BENEFITS	-0.03	0.45	-0.07
PRESERVING	0.08	-0.14	-0.21
RANCHERS	0.21	0.04	-0.02
DECISION	0.10	0.01	0.10
ECONOMY	0.23	-0.03	0.35
EARTH	-0.22	-0.21	-0.00
PLANT	-0.06	-0.28	0.40
FIELD	-0.00	-0.18	0.25
STUDY	-0.16	0.26	0.18
LAWMAKERS	0.46	0.12	-0.13
CONGRESSIONAL	0.28	0.09	0.03
FLOODING	-0.30	0.59	0.01
RESTORE	-0.12	-0.13	-0.14

Note. Three dimensions were specified in VBMap procedures. Eigenvalues: 10.63 8.64 5.19
Percentage Variance Per Factor: 43 35 21
Cumulative Variance: 43 79 100

Rather than generate a complex configuration showing relative location of 125 terms, it is preferable to combine terms into fewer (but meaningful) groups and *then* produce the multidimensional representation of the data. The advantage of multidimensional scaling, after all, is in its capacity to clarify and summarize enormous amounts of information.

Comparison of the coordinate values in Tables 9 and 12 confirms the same relative location and position of the selected terms is retained after addition of the two group-identifier terms. This stability is dramatically evident in the related dendogram diagram, which is presented in Figures 4 and 5. The dendogram was produced by repeating the procedures described for producing the dendogram for the 123 selected terms: (1) the VBMap report file (for the code terms *and* other selected terms) was submitted as an ASCII text data file into SPSS; (2) the data were arranged in a string variable and three numeric variables representing *Term, Coordinate 1, Coordinate 2,* and *Coordinate 3;* (3) the *classify* procedure was selected and the *hierarchical* cluster analysis was specified with *agglomerative* algorithm using the *cosine* method; (4) and the *dendogram* plot diagram was requested.

Information in the VBMap report, which was submitted to SPSS for hierarchical cluster analysis to create the dendogram in Figures 4 and 5, is presented in Table 13.

The dendogram for the co-occurrence clustering patterns of the selected substantive terms and the identifier terms yielded essentially the same co-occurrence patterns as did the previous analysis for the terms without the identifier code terms.

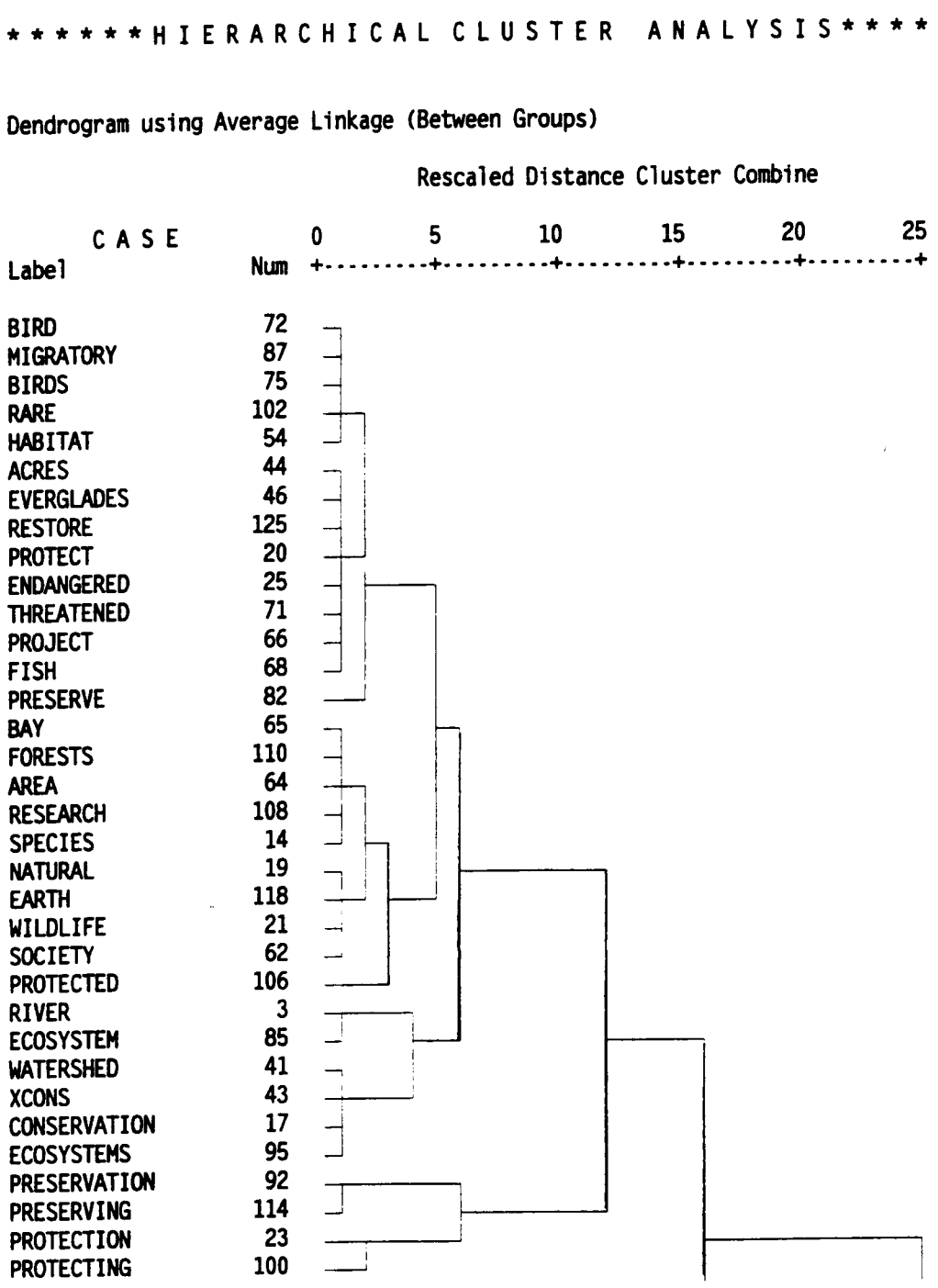


Figure 4. Clustering Dendogram for Two Code Source Identifier Terms with 123 Substantive Terms from Organizational News Releases

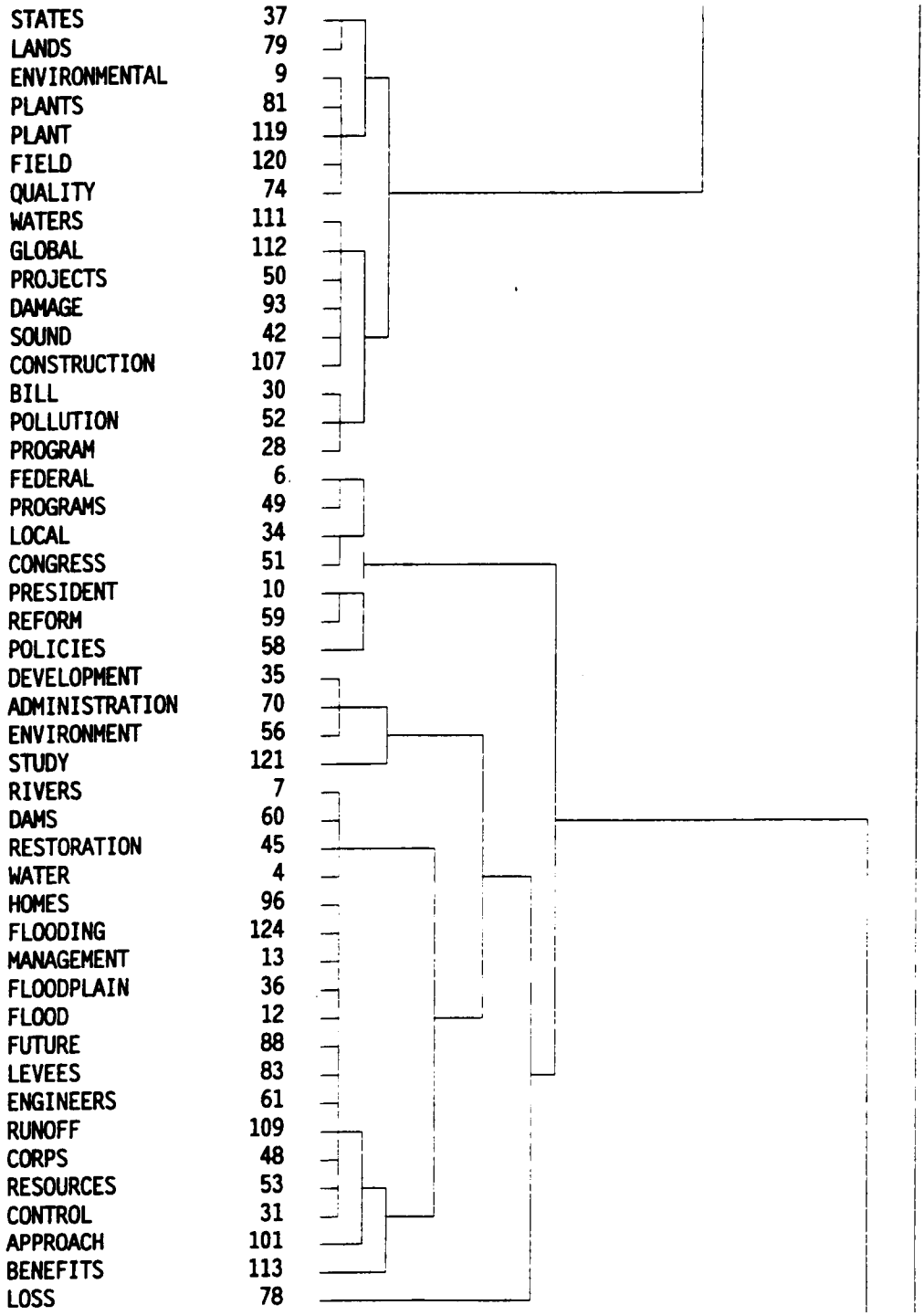


Figure 4. (continued)

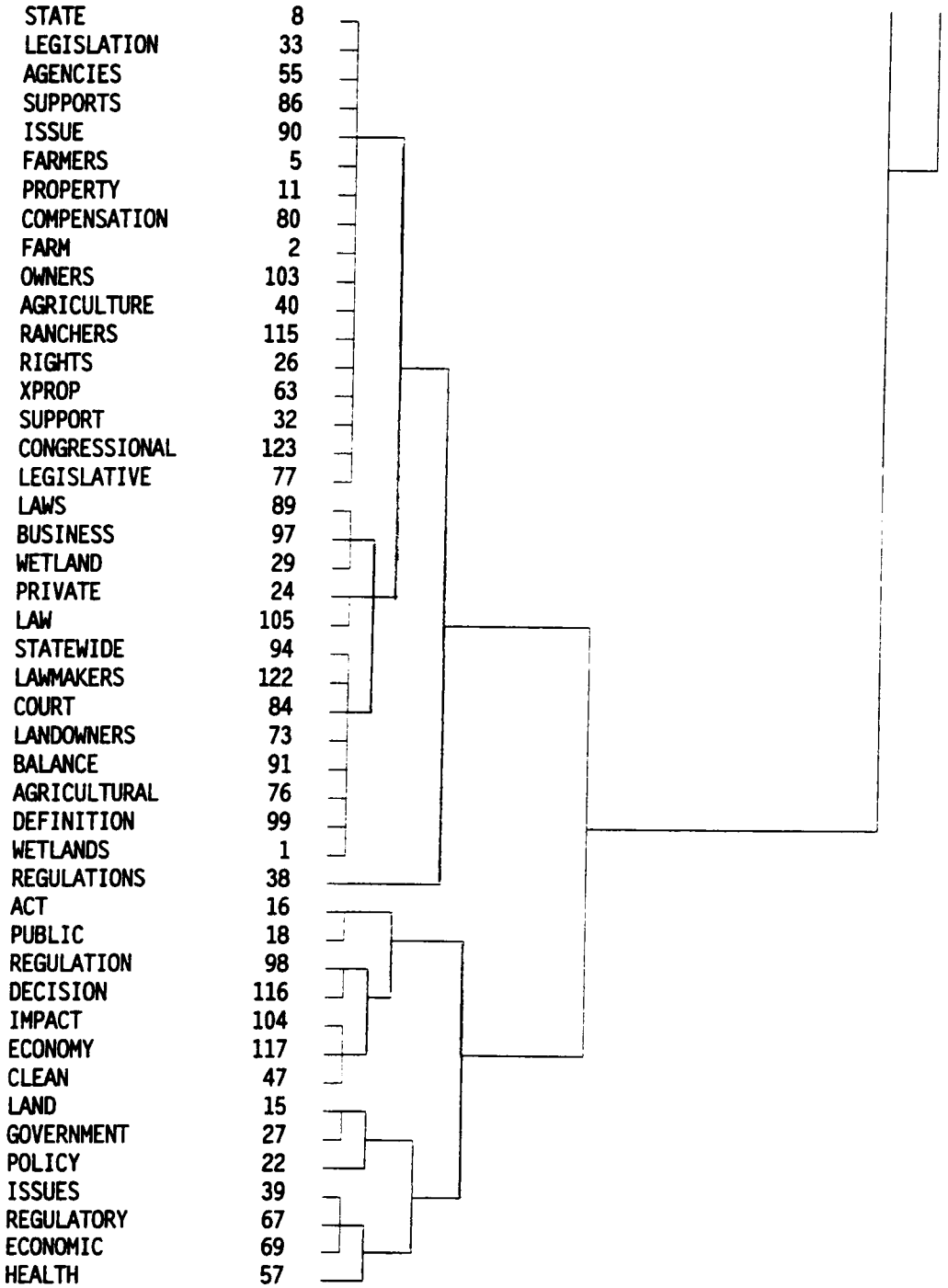


Figure 4. (continued)

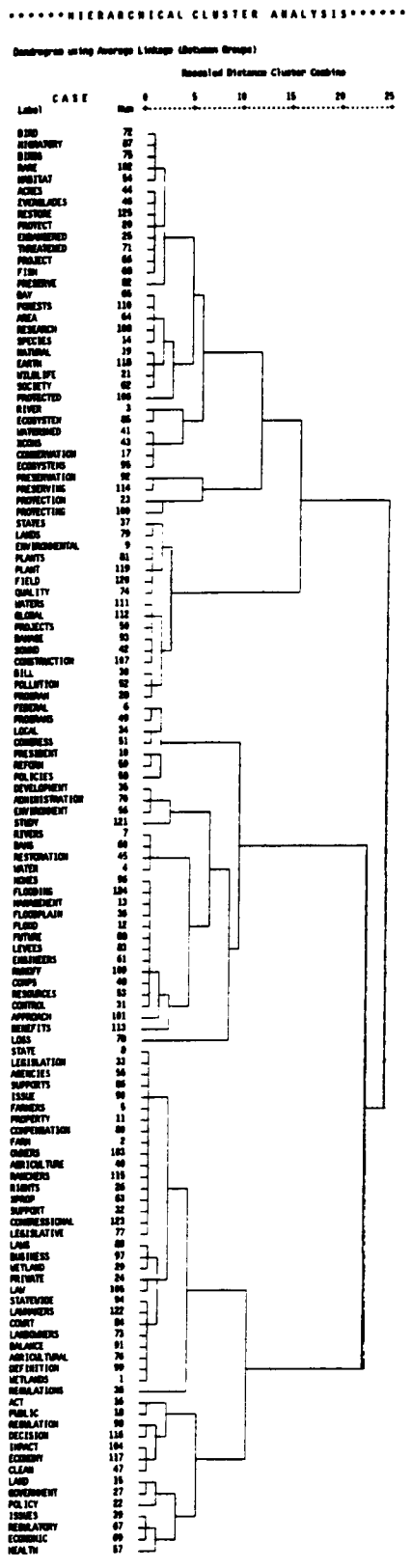


Figure 5. Full View of Clustering Dendogram for Two Identifier Terms with 123 Substantive Terms in Figure 4

Table 13. VBMap Output in *.UNS File* for Two Code Terms and 123 Selected Terms from Organizational News Releases

Term	Coordinate 1	Coordinate 2	Coordinate 3
WETLANDS,	0.321,	0.085,	-0.171
FARM,	0.632,	0.178,	0.008
RIVER,	-0.411,	-0.032,	-0.187
WATER,	-0.178,	0.032,	-0.061
FARMERS,	0.641,	0.174,	-0.066
FEDERAL,	-0.020,	0.333,	0.291
RIVERS,	-0.449,	0.242,	-0.122
STATE,	0.179,	0.083,	-0.001
ENVIRONMENTAL,	-0.097,	-0.219,	0.225
PRESIDENT,	0.073,	0.248,	0.061
PROPERTY,	0.551,	0.182,	-0.062
FLOOD,	-0.406,	0.700,	0.079
MANAGEMENT,	-0.373,	0.613,	0.023
SPECIES,	-0.241,	-0.404,	-0.081
LAND,	0.097,	0.032,	0.054
ACT,	0.027,	0.106,	0.545
CONSERVATION,	-0.243,	-0.143,	0.056
PUBLIC,	0.035,	0.037,	0.244
NATURAL,	-0.312,	-0.379,	0.012
PROTECT,	-0.211,	-0.180,	-0.123
WILDLIFE,	-0.257,	-0.332,	0.157
POLICY,	0.133,	0.116,	0.158
PROTECTION,	0.115,	-0.260,	-0.044
PRIVATE,	0.453,	-0.057,	-0.078
ENDANGERED,	-0.327,	-0.288,	-0.202
RIGHTS,	0.606,	0.140,	-0.010
GOVERNMENT,	0.341,	0.206,	0.222
PROGRAM,	0.091,	-0.066,	0.278
WETLAND,	0.214,	-0.015,	-0.244
BILL,	0.092,	-0.150,	0.652
CONTROL,	-0.381,	0.579,	0.174
SUPPORT,	0.262,	0.090,	0.053
LEGISLATION,	0.404,	0.193,	-0.038
LOCAL,	0.146,	0.305,	0.282
DEVELOPMENT,	-0.315,	0.167,	0.325
FLOODPLAIN,	-0.447,	0.711,	0.048
STATES,	-0.118,	-0.313,	0.174
REGULATIONS,	0.273,	0.332,	-0.049
ISSUES,	0.391,	-0.001,	0.136
AGRICULTURE,	0.532,	0.110,	-0.032
WATERSHED,	-0.267,	-0.052,	0.050
SOUND,	-0.043,	-0.086,	0.234
XCONS [Code Term],	-0.431,	-0.139,	0.083

Table 13. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
ACRES,	-0.191,	-0.157,	-0.223
RESTORATION,	-0.320,	0.134,	-0.129
EVERGLADES,	-0.177,	-0.118,	-0.177
CLEAN,	0.201,	-0.016,	0.484
CORPS,	-0.428,	0.563,	-0.063
PROGRAMS,	0.017,	0.400,	0.287
PROJECTS,	-0.203,	-0.173,	0.578
CONGRESS,	0.091,	0.235,	0.132
POLLUTION,	0.030,	-0.195,	0.534
RESOURCES,	-0.169,	0.282,	-0.046
HABITAT,	-0.239,	-0.289,	-0.117
AGENCIES,	0.358,	0.219,	-0.066
ENVIRONMENT,	-0.270,	0.201,	0.202
HEALTH,	0.249,	-0.120,	0.150
POLICIES,	-0.049,	0.554,	0.176
REFORM,	0.169,	0.532,	0.116
DAMS,	-0.247,	0.162,	-0.056
ENGINEERS,	-0.448,	0.597,	-0.079
SOCIETY,	-0.154,	-0.193,	0.047
XPROP [Code Term],	0.666,	0.163,	-0.022
AREA,	-0.135,	-0.225,	-0.003
BAY,	-0.056,	-0.144,	0.008
PROJECT,	-0.150,	-0.078,	-0.076
REGULATORY,	0.429,	0.018,	0.112
FISH,	-0.188,	-0.115,	-0.132
ECONOMIC,	0.298,	-0.054,	0.108
ADMINISTRATION,	-0.119,	0.034,	0.089
THREATENED,	-0.356,	-0.295,	-0.215
BIRD,	-0.089,	-0.150,	-0.078
LANDOWNERS,	0.479,	0.018,	-0.209
QUALITY,	0.034,	-0.265,	0.254
BIRDS,	-0.153,	-0.219,	-0.114
AGRICULTURAL,	0.307,	0.043,	-0.180
LEGISLATIVE,	0.549,	0.080,	0.083
LOSS,	-0.055,	0.145,	-0.172
LANDS,	-0.119,	-0.339,	0.266
COMPENSATION,	0.520,	0.157,	-0.093
PLANTS,	-0.124,	-0.380,	0.445
PRESERVE,	-0.057,	-0.128,	-0.135
LEVEES,	-0.453,	0.656,	0.006
COURT,	0.242,	0.057,	-0.097
ECOSYSTEM,	-0.402,	-0.110,	-0.155
SUPPORTS,	0.472,	0.038,	0.006
MIGRATORY,	-0.131,	-0.218,	-0.111

Table 13. (continued)

Term	Coordinate 1	Coordinate 2	Coordinate 3
FUTURE,	-0.162,	0.261,	0.029
LAWS,	0.161,	-0.038,	-0.129
ISSUE,	0.266,	-0.007,	-0.009
BALANCE,	0.346,	0.031,	-0.125
PRESERVATION,	0.058,	-0.109,	-0.252
DAMAGE,	-0.127,	-0.167,	0.419
STATEWIDE,	0.527,	0.117,	-0.155
ECOSYSTEMS,	-0.401,	-0.193,	0.000
HOMES,	-0.400,	0.743,	0.054
BUSINESS,	0.252,	-0.033,	-0.140
REGULATION,	0.366,	-0.017,	0.376
DEFINITION,	0.431,	0.067,	-0.237
PROTECTING,	0.047,	-0.258,	-0.123
APPROACH,	-0.148,	0.260,	-0.115
RARE,	-0.202,	-0.386,	-0.156
OWNERS,	0.397,	0.118,	0.008
IMPACT,	0.190,	-0.055,	0.348
LAW,	0.273,	-0.040,	-0.075
PROTECTED,	-0.034,	-0.300,	0.050
CONSTRUCTION,	-0.107,	-0.128,	0.526
RESEARCH,	-0.121,	-0.239,	-0.005
RUNOFF,	-0.250,	0.326,	-0.045
FORESTS,	-0.120,	-0.306,	0.011
WATERS,	-0.040,	-0.074,	0.142
GLOBAL,	-0.081,	-0.242,	0.466
BENEFITS,	-0.032,	0.447,	-0.073
PRESERVING,	0.083,	-0.141,	-0.208
RANCHERS,	0.206,	0.044,	-0.016
DECISION,	0.104,	0.015,	0.103
ECONOMY,	0.226,	-0.027,	0.348
EARTH,	-0.220,	-0.213,	-0.001
PLANT,	-0.058,	-0.281,	0.404
FIELD,	-0.003,	-0.184,	0.245
STUDY,	-0.155,	0.259,	0.184
LAWMAKERS,	0.460,	0.123,	-0.125
CONGRESSIONAL,	0.282,	0.092,	0.032
FLOODING,	-0.302,	0.590,	0.013
RESTORE,	-0.122,	-0.130,	-0.144

Note. Three dimensions were specified in VBMap procedures.

This indicates the stability of the clusters under growth, which is one criterion of a sound algorithm (Gerrie, 1983). In other words, the clusters do not change appreciably every time a term is added to the analysis.

Like the clustering schedule in the dendogram in Figures 2 and 3, the clustering schedule in Figures 4 and 5 ranges from 1 to 25, the first distance from the point of origin to the last, indicating a complete range of term co-occurrence clustering patterns within the data set of the organizational news releases. That is, some terms tended to occur together in the various news releases while also tending *not* to occur with certain other co-occurring terms. Again, for instance, the terms *conservation, ecosystems,* and *watershed* are clustered together, this time *with* the conservationists' group identifier term. Again, the terms *issues, regulatory,* and *economic* are clustered together. The property-owners' group identifier term is clustered with a another stable group of some 16 terms including *compensation, rights,* and *farmers.*

The term grouping patterns at the first distance from the point of origin are listed in Table 14. Comparison of the 26 clusters for the 112 terms gives further confirmation to the stability of the clusters, as they are practically identical to the clusters formed by the same 110 terms without the two group identifier terms (shown in Table 11). Terms such as *ecosystems, watershed,* and *conservation* clustered with the conservationists' identifier term and the terms *compensation, agriculture,* and *rights* clustered (indicating co-occurrence in the news releases) with the property-owners' identifier term.

Table 14. Groupings of Co-Occurring Terms in Organizational News Releases on Wetlands from Hierarchical Cluster Analysis of 123 Selected Terms with Two Code Source Identifier Terms

	Terms Forming Tightest Clusters	Coordinate 1	Coordinate 2	Coordinate 3
(1)	Bird	-0.09	-0.15	-0.08
	Migratory	-0.13	-0.22	-0.11
	Birds	-0.15	-0.22	-0.11
	Rare	-0.20	-0.39	-0.16
	Habitat	-0.24	-0.29	-0.12
(2)	Acres	-0.19	-0.16	-0.22
	Everglades	-0.18	-0.12	-0.18
	Restore	-0.12	-0.13	-0.14
	Protect	-0.21	-0.18	-0.12
	Endangered	-0.33	-0.29	-0.20
	Threatened	-0.36	-0.30	-0.22
	Project	-0.15	-0.08	-0.08
	Fish	-0.19	-0.12	-0.13
(3)	Bay	-0.06	-0.14	0.01
	Forests	-0.12	-0.31	0.01
	Area	-0.13	-0.23	-0.00
	Research	-0.12	-0.24	-0.00
	Species	-0.24	-0.40	-0.08
(4)	Natural	-0.31	-0.38	0.01
	Earth	-0.22	-0.21	-0.00
	Wildlife	-0.26	-0.33	0.16
	Society	-0.15	-0.19	0.05
(5)	River	-0.41	-0.03	-0.19
	Ecosystem	-0.40	-0.11	-0.16
(6)	Watershed	-0.27	-0.05	0.05
	XCons [Code Term]	-0.43	-0.14	0.08
	Conservation	-0.24	-0.14	0.06
	Ecosystems	-0.40	-0.19	0.00
(7)	Preservation	0.06	-0.11	-0.25
	Preserving	0.08	-0.14	-0.21
(8)	States	-0.12	-0.31	0.17
	Lands	-0.12	-0.34	0.27

Table 14. (continued)

Terms Forming Tightest Clusters		Coordinate 1	Coordinate 2	Coordinate 3
(9)	Environmental	-0.10	-0.22	0.22
	Plants	-0.12	-0.38	0.45
	Plant	-0.06	-0.28	0.40
	Field	-0.00	-0.18	0.25
	Quality	0.03	-0.26	0.25
(10)	Waters	-0.04	-0.07	0.14
	Global	-0.08	-0.24	0.47
	Projects	-0.20	-0.17	0.58
	Damage	-0.13	-0.17	0.42
	Sound	-0.04	-0.09	0.23
	Construction	-0.11	-0.13	0.53
(11)	Bill	0.09	-0.15	0.65
	Pollution	0.03	-0.20	0.53
	Program	0.09	-0.07	0.28
(12)	Federal	-0.02	0.33	0.29
	Programs	0.02	0.40	0.29
(13)	Local	0.15	0.31	0.28
	Congress	0.09	0.23	0.13
(14)	President	0.07	0.25	0.06
	Reform	0.17	0.53	0.12
(15)	Development	-0.32	0.17	0.33
	Administration	-0.12	0.03	0.09
	Environment	-0.27	0.20	0.20
(16)	Rivers	-0.45	0.24	-0.12
	Dams	-0.25	0.16	-0.06
	Restoration	-0.32	0.13	-0.13
	Water	-0.18	0.03	-0.06

Table 14. (continued)

Terms Forming Tightest Clusters		Coordinate 1	Coordinate 2	Coordinate 3
(17)	Homes	-0.40	0.74	0.05
	Flooding	-0.30	0.59	0.01
	Management	-0.37	0.61	0.02
	Floodplain	-0.45	0.71	0.05
	Flood	-0.41	0.70	0.08
	Future	-0.16	0.26	0.03
	Levees	-0.45	0.66	0.01
	Engineers	-0.45	0.60	-0.08
	Runoff	-0.25	0.33	-0.05
	Corps	-0.43	0.56	-0.06
	Resources	-0.17	0.28	-0.05
	Control	-0.38	0.58	0.17
(18)	State	0.18	0.08	-0.00
	Legislation	0.40	0.19	-0.04
	Agencies	0.36	0.22	-0.07
	Supports	0.47	0.04	0.01
	Issue	0.27	-0.01	-0.01
	Farmers	0.64	0.17	-0.07
	Property	0.55	0.18	-0.06
	Compensation	0.52	0.16	-0.09
	Farm	0.63	0.18	0.01
	Owners	0.40	0.12	0.01
	Agriculture	0.53	0.11	-0.03
	Ranchers	0.21	0.04	-0.02
	Rights	0.61	0.14	-0.01
	XProp [Code Term]	0.67	0.16	-0.02
	Support	0.26	0.09	0.05
	Congressional	0.28	0.09	0.03
	Legislative	0.55	0.08	0.08
(19)	Laws	0.16	-0.04	-0.13
	Business	0.25	-0.03	-0.14
	Wetland	0.21	-0.02	-0.24
(20)	Private	0.45	-0.06	-0.08
	Law	0.27	-0.04	-0.07

Table 14. (continued)

	Terms Forming Tightest Clusters	Coordinate 1	Coordinate 2	Coordinate 3
(21)	Statewide	0.53	0.12	-0.15
	Lawmakers	0.46	0.12	-0.13
	Court	0.24	0.06	-0.10
	Landowners	0.48	0.02	-0.21
	Balance	0.35	0.03	-0.13
	Agricultural	0.31	0.04	-0.18
	Definition	0.43	0.07	-0.24
	Wetlands	0.32	0.08	-0.17
(22)	Act	0.03	0.11	0.55
	Public	0.03	0.04	0.24
(23)	Regulation	0.37	-0.02	0.38
	Decision	0.10	0.01	0.10
(24)	Impact	0.19	-0.05	0.35
	Economy	0.23	-0.03	0.35
	Clean	0.20	-0.02	0.48
(25)	Land Government	0.10	0.03	0.05
(26)	Issues	0.39	-0.00	0.14
	Regulatory	0.43	0.02	0.11
	Economic	0.30	-0.05	0.11

Note. Three dimensions were specified in the VBMap procedures.

Notably, the agglomerative hierarchical cluster analysis depicted in the dendogram did not connect the distinctive identifier terms until the distance of 25, the last possible level of similarity (it is recalled that the two identifier terms would never occur together in the same news release). This documentation demonstrates the power of these procedures to distinguish between those terms that do not occur together, and terms that tend to occur together.

To this point of the analysis the word processing, VBPro, VBMap, and statistical programs have been used to produce map coordinates and clustering dendogram diagrams for 123 key terms and also the key terms *with* the two added group identifier terms. The map coordinates and dendograms listing as many as 123 or 125 individual terms are complex; a multidimensional scaling configuration for so many terms would be cluttered and therefore difficult to interpret. Rather than generating a multidimensional map with so many terms, it is desirable to consolidate or further reduce the term co-occurrence information. To accomplish this the following steps were followed:

(1) Based on the clustering patterns revealed in the 123-term dendogram and the 125-term dendogram another search file was created in WordPerfect using the same terms, but this time the terms were combined into meaningful groups of terms that frequently co-occur—operationally, terms that were clustered together at the first point from the origin in the clustering schedule. Based on the clustering patterns of the base-line and subsequent dendograms, the term combinations specified in the new search file are listed in the first column of Table 15.

Table 15. News Release Key Term Cluster Groupings and Code Source Identifier Terms

Group	Term	Map Coordinates[a]
(1) *Habitat*	Habitat Bird Migratory Birds Rare	(- .37, - .34, - .39)
(2) *Endangered*	Endangered Protect Acres Everglades Restored Threatened Project Fish	(- .38, - .10, - .24)
(3) *Wildlife*	Wildlife Natural Earth	(- .52, .13, - .28)
(4) *Conservation*	Conservation Watershed Ecosystems	(- .45, - . 02, .04)
(5) *Environmental*	Environmental Plant Plants Field Quality	(- .22, .51, - .20)
(6) *Waters*	Waters Global Construction Projects Damage	(- .26, .65, - .00)
(7) *Flood*	Flood Homes Flooding Management Floodplain Future Levees Engineers Runoff Corps Resources Control	(- .15, - .00, .77)

Table 15. (continued)

Group	Term	Map Coordinates[a]
(8) *Farm*	Farm	(.68, .07, - .12)
	State	
	Legislation	
	Agencies	
	Supports	
	Issue	
	Farmers	
	Property	
	Compensation	
	Owners	
	Agriculture	
	Ranchers	
	Rights	
	Support	
	Congressional	
	Legislative	
(9) *Landowners*	Landowners	(.60, - .04, - .19)
	Statewide	
	Lawmakers	
	Court	
	Balance	
	Agricultural	
	Definition	
(10) *Regulation*	Regulation	(.16, .57, .07)
	Act	
	Public	
	Decision	
	Impact	
	Economy	
	Clean	
(11) *Policy*	Policy	(.38, .32, - .05)
	Land	
	Government	
	Issues	
	Regulatory	
	Economic	
	Health	
(12) *Conservation Advocates*	XCons [Code Term]	(- .52, .08, .03)
(13) *Property-Owner Advocates*	XProp [Code Term]	(.72, .05, - .15)

Note. Term groups were based on cluster analysis of term co-occurrence; the 11 term groups and 2 identifier terms were used in producing frame map coordinates, a cluster analysis dendogram, and a frame map.
[a] Produced with VBPro and VBMap programs, three dimensions specified.

The terms *habitat, bird, migratory, birds,* and *rare,* which were identified as closely co-occurring, were grouped together in the search file, along with other closely-clustering terms to form meaningful *groups of terms.* Of the 123 naturally-occurring terms included in the dendogram, 49 are connected to the conservation group identifier term by level 17, and 74 terms are connected to the property-owner group identifier term by level 24. The former terms are thereby demonstrated as more representative of the conservation releases, while the latter are more representative of the property-owner releases.

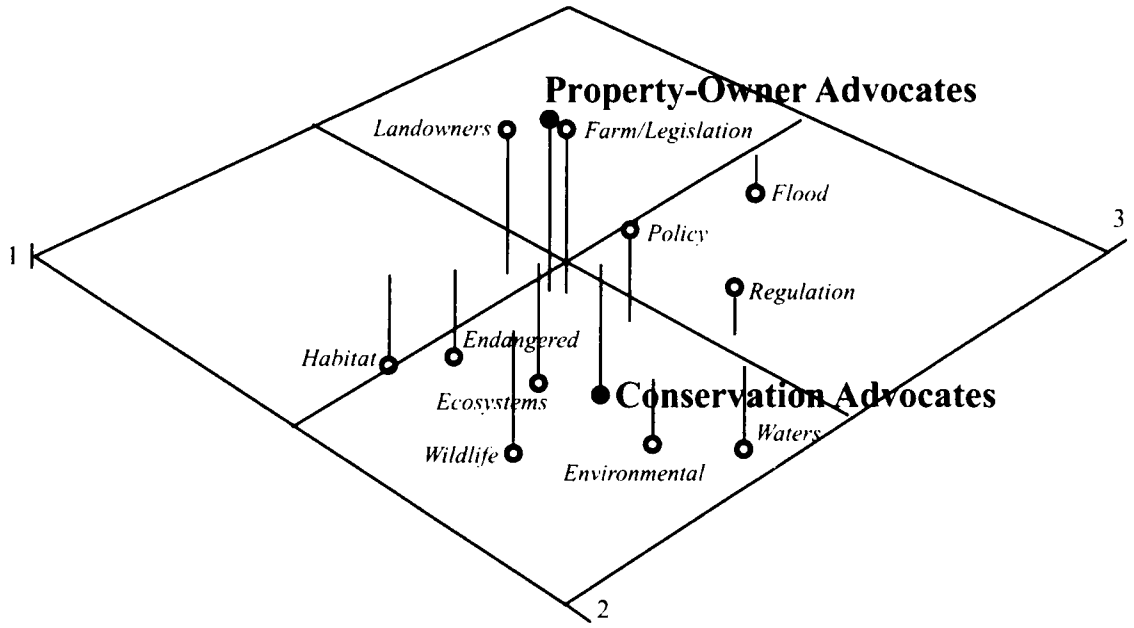
Some 11 meaningful *groups of terms* were listed in the search file, separated by facing arrows (" > < "). The two identifier terms also were included separately, so that the mapping procedures could specify *which groups of naturally co-occurring terms* tend to occur *with each identifier term* in the news releases and *how all the term groups are related* relative to one another. (The frame map can provide a richer visualization of the relative structure of the terms in a multidimensional space than a dendogram can offer.) The new search file was saved as a generic text file in the same directory as the VBPro program on the computer.

(2) VBPro was opened on the computer and the coding procedure was specified. The formatted *.FRM* file of the organizational news releases and the new search file were submitted to the code procedure to create a new coded numeric data file consisting of one row for each of the 102 news releases or cases, and columns in each row indicating the total frequency of occurrence of each of the 11 specified *groups of terms* and two identifier terms.

(3) Once this coded numeric data file was produced, then the VBMap program was opened on the computer and the coded numeric data file was submitted. Again, three dimensions were specified, and the options to save the output were selected. As before, the VBMap program output included two files, the *.MAP* output including the coordinate values for the 13 specified term categories (11 groups of terms and two code terms) as well as the *.UNS* output which can be submitted to statistical packages for cluster analysis.

(4) The output of the VBMap program was used to produce a multidimensional configuration (in this case, a three-dimensional map) and (through another iteration of hierarchical cluster analysis in SPSS) a streamlined dendogram, both of which will be discussed in the next section. The second column in Table 15 shows the respective coordinate values, for the three dimensions specified, for each of the 13 term categories, which were reported in the *.MAP* output of the VBMap analysis for the 13 terms/term groupings. As noted previously, these values are interpretable as coordinate values for producing a multidimensional configuration representing the similarity or co-occurrence relationship of the terms. The coordinate values for each of these 13 key term categories, listed in the table, were used to produce the frame map shown as Figure 6, which will be discussed in the following section.

Acceptable frame maps can be produced by careful hand drawing. The maps presented in this report were produced with Aldus® PageMaker® 5.0. Improved methods of producing these multidimensional configurations or maps may be available and no doubt will be developed.



Three-dimensional configuration of 11 clusters of high-frequency key terms from organizational news releases on wetlands. Term clusters shown in italics; code source identifier terms for Property-Owner Advocates and Conservation Advocates shown in boldface, with solid point. Numerals in figure indicate dimensions.

Figure 6. Frame Map for Conservation Advocates and Property-Owner Advocates

Frame Mapping Stage Five—Interpretation

The frame map shown in Figure 6 consolidates in an appealingly concise way a great deal of information on the 125 selected terms of interest relative to one another. Notably, the group identifier terms for the Conservation Groups and the Property-Owner Groups fall far apart with widely divergent coordinate values of (-.52, .08, .03) and (.72, .05, -.15) respectively. These values reflect demonstrated divergence of term co-occurrence, which is as expected since the code terms by definition never occur together.

Strikingly visual are the locations of various meaningful groups of terms that are more proximate to one group identifier term than to another, which *holds clear implications for the expression of the wetlands issue definition by each group.* For instance, the map reveals the close proximity of the *landowners* and *farm/legislation* term clusters to the property owners' identifier term, indicated in boldface on Figure 6 as ***Property-Owner Advocates.*** Notably, the location of the term clusters is interpreted reasonably to indicate the recurrence of these terms with the group identifier term, that is, within the news releases from the property-owner advocacy groups. (The *landowners* term cluster, it is recalled, includes the terms *landowners, statewide, lawmakers, court, balance, agricultural,* and *definition.* Similarly, the *farm/legislation* term cluster includes the terms *farm, state, legislation, agencies, supports, issue, farmers, property, compensation, owners, agriculture, ranchers, rights, supports, congressional,* and *legislative.)* The mapped positions of these naturally-occurring terms, relative to the mapped position of the identifier term for the

property-owner advocacy groups, are interpreted to indicate the selected terms that best represent the wetlands issue frame by those stakeholders.

Locating closest to the conservationists' identifier term, indicated in the frame map in Figure 6 as ***Conservation Advocates,*** are the term clusters *wildlife, conservation, endangered,* and *habitat.* This signifies the recurring occurrence of these terms within the news releases from the conservation advocacy groups. (It is recalled the terms in the *wildlife* term cluster are *wildlife, natural,* and *earth.* The *ecosystems* term cluster includes *conservation, watershed,* and *ecosystems.* The *endangered* term cluster includes *endangered, protect, acres, Everglades, restored, threatened, project,* and *fish.* Terms in the *habitat* term cluster include *habitat, bird, migratory, birds,* and *rare.)* The mapped location of these terms signify their representation of the wetlands issue frame by the conservationists.

In the frame map the term clusters for *flood* and *waters* located relatively distantly from either source identifier term, indicating that the terms included in these clusters are not terms most representative of the wetlands issue frame by either type of stakeholder.

This same pattern of term co-occurrence is presented in the dendogram generated from the coded numeric data file for the 13 term categories, shown in Figure 7. The dendogram joins the *farm/legislation* and *landowners* clusters almost immediately with the property-owners' identifier term, while the *conservation* term cluster is joined similarly with the conservationists' identifier term.

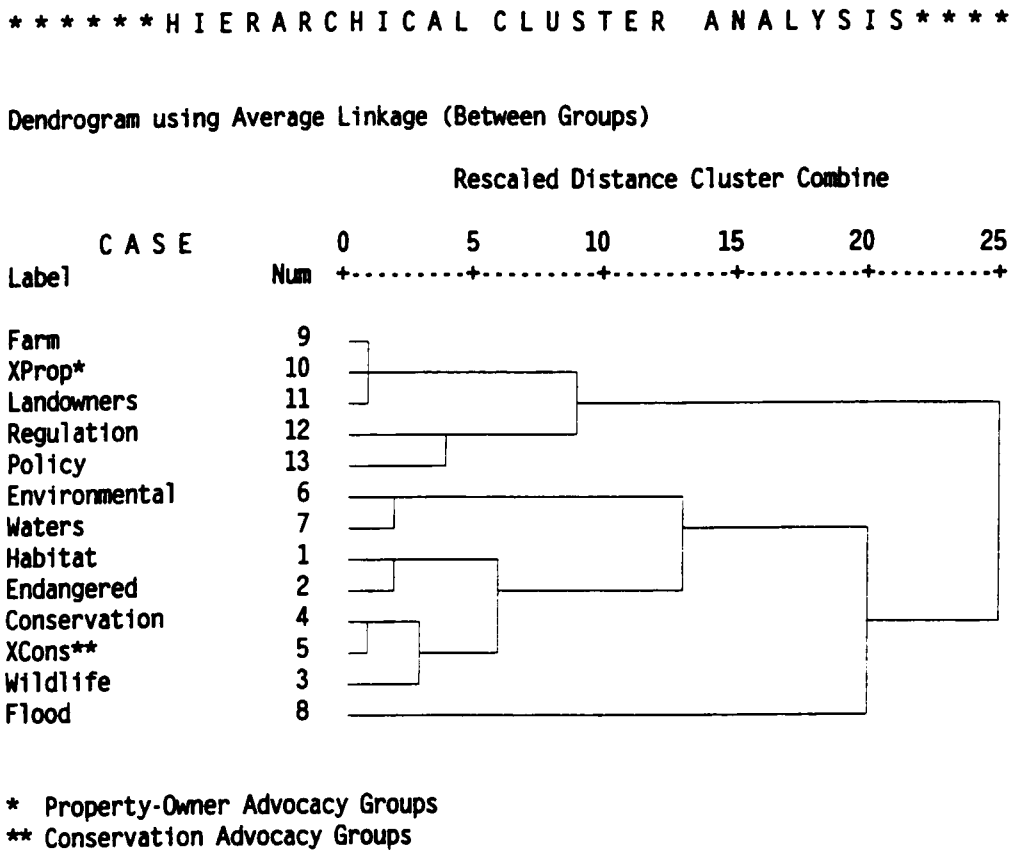


Figure 7. Clustering Dendogram for Organizational News Release Term Groupings and Code Source Identifier Terms

The clusters for *wildlife, endangered,* and *habitat* terms are connected early on to the conservationists' identifier term, while the term clusters for *regulation* and *policy* are connected to the property-owners' identifier term. Ultimately, *but not until the distance of 25* on the dendogram (indicating least similarity/most dissimilarity of co-occurrence), are the two major divisions connected in the tree diagram.

The clustering patterns revealed in the frame mapping procedures provide strong support for the existence of divergent issue frames between the two stakeholder groups. The specific terms that best represent the Conservation Frame and Property-Owner Frame, in the policy debates related to wetlands, are suggested by the cluster analysis dendograms, together with the coordinate values produced by the mapper and the corresponding multidimensional configuration. That is, the terms that cluster nearest each stakeholder group identifier term are revealed by the procedures as best representing the particular issue frame for that group. The frame mapping procedures allow the frame terms to emerge from the data through these specification methods, avoiding many of the methodological problems noted earlier in frame analysis using conventional, human-coded content analysis procedures.

In this analysis the 125-term dendogram shown in Figures 4 and 5 was again inspected for demarcation of proposed Conservation Frame terms and Property-Owner Frame terms; the dendogram shows various levels of similarity based on which terms clustered with (or most typically co-occurred with) each group identifier term. As noted previously, only three terms were clustered with the conservationists' identifier term at the first line from point of origin, while 16 terms were grouped at that level

with the property-owners' identifier term. Ideally, a more balanced or (if possible, an) equal number of representative terms should be selected for each frame. The equal balance of the terms representing each frame makes possible meaningful comparisons later of relative frame term prominence in individual articles, in one-year increments, or in larger time periods such as a decade or more. This will be illustrated later in this analysis.

How many terms should be selected? The answer to this must be suggested by the co-occurring patterns of the terms. Certainly, more than three terms would be desirable—but, are 16 terms enough? In each frame analysis study, the researcher will seek to identify balanced groups of terms that can represent each stakeholder source group, at exactly or about the same level of similarity. In this study further inspection of the dendogram and widening of the term selections to include terms that clustered together with each group identifier term at distance 7 or lower (out of the maximum distance of 25) yielded an appealing balance and quantity of terms. At this level of clustering, some 29 terms are joined with the conservationists' identifier term and 30 terms, including *wetlands,* are joined with the property-owner identifier term.

The clustering of the term *wetlands* with the Property-Owner terms suggests that the property-owner advocacy groups discuss *wetlands* in their news releases with relatively more emphasis than do the conservation advocacy groups. This suggests that the issue is a pivotal issue of high priority and current emphasis to the property-owner advocacy groups. In this analysis it is decided to exclude the term *wetlands* from the terms selected to represent the Property-Owner Frame since it was pre-

determined—by the news releases search procedures—that each of the 102 news releases from which the terms were selected includes the term *wetlands*.

Specifying the Frame Terms. With the removal of the term *wetlands* as a potential frame term and with the selection of the terms clustered together at the same level of similarity as described above, some 29 terms were thus specified to represent the Conservation Frame while some 29 different terms were specified to represent the Property-Owner Frame. These terms are listed in Tables 16 and 17, respectively.

The *Particular Words* of Frames. It is recalled that news frames *"are constructed and embodied in keyterms* and concepts," and that since text consists of words, *"frames can be detected by probing for particular words"* (Entman, 1991, p. 7). Based on this assumption, and using the innovative Frame Mapping procedures available with the VBPro and VBMap programs, this study identified sets of *particular words* representing—in the wetlands debates issue—the Conservation Frame and the Property-Owner Frame, the issue definitions by conservationists and property owners. The following section will focus on the Conservation Frame and the Property-Owner Frame in alphabetical order.

The Conservation Frame. The terms specified in the Frame Mapping Method to represent the Conservation Frame for wetlands suggest that conservation advocates are *interested in conservation of natural resources such as forests and rivers, they want to protect and restore diverse natural ecosystems that serve as habitat for endangered and threatened species such as migratory birds and other wildlife.*

Table 16. Terms Specified by Frame Mapping to Represent *Conservation Frame* in Wetlands Policy Debates

Term[a]	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
River	.703	.000	.703
Natural	.292	.021	.271
Wildlife	.286	.021	.265
Species	.298	.074	.224
Conservation	.286	.063	.223
Watershed	.189	.000	.189
Everglades	.180	.000	.180
Endangered	.231	.058	.173
Society	.144	.005	.139
Project	.132	.000	.132
Protect	.237	.105	.132
Bird	.119	.000	.119
Bay	.128	.011	.117
Acres	.157	.042	.115
Threatened	.119	.005	.114
Birds	.109	.000	.109
Habitat	.141	.032	.109
Fish	.116	.021	.095
Ecosystem	.090	.000	.090
Migratory	.083	.000	.083
Ecosystems	.077	.000	.077
Area	.112	.037	.075
Rare	.067	.000	.067
Earth	.055	.000	.055
Forests	.055	.011	.044
Preserve	.074	.037	.037
Restore	.045	.011	.034
Research	.045	.026	.019
Protected	.042	.032	.010

Note. News releases were obtained from PR Newswire.

[a] Ranked by **difference of term occurrence** (by percentage) in news releases from conservation advocacy groups and property-owner advocacy groups.

[b] Listed in decimals of one percent.

Table 17. Terms Specified by Frame Mapping to Represent *Property-Owner Frame* in Wetlands Policy Debates

Term[a]	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Farm	.006	1.550	-1.544
Farmers	.016	.835	- .819
Property	.042	.562	- .520
Rights	.016	.404	- .388
Agriculture	.010	.305	- .295
Regulations	.032	.289	- .257
Legislation	.051	.278	- .227
Private	.083	.310	- .227
Landowners	.013	.179	- .166
Compensation	.000	.163	- .163
Agencies	.039	.194	- .155
Support	.087	.231	- .144
Legislative	.013	.152	- .139
Wetland	.109	.242	- .133
Statewide	.000	.126	- .126
Definition	.003	.116	- .113
Agricultural	.029	.126	- .097
Owners	.003	.100	- .097
Ranchers	.000	.095	- .095
Supports	.019	.110	- .091
Lawmakers	.000	.089	- .089
Balance	.019	.095	- .076
Court	.029	.100	- .071
Issue	.026	.089	- .063
State	.247	.305	- .058
Congressional	.013	.063	- .050
Business	.032	.068	- .036
Laws	.042	.074	- .032
Law	.051	.074	- .023

Note. News releases were obtained from PR Newswire.

[a] Ranked by **difference of term occurrence** (by percentage) in news releases from conservation advocacy groups and property-owner advocacy groups.

[b] Listed in decimals of one percent.

A review of organizational descriptions for the groups included in this study provides strong evidence for the validity of these term specification procedures.

For instance, the *National Audubon Society* works "to conserve and restore the natural ecosystems, focusing on birds and other wildlife for the benefit of humanity and earth's biological diversity" (Fischer & Schwartz, 1996, p. 512). *American Rivers* is described as "a public interest group working to preserve and restore America's river systems; fosters a river stewardship ethic." The group focuses "on all types of river protection methods" (Fischer & Schwartz, 1996, p. 504).

The *Sierra Club* is "concerned with nature and its interrelationships to human beings." The organization "promotes protection and conservation of the natural resources of the U.S. and the world, educates others about the need to preserve and restore the quality of the environment and the integrity of those ecosystems." The group also "works on campaigns to save threatened areas . . ." (Fischer & Schwartz, 1996, p. 524).

The Nature Conservancy is "dedicated to the preservation of biological diversity through land and water protection of natural areas . . ." (Fischer & Schwartz, 1996, p. 514). The *World Wildlife Fund* "seeks to protect the biological resources upon which human well-being depends" and "emphasizes preservation of endangered and threatened species of wildlife and plants as well as habitats and natural areas . . ." (Fischer & Schwartz, 1996, p. 518). The *American Oceans Campaign* "promotes the preservation and protection of the world's coastal waters, estuaries, bays, wetlands, and oceans . . ." (Fischer & Schwartz, 1996, p. 504). The

American Society of Landscape Architects promotes the purchase and protection "of environmentally threatened lands" and protection "of fragile ecosystems" (from an organizational news release dated February 14, 1994, Case #0241C in this study).

According to the *National Directory of Associations* (Fischer & Schwartz, 1996) these organizations vary in their membership and structure, although they share the common causes described above. The National Audubon Society was founded in 1905 and includes 600,000 members; the organization includes nine regional groups, 40 state groups, and 520 local groups. American Rivers was founded in 1973 and includes 18,000 members. Sierra Club was founded in 1892 and includes 550,000 members; the organization includes 15 regional groups, 58 state groups, and 403 local groups. The Nature Conservancy was founded in 1951 and includes 705,000 members; the organization has 50 state groups. The World Wildlife Foundation was established in 1961 and boasts 1,200,000 members.

The American Oceans Campaign was founded in 1987 and involves 1,000 members. The American Society of Landscape Architects was founded in 1899 and involves 10,500 members. The organization is the professional society of landscape architects, and its purpose is to "promote the advancement and skill in the art of landscape architecture as an instrument in service to the public welfare" (Fischer & Schwartz, 1996, p. 744).

The Property-Owner Frame. The terms identified in the Frame Mapping Method to represent the Property-Owner Frame in the wetlands debate suggest that property-owner advocates are *concerned with the rights of private property owners,*

particularly in the agricultural community; they promote legislative reform in wetlands definition and regulation, and they advocate compensation to landowners such as farmers and ranchers. Again, a review of descriptions of the organizations representing these stakeholders strengthens confidence in the procedures for specifying terms as representative of the particular frame.

The *American Farm Bureau Federation* "analyzes problems of members and formulates action to achieve educational improvements, economic opportunity, and social advancement," according to Fischer & Schwartz (1996, p. 534). The *National Cattlemen's Association* "functions as the central agency for national public information, legislative, and industry liaison for the beef cattle business" (Fischer & Schwartz, 1996, p. 495).

The American Farm Bureau Federation was founded in 1919 and involves 4,000,000 members; the federation includes 50 state farm bureaus. The National Cattlemen's Association was established in 1977 and includes 46 state and 29 beef breed associations "representing 230,000 farmers, ranchers, breeders, and feeders of beef cattle" (Fischer & Schwartz, 1996, p. 495). The National Cattlemen's Association announced in August 1995 its consolidation with the National Live Stock and Meat Board/Beef Industry Council to form the National Cattlemen's Beef Association (organizational memo dated Aug. 24, 1995).

The American Farm Bureau Federation historically and generally has opposed strict production-related controls (Nimmo & Ungs, 1979).

Various comparisons of relative occurrences of the terms by the different types

of stakeholder groups may be made to assess further the relative representation of terms for each group. In this analysis the original text file of the 102 organizational news releases was used to create a separate text file for the Conservationists' and Property-Owners' news releases. In VBPro each file was formatted, then the terms in each file were alphabetized and rank sorted. From the VBPro output files was extracted information on relative frequency, for each term, in each group of news releases. This information is included in Tables 6, 16, 17, 18, and 19. Table 18 lists the terms among the 123 selected key terms that occur more prominently in the news releases from the conservation groups, while Table 19 lists the terms among the selected key terms that occur more prominently in the news releases from the property-owner groups. Tables 18 and 19 list the terms by *difference of term occurrence,* by percentage, in the two groups of news releases.

Inspection of the relative term frequencies reveals that the representative frame terms emerging from the Frame Mapping procedures indeed occur with higher relative frequency in the releases from the group which the term represents. This documentation provides further confidence in the Frame Mapping term specification procedures.

Another set of term coordinates were output in VBMap and used to produce a set of multidimensional configurations showing the relative position of *each of the 15 target advocacy groups* included in the analysis. The 15 groups, it is recalled, are listed in Table 5.

Table 18. High-Frequency Terms Occurring Prominently in News Releases about Wetlands from Conservation Groups

Term[a]	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
River	.703	.000	.703
Rivers	.514	.000	.514
Flood	.366	.011	.355
Natural	.292	.021	.271
Wildlife	.286	.021	.265
Species	.298	.074	.224
Conservation	.286	.063	.223
Floodplain	.218	.000	.218
Water	.494	.294	.200
Watershed	.189	.000	.189
Management	.298	.110	.188
Environmental	.334	.147	.187
Everglades	.180	.000	.180
Endangered	.231	.058	.173
Development	.199	.032	.167
Sound	.177	.016	.161
Projects	.167	.011	.156
Control	.212	.058	.154
Corps	.167	.021	.146
Dams	.144	.000	.144
Society	.144	.005	.139
Project	.132	.000	.132
Protect	.237	.105	.132
States	.180	.053	.127
Bay	.128	.011	.117
Acres	.157	.042	.115
Bird	.119	.000	.119
Threatened	.119	.005	.114
Engineers	.132	.021	.111
Birds	.109	.000	.109
Habitat	.141	.032	.109
Environment	.135	.037	.098
Fish	.116	.021	.095
Ecosystem	.090	.000	.090
Migratory	.083	.000	.083
Ecosystems	.077	.000	.077
Restoration	.087	.011	.076
Area	.112	.037	.075
Levees	.083	.011	.072
Homes	.074	.005	.069
Rare	.067	.000	.067

Table 18. (continued)

Term[a]	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Plants	.083	.021	.062
Earth	.055	.000	.055
Global	.058	.005	.053
Forests	.055	.011	.044
Administration	.090	.047	.043
Lands	.080	.037	.043
Preserve	.074	.037	.037
Pollution	.116	.079	.037
Resources	.116	.079	.037
Future	.067	.032	.035
Damage	.061	.026	.035
Flooding	.045	.011	.034
Restore	.045	.011	.034
Public	.212	.179	.033
Construction	.048	.021	.027
Water	.048	.021	.027
Approach	.051	.026	.025
Plant	.042	.021	.021
Research	.045	.026	.019
Field	.039	.026	.013
Runoff	.045	.032	.013
Protected	.042	.032	.010
Preservation	.051	.042	.009
Preserving	.039	.032	.007
Protection	.186	.179	.007
Loss	.067	.063	.004
Protecting	.045	.042	.003
Study	.035	.032	.003

Note. News releases were obtained from PR Newswire.

[a] Ranked by **difference of term occurrence** (by percentage) in news releases from conservation advocacy groups and property-owner advocacy groups.

[b] Listed in decimals of one percent.

Table 19. High-Frequency Terms Occurring Prominently in News Releases about Wetlands from Property-Owner Groups

Term[a]	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Farm	.006	1.550	-1.544
Farmers	.016	.835	- .819
Wetlands	.488	1.135	- .647
Property	.042	.562	- .520
Rights	.016	.404	- .388
Agriculture	.010	.305	- .295
Regulations	.032	.289	- .257
Legislation	.051	.278	- .227
Private	.083	.310	- .227
Regulatory	.010	.194	- .184
Landowners	.013	.179	- .166
Compensation	.000	.163	- .163
Government	.103	.263	- .160
Issues	.067	.226	- .159
Agencies	.039	.194	- .155
Support	.087	.231	- .144
Legislative	.013	.152	- .139
Wetland	.109	.242	- .133
President	.209	.341	- .132
Policy	.135	.263	- .128
Statewide	.000	.126	- .126
Definition	.003	.116	- .113
Reform	.055	.158	- .103
Agricultural	.029	.126	- .097
Health	.061	.158	- .097
Owners	.003	.100	- .097
Bill	.119	.215	- .096
Ranchers	.000	.095	- .095
Supports	.019	.110	- .091
Land	.173	.263	- .090
Lawmakers	.000	.089	- .089
Regulation	.016	.095	- .079
Balance	.019	.095	- .076
Congress	.077	.152	- .075
Court	.029	.100	- .071
Local	.109	.179	- .070
Economic	.051	.121	- .070
Clean	.087	.152	- .065
Issue	.026	.089	- .063
State	.247	.305	- .058
Federal	.302	.357	- .055

Table 19. (continued)

Term[a]	Occurrence[b] in Conservation Group Releases	Occurrence[b] in Prop.-Owner Group Releases	Difference[b] of Occurrence in Two Groups
Economy	.016	.068	- .052
Congressional	.013	.063	- .050
Programs	.093	.131	- .038
Business	.032	.068	- .036
Policies	.083	.116	- .033
Act	.189	.221	- .032
Laws	.042	.074	- .032
Law	.051	.074	- .023
Impact	.035	.047	- .012
Program	.154	.163	- .009
Benefits	.032	.042	- .010
Practices	.032	.037	- .005
Decision	.032	.042	- .010
Quality	.067	.068	- .001

Note. News releases were obtained from PR Newswire.
[a] Ranked by **difference of term occurrence** (by percentage) in news releases from conservation advocacy groups and property-owner advocacy groups.
[b] Listed in decimals of one percent.

Table 20 shows the term co-occurrence data structure or relative similarity proximities of (1) the 15 identifier terms representing each target group, (2) the 29 Conservation Frame terms, and (3) the 29 Property-Owner Frame terms. In this table the terms and code terms are listed in order of coordinate values along Coordinate 1, which by definition explains the maximum variance in the term co-occurrence data structure. Notably, but not surprisingly, each of the target conservation groups fall out together with similar (all negative) values in Coordinate 1, while all of the property-owner groups also receive similar (all positive) values in Coordinate 1. The Frame Map shown in Figure 8 plots each of the 15 target groups according to the coordinate values for the three coordinates or dimensions listed in Table 20.

Of additional interest is the way the particular frame terms proximate to each of the target groups; this information is shown in Table 20 and summarized in Figure 9, which is the same Frame Map as in Figure 8 but with selected frame terms also plotted for reference.

In Figure 9 the frame terms are indicated with solid points and labeled in boldface type, while the target organizations are indicated in open points and labeled in italics.

Not surprisingly, as the figure shows, the term *birds* locates proximate to the National Audubon Society. *Preserve* and *conservation* are close in location to World Wildlife Fund and Wildlands Conservancy. *Natural* is located near The Nature Conservancy, and *river* is proximate to American Rivers.

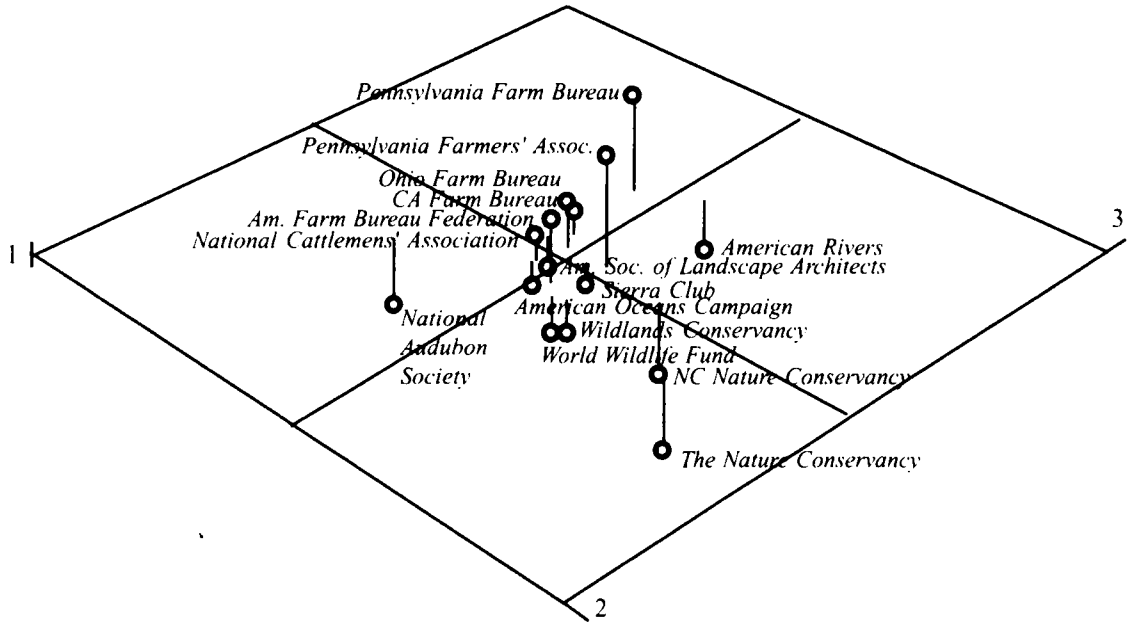
Table 20. Data Structure, Identified in VBMap *.MAP File* Output, for 15 Conservation and Property-Owners Advocacy Groups and Frame Terms from Organizational News Releases

Term	Coordinate 1	Coordinate 2	Coordinate 3
Threatened	-0.47	0.13	0.59
Ecosystems	-0.45	0.20	0.10
Natural	-0.45	0.57	0.07
Endangered	-0.43	0.07	0.62
Ecosystem	-0.41	0.02	0.41
Species	-0.41	0.31	0.01
Rare	-0.39	0.67	-0.12
River	-0.39	0.06	0.70
Habitat	-0.35	0.06	0.13
Wildlife	-0.33	-0.23	0.16
Conservation	-0.30	0.06	0.05
Earth	-0.28	0.09	0.50
Protect	-0.28	0.26	0.21
Watershed	-0.27	0.50	0.01
XC/NAS [Na'l Audubon Soc.]	-0.26	-0.42	-0.10
Acres	-0.26	0.34	-0.01
Birds	-0.25	-0.35	-0.20
XC/NCNC [NC Nature Conservancy]	-0.25	0.33	0.01
XC/TNC [The Nature Conservancy]	-0.25	0.58	-0.11
Forests	-0.24	0.19	-0.08
Migratory	-0.23	-0.03	-0.15
Research	-0.23	0.10	-0.04
Everglades	-0.21	-0.33	0.15
Society	-0.21	-0.35	0.03
Area	-0.20	-0.22	0.14
Fish	-0.20	-0.10	0.40
XC/AR [American Rivers]	-0.20	0.05	0.46
Bird	-0.16	-0.26	-0.25
Protected	-0.16	0.60	-0.09
Project	-0.15	-0.18	0.21
Restore	-0.15	-0.32	0.25
XC/WWF [World Wildlife Fund]	-0.12	0.06	-0.10
Bay	-0.11	-0.17	-0.02
Preserve	-0.11	0.25	-0.03
XC/ASLA [Am. Soc. of L. Arch.]	-0.09	-0.12	0.02
XC/WC [Wildlands Conservancy]	-0.09	0.15	-0.13
XC/SC [Sierra Club]	-0.04	0.02	0.05
XC/AOC [Am. Oceans Campaign]	-0.01	-0.05	-0.06

Table 20. (continued)

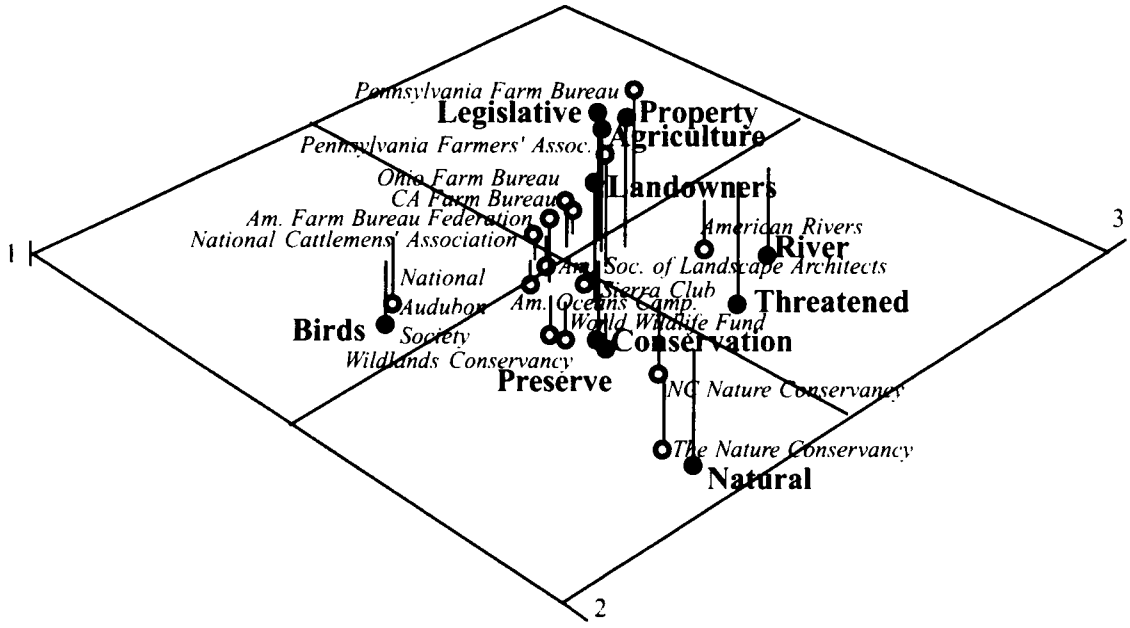
Term	Coordinate 1	Coordinate 2	Coordinate 3
XP/CFBF [CA Farm Bureau]	0.04	-0.01	0.04
XP/NCA [Na'l Cattlemen's Assoc.]	0.06	-0.00	-0.07
Laws	0.12	-0.22	0.23
XP/OFBF [Ohio Farm Bureau Fed.]	0.17	0.02	-0.06
Ranchers	0.18	0.05	-0.08
Wetland	0.18	-0.01	-0.10
Business	0.19	0.41	-0.06
State	0.19	0.17	0.18
XP/AFBF [Am. Farm Bureau Fed.]	0.22	0.02	-0.07
Issue	0.23	-0.04	-0.01
Court	0.26	0.03	-0.04
Support	0.26	0.13	0.05
Congressional	0.27	-0.02	0.24
Law	0.27	-0.14	0.30
Agricultural	0.29	-0.06	0.19
Balance	0.32	0.20	0.06
Private	0.37	0.37	-0.10
Agencies	0.38	0.03	0.14
Regulations	0.38	0.15	-0.07
Owners	0.40	0.07	-0.09
Definition	0.41	0.08	-0.05
XP/PFB [PA Farm Bureau]	0.42	-0.09	0.25
Landowners	0.44	0.26	0.03
Legislation	0.44	-0.00	0.22
XP/PFA [PA Farmers' Assoc.]	0.44	0.13	0.03
Supports	0.46	-0.08	0.16
Lawmakers	0.48	0.05	0.11
Agriculture	0.52	0.01	0.11
Statewide	0.54	0.11	0.11
Compensation	0.55	0.12	-0.06
Legislative	0.56	0.00	0.24
Property	0.57	0.09	0.06
Rights	0.60	0.10	0.06
Farm	0.64	-0.00	0.14
Farmers	0.65	0.07	0.09

Note. Conservation advocacy groups are indicated by identifer terms beginning with *XC*.
Property-Owner advocacy groups are indicated by identifier terms beginning with *XP*.
Three dimensions were specified in the VBMap procedures.
Eigenvalues: 8.2522 3.8688 3.0886
Percentage Extracted Variance Per Factor: 54 25 20
Cumulative Percentage Extracted Variance: 54 80 100



Three-dimensional configuration of 15 target organizations representing conservationists and property owners. (Coordinate values, based on co-occurrence of *code source identifer terms* , were computed with VBMap and are listed in Table 15.) Numerals in figure indicate dimensions.

Figure 8. Frame Map for Relative Positions of 15 Target Conservation and Property-Owner Advocacy Groups Disseminating News Releases on Wetlands



Three-dimensional configuration of 15 target organizations (in italics) representing conservationists and property-owners, shown with 10 selected terms from organizational news releases on wetlands (in boldface). (Coordinate values, based on term co-occurrence, were computed with VBMap and are listed in Table 15.) Numerals in figure indicate dimensions.

Figure 9. Frame Map for Relative Positions of 15 Target Conservation and Property-Owner Advocacy Groups with 10 Selected Frame Terms from Organizational News Releases

The Property-Owner Frame terms *property, agriculture,* and *legislative* locate closest to the Pennsylvania Farm Bureau and Pennsylvania Farmers' Association, and *landowners* is near American Farm Bureau Federation. The locations (shown in Table 20 and summarized in Figure 9) of the frame terms with the groups representing each type of stakeholder *provide strong confirmatory support for the Concept Mapping procedures and the Frame Mapping Method.*

Figure 10 shows the dendogram generated by the group identifier terms for the 15 target groups and the frame terms from both stakeholder frames. This diagram displays the divisions of the frame terms and the organizations they represent clearly and unambiguously. Each Conservation Frame term is clustered with the target conservation organizations, each Property-Owner Frame term clusters with the property-owner organizations, and the two divisions are not connected until last point from origin, confirming the dissimilarity of the term co-occurrences.

Examining Differential Framing

In addressing Research Question 1, the expected differential framing or issue definition by different stakeholder groups was tested for statistically significant difference using the VBPro coding procedures and the SPSS/PC statistical package. The following discussion describes the procedures used in this analysis and the results of the statistical tests, which yielded strong evidence that diverse stakeholders indeed define complex issues quite differently.

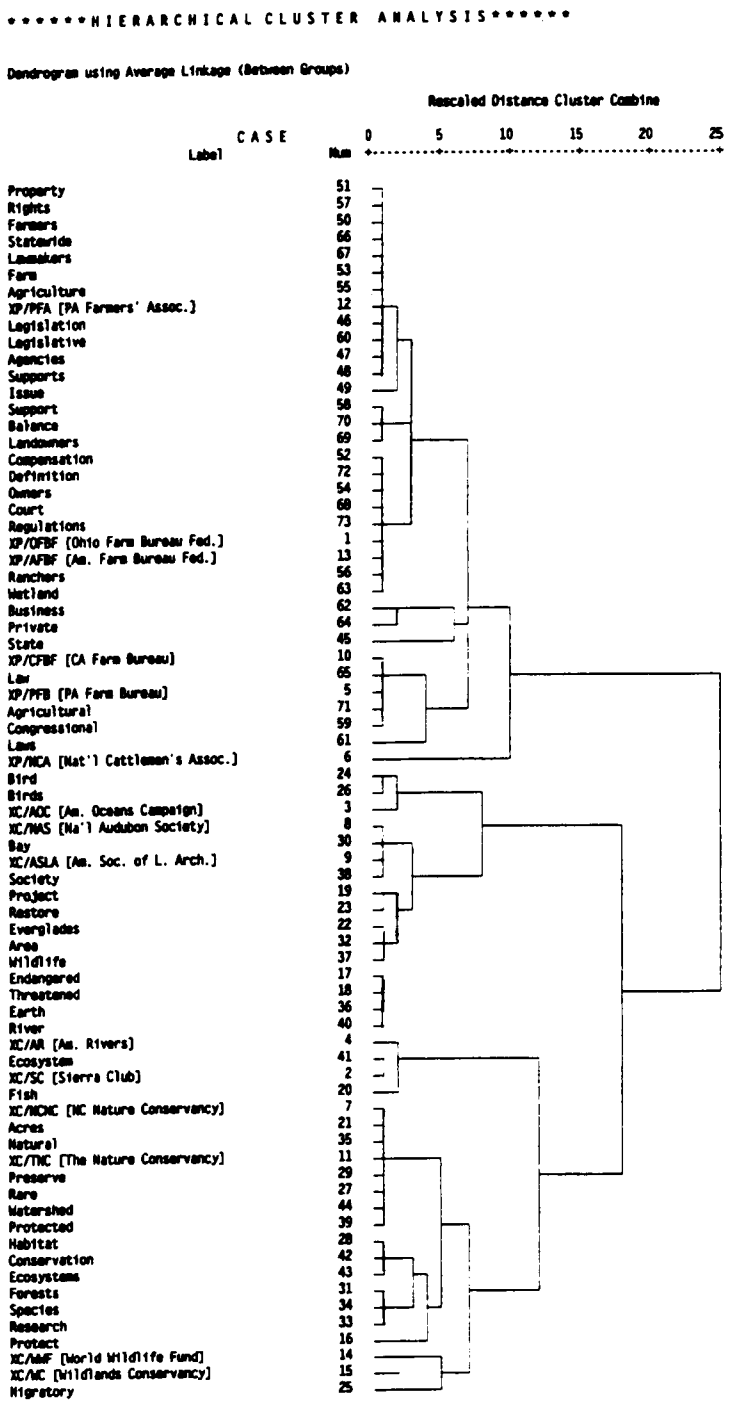


Figure 10. Clustering Dendogram for 29 *Conservation Frame* Terms, 29 *Property-Owner Frame* Terms, and 15 Target Advocacy Group Identifier Code Terms

This stage of the analysis was conducted in two steps: (1) a coded numeric data file was generated through the VBPro coding procedures, and (2) the ASCII file was imported directly into SPSS and used as the basis for *t*-tests for differences in means of the two different groups. The tests measured differences in the occurrence of Conservation Frame terms and Property-Owner Frame terms in the news releases from conservation groups and property-owner groups.

The coded numeric data file was created as follows: (1) A search file was created to specify four categories of terms, representing four variables. As described before, the search file begins with facing arrows, then includes the terms of interest on separate lines, and the file is ended with a hard return. In this search file the four *categories* or *groups* of terms also were divided by facing arrows. The four categories of terms were: (a) the conservationists' identifier term; (b) the property owners' identifier term; (c) the 29 Conservation Frame terms *(river, natural, wildlife, species, conservation,* and so on), which were selected in the procedures described above; and (d) the 29 Property-Owner Frame terms *(farm, farmers, property, rights, agriculture,* and so forth), also elaborated above.

(2) The VBPro program was opened and the coder was called. The formatted file containing the news releases from the conservation and property-owner groups was identified as the file to search. The coder was instructed to search the formatted news release file, in case context, using the four-category search file created in step one above.

(3) The VBPro coder, from these instructions, generated a coded numeric data

file containing 102 rows with five columns of data: case identification number and the frequency, for each case, of the four variables specified by the search file: (a) conservationists' identifier term; (b) property owners' identifier term; (c) Conservation Frame terms; and (d) Property-Owner Frame terms. The first row, for instance, read as follows:

#0007P, 0, 1, 1, 21,

indicating that news release #0007P was not a conservationist release, was a property owner release, contained only one Conservation Frame term, and contained 21 Property-Owner Frame terms.

The SPSS program was then opened, and the program was instructed to read the coded data file as an ASCII file. Freefield variables were specified, and the variables were defined as (1) case identification number (string variable), (2) conservation group (numeric variable), (3) property-owner group (numeric variable), (4) Conservation Frame term frequency (numeric variable), and (4) Property-Owner Frame term frequency (numeric variable). The *t*-tests for independent samples were specified. (The tests are used to compare means between two groups.) Separate *t*-tests were run for the variables Conservation Frame term frequency and Property-Owner Frame term frequency. The two-tailed *t*-tests were assigned a 95% confidence interval.

The results of the *t*-tests were dramatic, and are summarized in Tables 21 and 22.

Table 21. Number of *Conservation Frame* Terms in Organizations' News Releases by Type of Stakeholder Advocacy Group Originating the Releases.

	Conservation Organizations	Property-Owner Organizations
Mean[a]*:*	16.76*	2.16*
SD:	14.43	3.18
n:	58	44

[a]Mean occurrences of *Conservation Frame* terms in news releases from target advocacy groups (n = 102) obtained from PR Newswire database from among all 1987-95 database releases mentioning wetlands (n =1,226).

* $p < .0001$ in two-tailed t-test, $t = 6.58$, $df = 100$.

Table 22. Number of *Property-Owner Frame* Terms in Organizations' News Releases by Type of Stakeholder Advocacy Group Originating the Releases

	Conservation Organizations	Property-Owner Organizations
Mean[a]*:*	4.64*	30.25*
SD:	4.02	19.44
n:	58	44

[a]Mean occurrences of *Property-Owner Frame* terms in news releases from target advocacy groups (n = 102) obtained from PR Newswire database from among all 1987-95 database releases mentioning wetlands (n =1,226).

* $p < .0001$ in two-tailed t-test, $t = -9.78$, $df = 100$.

For the variable Conservation Frame terms, the mean frequencies were 16.76 in conservation organization news releases compared to 2.16 in property-owner organization news releases. Thus, the mean difference between term occurrence in the releases from the two groups was 14.60, which was significant (t = 6.58, 100 df, $p < .0001$).

Similarly and perhaps even more dramatically, for the variable Property-Owner Frame terms, the mean frequencies were 4.64 in the conservation organization news releases compared to 30.25 in the property-owner organization news releases. Thus, the mean difference was 25.61, which also was significant (t = -9.78, 100 df, $p < .0001$).

These data and statistical tests provide positive evidence relating to Research Question 1, which considers whether different stakeholder groups tend to define complex policy issues differentially. The analysis also demonstrates the usefulness of the Frame Mapping Method in detecting and quantifying distinctive frames and in comparing frames from different sources.

The analysis discussed above summarizes the Frame Mapping Method procedures used for specifying, assessing, and confirming an equal number of key terms representing the conservationists and property owners as the relevant stakeholder groups forming the focus of this frame analysis of the wetlands controversies. Further, the measurable distinction between the contrasting stakeholder frames was demonstrated. Having thusly identified the terms to represent the Conservation Frame and the Property-Owner Frame in the wetlands debates, and

having demonstrated both the power of the terms to distinguish distinct frames and the statistically significant difference between the competing stakeholder frames, the framing study reported here proceeded with analysis of relative frame prominence in news coverage of the wetlands issue, using the term specification findings of the Frame Mapping Method.

Frame Analysis of News Coverage

As elaborated in an earlier section, communication researchers and others are interested in studying effects on news media content in general and media framing in particular. Beniger, for instance, places *media framing* as central in what he describes (1987) as "the new process paradigm" (p. S57). The future of communication research lies in "what could justifiably be called a new paradigm of cognitive processing, *media framing,* and active audience engagement in mass communication" [italics added] (Beniger, 1987, p. S57).

Similarly, Shoemaker and Reese (1991) call for new directions of news media studies, which "define the message itself as a *dependent variable"* (p. 8). Factors both inside and outside the media organizations may affect media content, they argue. Influences from **outside** the media organizations that may affect media content "include the *sources of the information* that becomes media content, such as special interest groups, . . . *revenue sources,* such as advertisers and audiences; *other social institutions,* such as business and government; the *economic environment;* and *technology"* (Shoemaker & Reese, 1991, p. 147). Shoemaker and Reese also note

(1991) the *"need to develop precise and valid measures of content"* [italics added] (p. 213).

This study proposes to investigate some of these critical relationships—specifically the relationship between *news source* (from among various competing stakeholders involved in an issue) and *issue frame* presented in the news media. The proposition that selection of news source affects issue frame in news coverage implies that the *more* a particular stakeholder is quoted, the *more* prominently their particular issue frame will be presented in the news media. This study investigates this relationship specifically, as will be elaborated. Additionally, this study demonstrates the application of the Frame Mapping Method to achieve precise and valid measures of media content.

This section will describe the procedures used to investigate these relationships in news media coverage of the complex public policy issue of wetlands. The term specification findings from the Frame Mapping procedures described in the previous section were used to make these analyses.

Planning the Analysis

As elaborated in earlier sections, the topic of wetlands was selected as the policy issue for the focus of this news media frame analysis. The variables that will be investigated specifically include the influence of diverse stakeholders as news sources and the relative prominence of competing frames in news media coverage. The Conservation Frame and the Property-Owner Frame in the ongoing wetlands

policy debates will be compared in the news media coverage over a longterm period. Target advocacy groups representing conservationists and property owners that were included in the Frame Mapping analysis in the previous section will be studied as news sources, and the occurrence of the frame terms specified in the Frame Mapping will be compared as the measurement of relative frame prominence as media content outcome. The influence of issue stakeholders as news sources will be compared at three different levels or conditions of representation: (1) any mention of a target stakeholder organization in the news article, (2) attribution to a target organization representative through indirect or direct quotation, and (3) attribution to a target organization representative as the first directly-quoted news source in the news article. These three conditions provide incrementally increasing levels of source representation in news articles.

News articles distributed by The Associated Press were selected for the focus of this study. Often referred to simply as AP, the Associated Press is the "largest supplier of general interest news to the media worldwide," serving more than 15,000 newspaper and broadcast outlets *(DIALOG Database Catalogue,* 1995, p. 23). Articles distributed by Associated Press are printed and broadcast by media member-subscribers of the not-for-profit cooperative news service. These include 1,700 newspapers and 6,000 broadcast media members in the United States as well as print and broadcast media serving 112 countries. Headquartered in New York City and operating 235 bureaus around the world, the Associated Press employs more than 3,000 full-time reporters, editors, and photographers (Goldstein, 1995).

The Database Search Services department of Hodges Library at The University of Tennessee was consulted relative to the availability of full text of Associated Press news articles. Preliminary exploratory online searches by the information professionals in the library, serving as the search intermediary, indicated that more than 1,600 news articles mentioning *wetlands,* distributed by The Associated Press, were available in full text from the AP News database through the DIALOG service (Jane Row, personal communication). The AP News database includes full text of Associated Press articles (from July 1984 to the present), which are disseminated by the print and broadcast media throughout the United States and the world. Arrangements were made with the Database Search Services to have all of the Associated Press articles mentioning *wetlands* downloaded in ASCII files to disks for subsequent content analysis.

Obtaining and Preparing Data

The Associated Press articles used in this analysis of news media framing were downloaded on two separate occasions through the assistance of the Database Search Services department and the Knight-Ridder Classroom Instruction Program. On May 10, 1995, some 1,617 articles released after July 1, 1984, were downloaded. Some weeks later on August 4, 1995, some 71 articles released from May through July 1995 subsequently were downloaded in order to include 11 full years of news coverage in this analysis. Backup copies of the downloaded articles were made before any analysis was done, and the disks containing the backup files were set aside for

storage in a secure location. The data files then were reviewed. Of the 1,688 total articles downloaded, 223 were eliminated for reasons that will be itemized in detail, leaving a total of 1,465 news articles on wetlands for this news coverage frame analysis.

As mentioned earlier, the breadth of an online search will greatly affect the quantity of specifically applicable articles obtained for any study. In deciding how wide to cast the online search net, the researcher is faced with the virtual choice of whether to obtain too many articles, including some that are not appropriate, or too few—to miss some relevant articles, in other words, by conducting an online search that is too narrow. For this study the decision was made to place no restrictions such as only articles mentioning *wetland* **and** *policy;* such a narrow search would have yielded fewer usable articles, failing to obtain many that would be appropriate in the analysis. Had the online searches involved the term *wetland* as well as *wetlands,* additional articles might have been captured, but they might have focused more on local controversies involving a single wetland area rather than on national wetlands policy issues, which are of interest in this study. In this study, in obtaining the AP news articles as in obtaining the organizational news releases discussed previously, the broad search for all articles that mentioned *wetlands* was bound to yield some articles that did not apply to an analysis of wetlands policy in the United States. Articles about wetlands in other countries are one example.

Decision rules were developed for deletion, before the analysis, of articles among the downloaded set of articles that were inappropriate to this study. Eight

categories of articles were specified as inappropriate for this analysis:

(1) *International.* Articles about wetlands outside the United States were deleted from the data set. (Many such articles were identified with international datelines—those stories filed from Kushiro, Japan; Gabcikovo, Czechoslovakia; Budapest, Hungary; etc. Other articles, though datelined or filed in the United States, focused on wetlands in other countries. An example is a September 11, 1987, article with a Philadelphia dateline reported that Panamanian officials would not accept incinerator ash from Philadelphia, for use in building roads, because the material might pollute Panamanian wetlands. Another example is a May 11, 1985, article carrying a Chicago dateline, which reported on international collaboration efforts to reintroduce the Siberian crane into the wilds of western Asia after its near disappearance from its habitat in India and Iran due to wetlands destruction.) In inspection of the downloaded articles a total of 109 such articles on wetlands in other countries were identified and excluded from the analysis.

(2) *News Summaries.* Summary lists of articles scheduled to be sent over the wire also were deleted from the data set. These lists are sent by AP for information to print and broadcast editors; the lists are not meant for publication or broadcast in news reports but are used by editors in planning (Mark Paxton, personal communication). An example of such an item is the 549-word "Business News Digest" released on November 13, 1992, listing several "top business stories at this hour." In inspection of the downloaded news articles some 17 such entries were identified and excluded.

(3) *Deaths*. Articles reporting deaths were deleted. (Some obituary-like articles were obtained through the search procedure because they reported the death of public figures who had played key roles in wetlands legislation, for instance.) A total of 15 such articles were identified among the downloaded articles and excluded from the analysis.

(4) *Editorials*. Groups of articles that were moved over the wires as "Editorial Roundups" were excluded from the analysis. (These included sets of editorials which included an editorial mentioning *wetlands* from newspapers around the country.) From the downloaded data set 10 such collections were identified and excluded from the analysis.

(5) *Duplicates and retransmissions*. Articles duplicating other articles in the data set were deleted, as were articles later identified by AP with corrections and retransmitted. Some 18 duplicate articles and seven corrected-for-retransmission articles were identified and excluded from the analysis.

(6) *Garble*. Articles containing garble—that is, where transmission obviously was problematic, were deleted from the data set. Some 15 articles were identified and excluded, of which nine would have been excluded on the basis of an additional criterion.

(7) *History*. Articles that were cases of the daily "Today in History" column released by Associated Press, listing important events "On this date" in history were deleted from the sample. (Such listings generally include a single sentence about each event.) One such "Today in History" column, mentioning the passage of wetlands

legislation, was identified and excluded from the analysis.

(8) *Different definition of search term.* Articles containing the search term but only in a different usage or definition of the term, were excluded from the analysis. This potential problem in online searching was discussed in the section on *Computerized Content Analysis* in Chapter III. A June 1, 1989, article on the International Rowing Association varsity eights championship race quoted a Pennsylvania senior stroke named Mark Wetlands. This article was omitted from the analysis on the basis of its different reference of meaning—to a person, rather than to the *places* type of wetlands of interest in this study.

In summary, a total of 223 articles were identified for exclusion from the analysis and deleted by word processing procedures from the set of downloaded news articles prior to the analysis. These included 109 international articles, 17 budgets or schedules, 15 deaths, 10 editorial roundups, 25 duplicates and retransmissions, 15 articles containing garble, two miscellaneous articles (history and different search term definition), and 30 articles dated after the end of June 1995.

The 1,436 usable articles from the May 10 search and the 29 additional usable articles from the August 4 search gave a total data sample of 1,465 articles or cases for this analysis. The articles ranged in date of release by AP from July 12, 1984, to June 27, 1995. The distribution of articles by year is shown in Figure 11. As the figure shows, in the 11 years covered in this study the annual total of articles ranged from a low of 43 in 1984-85 to a high of 220 in 1991-92.

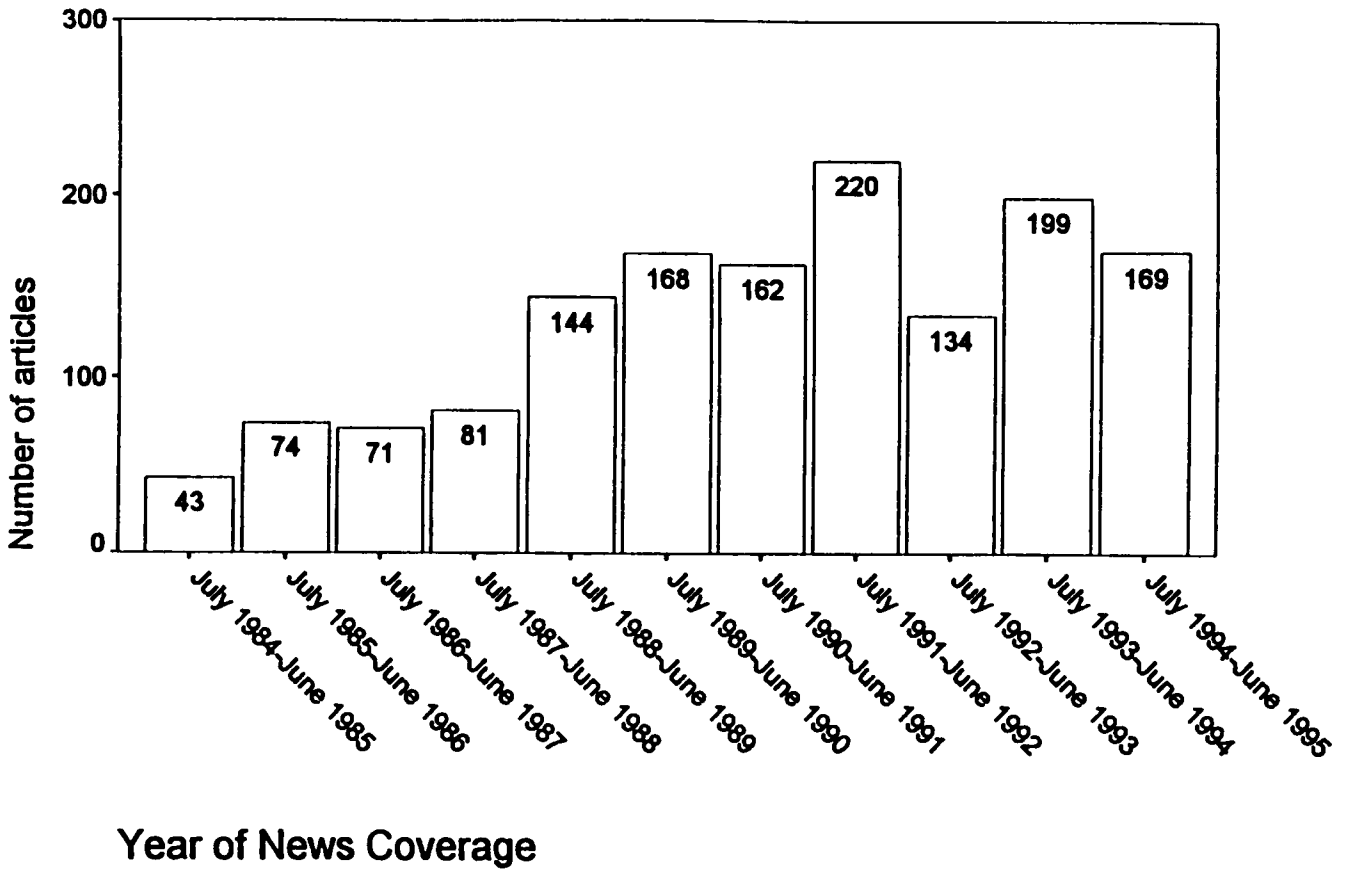


Figure 11. Total Number of Wetlands Articles in Associated Press by Year

The analysis was conducted on the basis of fiscal years (July though June) in order to include 11 full years in the analysis. Analysis on the basis of calendar years, using the available data, would have covered only nine full years.

The individual articles included in the analysis are listed in *Appendix D* by case number, release date and time, number of words in article (information provided by the AP News database), and general topic description.

Using word processing procedures a file was created that contained all the articles downloaded (in multiple files, due to the volume of the material) from the online database service. The 223 articles described above were eliminated from the file with block delete procedures. After elimination of these articles, the remaining data file of 1,465 articles, on which this analysis was conducted, was 2,923 pages long, single-spaced. Case numbers were added to each news article or case. For convenience, the numbers assigned by the database search were retained as case numbers (0001-1617 from the first search and 0001-0071 from the supplemental search, with cases from the *second* search assigned case numbers from 2001-2071 to distinguish them).

Extraneous material was bracketed off. This material included database information, dateline, byline, and AP copyright statements at the end of each article. (As noted previously, the VBPro program will ignore material enclosed in brackets.) It is important, therefore, to check for any extraneous brackets and to remove them, as well as any extraneous pound signs ("#"), which the VBPro program would read as a case number.

It also is important to spell check the entire file. This is a vexingly tedious task with a large volume of text, but a necessary one in computer-assisted content analysis to ensure that a term of interest is not overlooked in the analysis because it is misspelled in an article.

Once the text file was spell checked and the case identification numbers were added and material to be excluded from the analysis was bracketed off, the text file was saved as a generic text file in the VBPro directory. The VBPro program was opened, and the file was submitted to the VBPro formatting procedure for formatting (as described in a previous section). The formatting procedure for this 2,923-page file took about 45 minutes on the IBM Personal Computer 750-P90. The large formatted *.FRM* file also was run in the VBPro alphabetizing procedure, which took one hour. Finally, the frequency ranking procedure was run.

The file output from the alphabetizing procedure was a 419-page document listing alphabetically each of the terms in the 1,465 news releases—from *aback* to *Zwannendael* (a museum in Delaware), along with their frequency of occurrence:

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.
.
AUDUBON, 135
.
.
BUREAU, 231
.
.
.

The file output from the frequency ranking procedure reported "22,590 types" and "757,496 tokens" in the file of AP news articles, or 22,590 different words used

a total of 757,496 times. Frequencies ranged from 24,804 for the term *of* to 1 (with 5,279 terms from *aback* to *zoology* used only once). The report listed terms by frequency of occurrence, also providing relative frequency in decimals of one percent:

OF, 24804, 3.274
TO, 23486, 3.100
AND, 21827, 2.881
.
.
WETLANDS, 4083, 0.529
.
.
CONSERVATION, 1368, 0.181
.
.
SPECIES, 635, 0.084
.
.
LEGISLATION, 572, 0.076
.
.
LANDOWNERS, 314, 0.041
.
.
RIGHTS, 218, 0.029
.
.
.

Frame Prominence and News Sources

In order to address Research Question 2 regarding the relationship between news source and media framing of policy issues, comparisons were made of the relative prominence of Conservation Frame terms and Property-Owner Frame terms in news articles that mentioned or quoted (directly or indirectly) either representatives of target conservation organizations, target property-owner organizations, or both.

The reason for making these comparisons in the three conditions of news source representation (mentioned, quoted indirectly, and first-directly-quoted news source in a news article) is straightforward. It would be expected that a particular stakeholder group's issue frame would be most prominent in news articles that directly quote its representative(s), compared to news articles that quote representatives indirectly, or that simply mention a stakeholder organization. The comparisons allow the exploration of whether these influences occur similarly across organizations. The procedures for making these comparisons and the results of the various comparisons are described below.

Comparisons by Mention of Stakeholder. The following steps were taken to accomplish comparison of frame terms in articles that mentioned either a target conservation group or a target property-owner group:

(1) In a word processing program a search file, containing separate categories with the names of each of the conservation organizations and the names of each of the property-owner organizations, was created. This search file was used in the VBPro search procedure to search, in sentence context, the formatted file of the Associated Press articles (n = 1,465).

The file output by the search procedure included (a) a list of each news article (by case identification number) in which any of the groups were mentioned, (b) the sentences within each case where the target organizations are mentioned, and (c) descriptive summary statistics for the search terms. Target conservation groups mentioned in the news articles were:

National Audubon Society, 73 times
American Rivers, 37 times
Sierra Club, 95 times
World Wildlife Fund, 21 times
Nature Conservancy, 39 times
American Oceans Campaign, 5 times

(The Wildlands Conservancy, American Society of Landscape Architects, and the North Carolina Nature Conservancy were not mentioned.)

Target property-owner organizations mentioned were:

American Farm Bureau Federation, 46 times
California Farm Bureau, 4 times
National Cattlemen's Association, 5 times

(2) A copy of the text file of the news articles was made. Using the search file output, which listed each case in which one of the target groups were mentioned, word processing procedures were used to insert a unique group identifier term in cases or articles that mentioned any of the target conservation groups, and another unique identifier code term was inserted in cases that mentioned any of the target property-owner groups.

(3) A subsequent search of the AP text file (n = 1,465), using these identifier codes as separate search category terms, indicated the frequency of occurrence for the two code terms 239 times in 234 cases or articles. The search output also identified the mention of a target conservation group 186 times and the mention of a property-owner group 53 times (the total of 239 mentions indicating that five of the 234 articles mentioned both types of advocacy groups).

(4) Word processing procedures then were used copy the text file and delete all articles except the 234 cases in which a target advocacy group was mentioned.

(5) A new search file was created with four categories: (a) the code term inserted in articles mentioning conservation groups, (b) the code term inserted in articles mentioning property-owner groups, (3) Conservation Frame terms, and (4) Property-Owner Frame terms.

(6) The VBPro program was opened and the new AP text file (including 234 cases and added code terms designating *mention* of either conservation group or property-owner group) was formatted. The AP text file was submitted to the coding procedure, along with the new search file created in Step 5 above.

(7) The coding procedure created a coded numeric data file with 234 rows (one for each case) and five columns indicating (a) case identification number, (b) frequency of Conservation Group identifier term, (c) frequency of Property-Owner Group identifier term, (d) frequency of all Conservation Frame terms, and (e) frequency of all Property-Owner Frame terms.

(8) The coded numeric data file was opened as a generic text file. The columns were inspected for cases where a "1" occurred in both the second and third columns, indicating mention of both types of advocacy group. In these cases, the "1" in the second column was changed to a "2." In this way the codes in the second column of the file indicated:

0 = Mentioned target conservation advocacy group
1 = Mentioned target property-owner advocacy group
2 = Mentioned both types of groups

(9) This revised coded numeric data file was submitted directly to SPSS for analysis of variance and post hoc tests.

The results of these tests are summarized in Tables 23 and 24. A total of 234 articles that mentioned either target conservation or property-owner organizations, or both types of organizations, were identified. These included 181 articles that mentioned one or more of the target conservation advocacy groups, 48 articles that mentioned one or more of the target property-owner advocacy groups, and five articles that mentioned both types of organizations.

As shown in Table 23a, on the variable of Conservation Frame terms the mean frequencies were (1) 14.59 in news articles that mentioned target conservation groups, (2) 8.15 in news articles that mentioned target property-owner groups, and (3) 12.80 in articles that mentioned target organizations representing both types of stakeholders. One-way analysis of variance of these means, summarized in Table 23b, revealed statistically significant difference ($F_{2,231} = 8.21$, $p < .0001$) among the groups. The table shows that on the variable of Conservation Frame terms the Scheffé test indicated a significant difference between the articles mentioning target conservation organizations and the articles that mentioned the target property-owner groups.

Similar comparisons were made for the relative prominence of Property-Owner Frame terms in news articles that simply mentioned either target conservation organizations, or target property-owner organizations, or both. As shown in Table 24a, mean occurrences of Property-Owner Frame terms were (1) 9.14 in news articles that mentioned target conservation organizations, (2) 23.17 in news articles that mentioned target property-owner organizations, and (3) 19.00 in news articles that mentioned target organizations representing both types of stakeholders.

Table 23a. Number of *Conservation Frame* Terms by Mention of Advocacy Groups in Associated Press Articles on Wetlands

	Mentioning Conservationists	Mentioning Property Owners	Mentioning Both
Mean[a]*:*	14.59_a	8.15_b	12.80_{ab}
SD:	10.74	5.46	1.10
n:	181	48	5

Note. Means in the same row that do not share subscripts differ at $p < .05$ by the Scheffé test.
[a]Mean occurrences of *Conservation Frame* terms in news articles mentioning either target conservation groups, target property-owner groups, or both types of organizations ($n = 234$) from among all 1984-1995 Associated Press articles mentioning wetlands ($n = 1{,}465$).

Table 23b. One-Way Analysis of Variance for Number of *Conservation Frame* Terms by Mention of Advocacy Groups in Associated Press Articles on Wetlands

Source	df	ss	ms	*F*
Between Groups:	2	1577.01	788.51	8.21*
Within Groups:	231	22184.53	96.04	
Total:	233	23761.54		

* $p < .0005$

Table 24a. Number of *Property-Owner Frame* terms by Mention of Advocacy Groups in Associated Press Articles on Wetlands

	Mentioning Conservationists	Mentioning Property Owners	Mentioning Both
Mean[a]*:*	9.14_a	23.17_b	19.00_b
SD:	8.51	9.86	8.12
n:	181	48	5

Note. Means in the same row that do not share subscripts differ at $p < .05$ by the Scheffé test.
[a]Mean occurrences of *Property-Owner Frame* terms in news articles mentioning either target conservation groups, target property-owner groups, or both types of organizations ($n = 234$) from among all 1984-95 Associated Press articles mentioning wetlands ($n = 1{,}465$).

Table 24b. One-Way Analysis of Variance for Number of *Property-Owner Frame* terms by Mention of Advocacy Groups in Associated Press Articles on Wetlands

Source	df	ss	ms	*F*
Between Groups:	2	7700.78	3850.39	49.76*
Within Groups:	231	17876.21	77.39	
Total:	233	25577.00		

* $p < .0001$

One-way analysis of variance of these means, summarized in Table 24b, revealed statistically significant difference among the groups. As noted in Table 24a, the Scheffé test indicated a significant difference ($F_{2,231} = 49.76$, $p < .0001$) between the articles that mentioned target conservation groups and those that mentioned target property-owner groups, on the variable of Property-Owner terms.

The mention of a stakeholder organization in a news article represents the lowest level of representation in news coverage. Representatives of a particular stakeholder organizations also may be quoted, even indirectly, in a news article. This condition would amount to a moderate level of attribution, while to be quoted directly in a news article would amount to the highest of the three levels of attribution explored in this study.

Comparisons by Attribution to Stakeholder. Word-processing, VBPro, and statistical analysis programs also were used to make the comparisons of frame terms among articles that gave indirect or direct attribution to either or both types of the target advocacy groups or their representatives:

(1) A copy of the text file that included all Associated Press articles ($n = 234$) mentioning any of the organizations was made.

(2) The articles were reviewed on an individual basis, and articles that merely mentioned the organizations without giving any attribution to them or their representatives were eliminated by block-delete procedures from the text file. An example is a September 11, 1984 article about three bog turtles being found in western Massachusetts:

> . . . Officials said the discovery was made during systematic field surveys in May and June by Michael Klemens, a researcher with the American Museum of Natural History working under a grant from the Nature Conservancy. . . .

Retained in a 456-page text file for this analysis, therefore, were all the articles in which a target conservation or property-owner organization or their representative was cited (receiving either indirect or direct attribution). The total of 201 articles in this group included 157 articles citing conservation advocacy groups, 40 citing property-owner groups, and four articles citing both types of organizations.

(3) In each of these 201 articles in the new text file was inserted a unique code identifier indicating whether the article cited a conservation organization or a property-owner organization. Both code identifiers were inserted in articles that cited both types of organizations. The text file was then formatted in VBPro.

(4) A search file was created to include four categories of terms: (a) the identifier term for articles citing conservation groups, (b) the identifier term for articles citing property-owner groups, (c) the 29 Conservation Frame terms, and (d) the 29 Property-Owner Frame terms.

(5) Using this search file, the formatted text file of the 201 articles then was searched in VBPro. The VBPro code procedure was used to code, by case, the output of the above search procedure. This created a data file with five rows for each case or article: the case identification number, a "1" or "0" indicating presence or absence of the code for citing a conservation group, a "1" or "0" indicating presence or absence of property-owner group, the total frequency of all of the Conservation Frame terms, and the total frequency of all of the Property Frame terms. For example:

#0015, 1, 0, 16, 8
#0021, 1, 0, 11, 40
#2048, 0, 1, 20, 13
.
.
.

(6) This coded file was opened and inspected for cases in which a "1" occurred in both the second and third columns, indicating citing in the article of both types of organizations. For these cases the numeral "2" was substituted in the second column, to distinguish the three types of articles by the data in each column. (In the data file, then, the second row indicating the presence or absence of citing conservation organization contained either a *0, 1,* or *2,* representing *did not cite, cited,* or *cited both,* respectively.)

(7) This coded data file was then submitted directly to SPSS for one-way ANOVA tests on the mean occurrence of conservation and property frame terms among the three types of articles—articles that cited only conservation groups, articles that cited only property-owner groups, and articles that cited both types of organizations. With freefield variables specified, the ASCII data file was read into SPSS 6.1 for Windows. The variables were defined (using abbreviations), as Case Identification Number, Cited Conservation Group, Cited Property-Owner Group, Conservation Frame terms, and Property-Owner Frame terms. A one-way ANOVA test was specified, using the Scheffé post hoc test, for the dependent variables Conservation Frame terms and Property Frame terms using the Cited Conservation Group as the "factor" or independent variable (where range was defined as 0 to 2 representing *did not cite, cited,* or *cited both).*

The results of these tests are summarized in Tables 25 and 26.

As shown in Table 25a, the mean frequencies of Conservation Frame terms were (1) 15.34 in articles that cited only representatives of target conservation groups, (2) 7.40 in articles that cited only representatives of target property-owner groups, and (3) 13.00 in articles that cited representatives from both sets of target stakeholder organizations. One-way analysis of variance of these means, summarized in Table 25b, showed significant difference ($F_{2,198} = 9.59$, $p < .001$) among the groups of articles. As indicated in Table 25a, the Scheffé test again revealed a significant difference between the articles citing target conservation groups only and the articles citing target property-owner groups only.

Table 26 summarizes the comparisons made for the occurrence of Property-Owner Frame terms in the same articles. The mean frequencies of Property-Owner Frame terms were (1) 9.62 in news articles citing only representatives of target conservation groups, (2) 21.75 in news articles citing only representatives of target property-owner groups, and (3) 21.50 in news articles citing representatives of both types of stakeholder groups. Table 26b presents the results of the one-way analysis of variance of these means, which showed a significant difference ($F_{2,198} = 35.07$, $p < .0001$) among the groups. As shown in Table 26a, the Scheffé post hoc test indicated significant difference on this variable between the articles that cited only target Conservation group representatives and the articles that cited only target Property-Owner group representatives.

Table 25a. Number of *Conservation Frame* Terms by Attribution to Advocacy Groups in Associated Press Articles on Wetlands

	Attribution to Conservationists	Attribution to Property Owners	Attribution to Both
Mean[a]*:*	15.34_{a}	7.40_{b}	13.00_{ab}
SD:	11.23	5.40	1.15
n:	157	40	4

Note. Means in the same row that do not share subscripts differ at $p < .05$ by the Scheffé test.
[a]Mean occurrences of *Conservation Frame* terms in news articles with attribution to (quoting directly *or* indirectly) representatives of either target conservation groups, target property-owner groups, or both types of organizations ($n = 201$) from among all 1984-1995 Associated Press articles mentioning wetlands ($n = 1{,}465$).

Table 25b. One-Way Analysis of Variance for Number of *Conservation Frame* Terms by Attribution to Advocacy Groups in Associated Press Articles on Wetlands

Source	df	ss	ms	*F*
Between Groups:	2	2010.56	1005.28	9.59*
Within Groups:	198	20758.71	104.84	
Total:	200	22769.26		

* $p < .001$

Table 26a. Number of *Property-Owner Frame* Terms by Attribution to Advocacy Groups in Associated Press Articles on Wetlands

	Attribution to Conservationists	Attribution to Property Owners	Attribution to Both
Mean[a]*:*	9.62_a	21.75_b	21.50_b
SD:	8.96	6.33	6.81
n:	157	40	4

Note. Means in the same row that do not share subscripts differ at $p < .05$ in the Scheffé test.
[a]Mean occurrences of *Property-Owner Frame* terms in news articles with attribution to (quoting directly *or* indirectly) representatives of either target conservation groups, target property-owner groups, or both types of organizations ($n = 201$) from among all 1984-95 Associated Press articles mentioning wetlands ($n = 1{,}465$).

Table 26b. One-Way Analysis of Variance for Number of *Property-Owner Frame* Terms by Attribution to Advocacy Groups in Associated Press Articles on Wetlands

Source	df	ss	ms	*F*
Between Groups:	2	5039.92	2519.96	35.07*
Within Groups:	198	14225.57	71.85	
Total:	200	19265.49		

* $p < .0001$

Comparisons by Direct Attribution to Stakeholder. Similar procedures were employed in making comparisons of relative prominence of Conservation Frame terms and Property-Owner Frame terms in Associated Press articles that *directly-quoted first* representatives of either the target conservation groups or the target property-owner groups:

(1) The text file consisting of the 201 articles in which representatives of any of the target organizations were *cited at all* was reviewed for identification of those articles in which representatives of either class of organizations was *quoted first* in the article as the news source. A total of 64 cases or articles were identified in which the first quoted news source was a representative of one of the target stakeholder groups such as National Audubon Society or the American Farm Bureau Federation. Out of 64 total cases, the conservation groups were quoted first in 57 cases while the property-owner groups were quoted first in seven cases.

(2) The text files of the 57 and seven cases identified above were marked with either a conservation identifier term or a property-owner identifier term, depending on which group was quoted first in the article. Other articles in the text file were deleted. Then a search file was created which included four search categories:

(a) the conservationists-quoted-first identifier term,
(b) the property-owners-quoted-first identifier term,
(c) the 29 Conservation Frame terms,
(d) and the 29 Property-Owner Frame terms.

(3) In VBPro the formatted text file including the 64 appropriate articles was searched by the new search file to create a coded file that could be submitted directly to the statistical analysis program. The coded file contained for each article the case

identification number, a "1" or "0" indicating presence or absence of the conservationist-quoted-first code term, a "1" or "0" indicating the presence or absence of the property-owner-quoted-first code term, the frequency of all the Conservation Frame terms, and the frequency of all the Property-Owner Frame terms:

#0043, 1, 0, 10, 22
#0114, 1, 0, 19, 8
#0146, 1, 0, 38, 1
.
.
.
#1617, 1, 0, 11, 2

(4) This coded file was submitted to SPSS to compare the means in the variables mentioned above between those articles that quoted conservationists first and those articles that quoted property-owner advocates first.

The results of these tests are presented in Tables 27 and 28. Table 27 shows the mean frequencies of Conservation Frame terms were (1) 15.58 in news articles in which representatives of target conservation groups were directly quoted first and (2) 5.00 in news articles in which representatives of target property-owner groups were directly quoted first. These groups were significantly different ($t_{34.97} = 4.64$, $p < .05$) in the t-test of means from independent samples.

As shown in Table 28, the mean frequencies of Property-Owner Frame terms were (1) 7.26 in news articles in which representatives of target conservation groups were quoted first and (2) 21.86 in news articles in which representatives of target property-owner groups were quoted first. Again, the t-test revealed significant difference ($t_{62} = -4.26$, $p < .001$) of means between the two groups of articles.

Table 27. Number of *Conservation Frame* Terms by Direct Quotation of Conservation or Property-Owner Group Representative in Associated Press Articles on Wetlands

	Quoted Conservationists	Quoted Property Owners
Mean[a]*:*	15.58*	5.00*
SD:	13.82	3.61
n:	57	7

[a]Mean occurrences of *Conservation Frame* terms in news articles in which the *first direct quote in the article* is attributed to a representative of either a target conservation group or a target property-owner group ($n = 64$) from among all 1984-95 Associated Press articles mentioning wetlands ($n = 1{,}465$).

* $p < .001$ in two-tailed t-test, $t = 4.64$, $df = 34.97$. (*Degrees of freedom* adjusted from 62 for unequality of variances based on Levene's Test for Equality of Variances in which $F = 6.114$, $p < .05$).

Table 28. Number of *Property-Owner Frame* Terms by Direct Quotation of Conservation or Property-Owner Group Representative in Associated Press Articles on Wetlands

	Quoted Conservationists	Quoted Property Owners
Mean[a]*:*	7.26*	21.86*
SD:	8.40	9.86
n:	57	7

[a]Mean occurrences of *Property-Owner Frame* terms in news articles in which the *first direct quote in the article* is attributed to a representative of either a target conservation group or a target property-owner group (n = 64) from among all 1984-95 Associated Press articles mentioning wetlands (n = 1,465).

* $p < .001$ in two-tailed t-test (t = -4.26, df = 62).

Comparisons of relative frame prominence as indicated by frame term occurrences, therefore, were made at three levels or conditions of representation in the news articles—first in all of the articles in which the target organizations were mentioned, then in articles in which organizational representatives were cited at all (that is, quoted either indirectly or directly), and finally in articles in which organizational representatives were cited as the first directly-quoted source in the articles. The results of these tests provide strong evidence for the influence of news source on issue frames in the news media.

Frame Changes Over Time in News Coverage

It is recalled that Research Question 3 is concerned with whether competing issue frames in news media coverage will change systematically over time. The terms specified in the Frame Mapping procedures described in the early sections of this chapter are used to address this research question.

The length of time covered by this study, 11 years, allows for comparison of relative frame prominence in news coverage at different levels of analysis. For instance, comparisons can be made on an annual basis as well as for the total time period.

The procedures for making these comparisons are similar to those described earlier in this chapter. The VBPro search and coding procedures were used to create a new numeric data file listing the frequency of both Conservation Frame terms and Property-Owner Frame terms for each news article or case. It is recalled that in the

numeric data files each row represents an individual case. Word processing procedures were used to add a column in each row in the numeric data file, and in this column was entered a numeral corresponding to the date of the particular article or case. Various date and time formats in SPSS produce sortable data *(SPSS 6.1 Syntax Reference Guide,* 1990). In this particular case, a numeral from 1 to 11 was entered, signifying publication in 1984-85 as the first year of the study, 1985-86 as the second year, and so on through 1994-95 as the 11th year covered in this the study.

The revised numeric data file, with addition of publication date, was submitted directly to SPSS. Frequencies for both the Conservation Frame terms and Property-Owner Frame terms were derived for each annual period to accommodate comparisons of relative frame prominence in news coverage over time. The results of this analysis are discussed in the following section.

Figure 11 and Table 29 show the total number of articles devoted to the topic in each of the 11 years. In 1984-85 (July-June) Associated Press released 43 articles on wetlands, representing almost one article per week. Coverage of the topic generally increased over the following seven years and remained high. In 1985-86, for instance, AP released 74 articles on the topic. Coverage was about the same in 1986-87 at 71 articles, then slightly higher in 1987-88 at 81 articles. The number of news articles grew to 144 in 1988-89, and 168 in 1989-90, remaining about the same at 162 in 1990-91.

Table 29. Summary Descriptive Statistics for Occurrences of Frame Terms in News Articles on Wetlands

		Conservation Frame Terms		*Property-Owner Frame* Terms	
Year	*n*	Mean/Article	Sum	Mean/Article	Sum
1984-85	43	8.14	350	5.51	237
1985-86	74	11.20	829	10.73	794
1986-87	71	11.58	822	8.03	570
1987-88	81	10.93	885	5.56	450
1988-89	144	8.54	1230	5.50	792
1989-90	168	10.10	1697	7.81	1312
1990-91	162	8.68	1406	13.07	2120
1991-92	220	7.06	1554	8.68	1910
1992-93	134	8.25	1106	8.10	1086
1993-94	199	9.30	1850	9.22	1835
1994-95	169	7.83	1323	14.94	2526
Total	1465		13052		13632
Average		8.91		9.31	

The period 1991-92 was the peak period of news coverage on wetlands, by frequency of articles, with 220 Associated Press articles devoted to the topic. Coverage remained high the remaining years included in this study, with 134 articles in 1992-93, 199 in 1993-94, and 169 in 1994-95.

Considering the 11-year period in total, the competing Conservation Frame and Property-Owner Frame received similar amount of coverage in Associated Press, measured by the relative prominence of the frame terms specified to represent each stakeholder frame. As shown in Table 29, over the 11-year period some 13,052 Conservation Frame terms appeared in the Associated Press articles on wetlands, compared to 13,632 Property-Owner Frame terms. (This comparison seems reasonable, given the fact that an equal number of terms were specified through rigorous methods to represent each frame.)

It is the fluctuation of frame prominence within the total time period, from one year to another, that is a matter of even more interest in investigating news coverage over time. These fluctuations are represented in Figures 12 and 13 and also summarized in Table 29. Figure 12 shows that the Conservation Frame, measured by the sum of frame terms, was more prominent in the wetlands news coverage in Associated Press each year from 1984-85 until 1990-91, in which year the Property-Owner Frame received more prominence. Terms from the Property-Owner Frame also occurred with higher incidence than terms from the Conservation Frame in 1991-92.

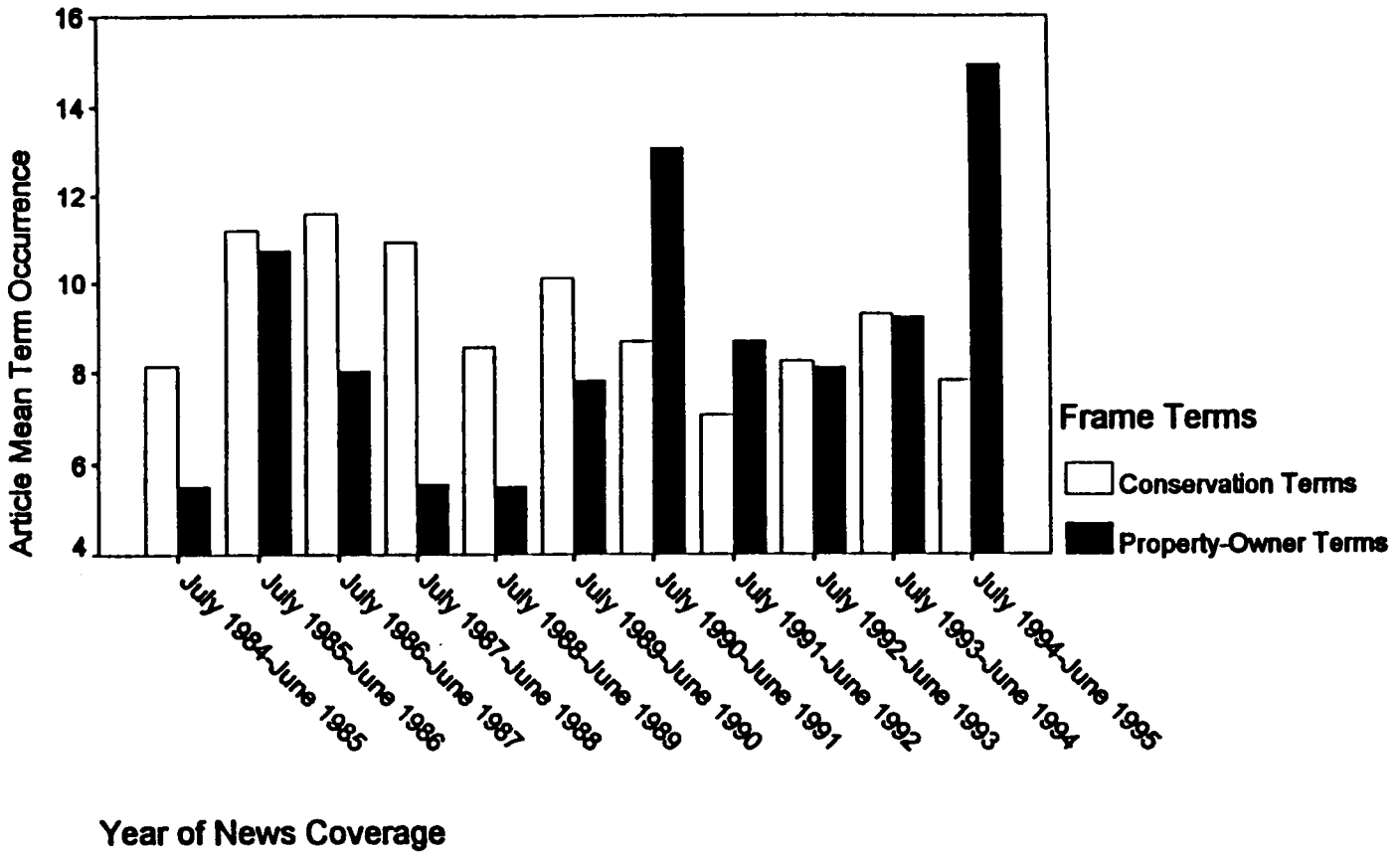


Figure 12. Mean Frequency Per Article of *Conservation Frame* Terms and *Property-Owner Frame* Terms in Associated Press Articles by Year

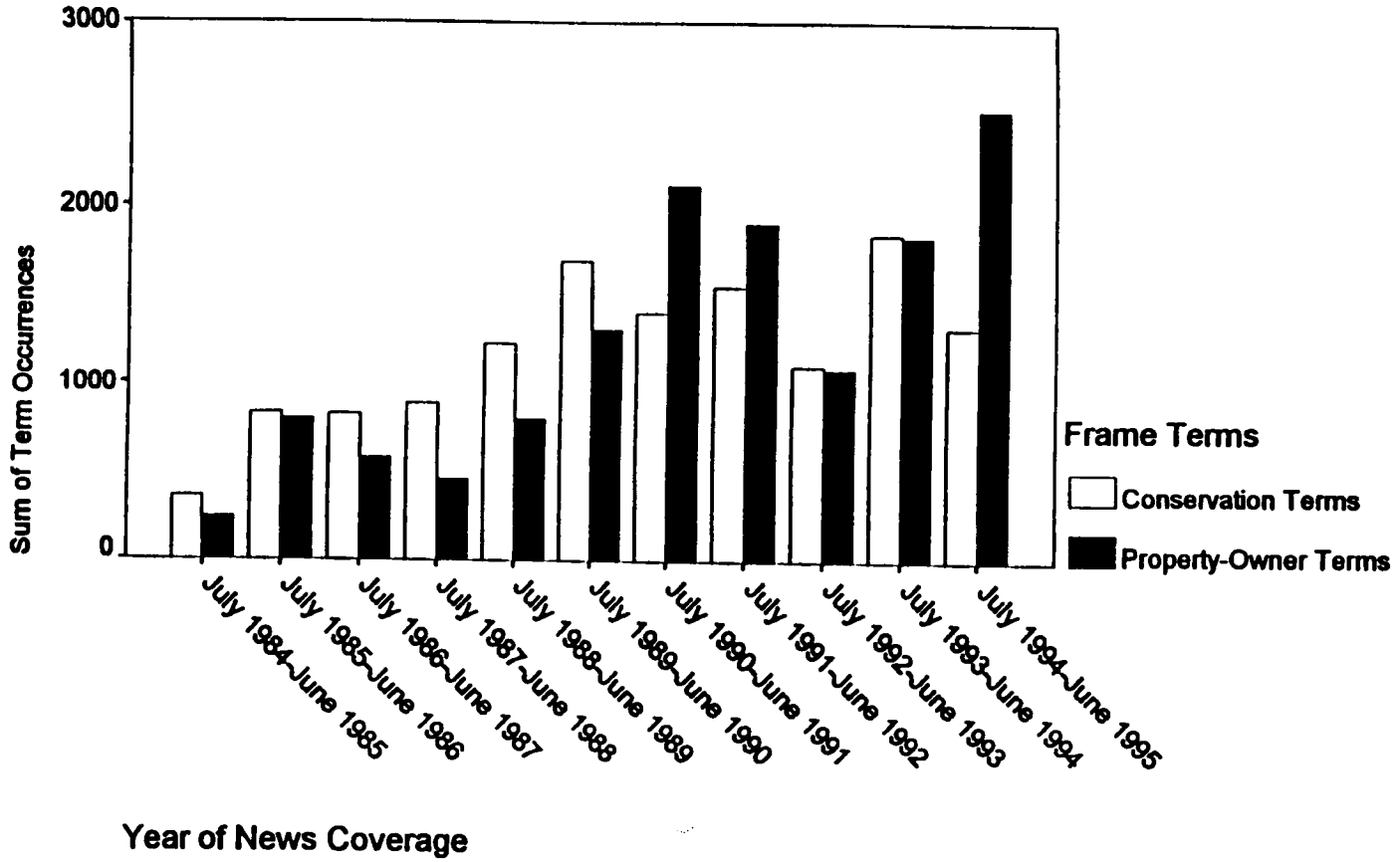


Figure 13. Total Occurrence of *Conservation Frame* Terms and *Property-Owner Frame* Terms in Associated Press Articles by Year

In 1992-93 and 1993-94 terms from the competing frames occurred with similar frequency in the news articles, while in 1994-95 the Property-Owner Frame terms greatly outnumbered the Conservation Frame terms. The total frequencies of term occurrence for the stakeholder frames in each year are listed in the fourth column and sixth columns of Table 29. For instance, in 1984-85 the 43 Associated Press news articles mentioning wetlands included 350 Conservation Frame terms and 237 Property-Owner Frame terms. By contrast in 1994-95, the last year of coverage investigated in this study, the 169 Associated Press news articles mentioning wetlands included 1,323 Conservation Frame terms and 2,526 Property-Owner Frame terms.

The "ebb and flow" (to recall Gamson's discussion) of frame prominence are perhaps even more dramatic in comparisons of average frame term occurrences per article each year. These comparisons are summarized in Figure 12 as well as in Table 29 in the third and fifth columns. As Figure 12 shows, the average frame term occurrence per news article on wetlands was higher for the Conservation Frame than for the Property-Owner Frame from 1984-85 each year until 1990-91 and 1991-92 when the mean occurrence of Property-Owner Frame terms increased dramatically. For the competing stakeholder frames the average frame term occurrence per article was similar in 1992-93 and 1993-94. An obvious shift occurred in 1994-95 when the average frame term frequency for the Property-Owner Frame far overshadowed the average frame term frequency for the Conservation Frame.

These shifts are summarized in even more detail in Table 29. For instance, in 1984-85 the average occurrence per news article was 8.14 Conservation Frame terms

and 5.51 Property-Owner Frame terms, compared to 7.83 and 14.94, respectively, in 1994-95.

These findings provide positive evidence for systematic change over time of frames in news coverage. These measurable shifts in relative prominence of competing stakeholder issue frames suggest a number of potential explanations that merit further consideration and future study, as will be elaborated in a later section. Notably, the comparisons also illustrate the utility of the findings of the Frame Mapping Method in studies of news media framing.

For reference, portions of exemplar news articles making up the sample in this study are provided in *Appendix E.*

Relative to addressing the general question of who frames the news, it also is of interest to identify from among all the news articles (n = 1,465) in the study (1) the articles most prominently representing the Conservation Frame, (2) the articles most prominently representing the Property-Owner Frame, (3) the articles most *purely* representing the Conservation Frame, and (4) the articles most *purely* representing the Property-Owner Frame. Development of a *Conservation Frame Index* and a *Property-Owner Frame Index* will allow for rank ordering of articles by prominence—that is, raw frequency—of frame terms. Development of a *Conservation Frame Purity Index* and a *Property-Owner Frame Purity Index* will be elaborated in discussion of articles representing each frame most purely. Creation of such indices allow the researcher to investigate the text in additional ways, as will be shown.

Indexing Articles by Frame Prominence and Purity

The term selection procedures of the Frame Mapping Method allow the researcher to identify, from among enormous amounts of text, those cases that most prominently or most purely represent one frame or another. Comparisons of this sort will be elaborated in the following discussion on construction of a four separate indices—the *Conservation Frame Index, Property-Owner Frame Index, Conservation Frame Purity Index,* and *Property-Owner Frame Purity Index.*

Conservation Frame Index. Using the frame terms selected initially in this analysis to represent the Conservation Frame and the Property-Owner Frame, this analysis proceeded by ranking the news articles by prominence of the Conservation Frame and by prominence of the Property-Owner Frame. To identify which of the 1,465 Associated Press articles used the Conservation Frame terms most frequently, the following procedures were completed:

(1) A search file was created in a word processing program consisting of the 29 Conservation Frame terms.

(2) The VBPro program was opened and the formatted file of all the Associated Press articles was submitted to the search function using the 29-term search file.

(3) The VBPro code procedure then was used to search the AP articles by the 29-term search file, creating a data file listing for each article the case identification number and frequency of occurrence in that article of any and all the 29 conservation-frame terms:

#0001, 2
#0002, 2
#0003, 16
.
.
.
#2062, 1

(4) The coded numeric data file then was used to sort articles by frequency to yield a list of articles ranked by frequency of occurrence of the Conservation Frame terms:

#1494, 65
#1502, 56
#0904, 53
.
.
#2055, 1
#2062, 1

As Tables 30 and 31 illustrate, this type of sorting allows the researcher to identify and compare the articles that should be, according to the procedures illustrated in this study, among the cases most prominently representative of each frame. The tables allows for inspection to confirm the validity of the frame specification procedures. The news articles were ranked by the frequency of Conservation Frame terms to form Conservation Frame Index. The rankings are listed in *Appendix F.* Of the total 1,465 news articles in the overall analysis, some 1,356 contained at least one term from the Conservation Frame, with occurrence ranging from a maximum frequency of 65 to a minimum of one.

Table 30 provides the lead paragraph of articles with the highest occurrence of Conservation Frame terms.

Table 30. Associated Press Articles on Wetlands with Highest *Conservation Frame Index* Scores

Conservation Frame Terms	Property-Owner Frame Terms	First Paragraph of Article[a]
65	11	"Ducks don't vote, eagles don't turn a profit, whales can't bring short-term capital gains, manatees never have to meet a payroll, hairy-nosed wombats are underachievers, Kirtland's warblers are ineffective against high interest rates and no pearly-eyed thrasher of record ever licked a Communist." (Case #1494, released June 1, 1986 13:37 EDT, datelined Washington.)
57	16	"Draining the grassy waters of the Everglades made the dream of Florida living come true for millions of people. Now, the state is trying to turn back the tide of its history to prevent a nightmare—a people-packed desert." (Case #1502, released May 4, 1986 22:51 EDT, datelined Everglades National Park, Fla.)
53	5	"In 1984, the cameras rolled as Gov. Bob Graham hefted the first shovelful of dirt in a historic project to fill a canal and rebuild the river it replaced." (Case #0904, released Oct. 15, 1990 11:04 EDT, datelined Okeechobee, Fla.)
46	5	"During the last ice age about 16,000 years ago, when mammoths and mastodons roamed Pennsylvania, the boulders and gravel from retreating glaciers filled an ancient stream and created a 13-mile-long expanse of water, waterlilies and waterfowl." (Case #1118, released Nov. 26, 1989 23:33 EST, datelined Geneva, Pa.)
45	2	"A conservation group says the Columbia and Snake river system is the most endangered in North America, with more than 200 species of fish imperiled by dams and development in Oregon, Washington and Idaho." (Case #0605, released April 8, 1992 14:17 EDT, datelined Washington).
43	2	"The Missouri and Mississippi Rivers, which cut 4,500 miles through the nation's heartland and occupy a unique place in America's heritage, are among the 10 most endangered rivers, an environmental group said today." (Case #0197, released April 19, 1994 00:58 EDT, datelined Washington.)
42	2	"The Columbia and Snake river system, where hundreds of Northwestern fish species are imperiled by dams and development, heads a conservation group's annual list of North America's most endangered rivers." (Case #0606, released April 8, 1992 01:07 EDT, datelined Washington.)

Table 30. (continued)

Conservation Frame Terms	Property-Owner Frame Terms	First Paragraph of Article[a]
41 15:02	2	"Decades of pollution and emphasis of navigation over nature have landed the mighty Missouri and Mississippi on an environmental group's list of the 10 most endangered rivers." (Case #0196, released April 19, 1994 EDT.)
41	6	"During the 3 years John Turner was its director, the U. S. Fish and Wildlife Service added 60 refuges and 1 million acres of land to the National Wildlife Refuge System." (Case #0419, released May 3, 1993 02:55 EDT, datelined Atlanta.)
40	17	"Paul Wiegman picks his way, hawk-like, through a primeval-looking swamp in north-central Pennsylvania, searching the eerie expanse of water, pointed tree stumps and knee-high grasses for an inconspicuous little plant only a botanist could love." (Case #1482, released Sept. 28, 1986 13:32 EDT, datelined Hazel Hurst, Pa.)
38	1	"It's a little past sunrise. The shimmering waters of Laguna Madre extend for mile after mile of golden ripples." (Case #0146, released July 31, 1994 13:59 EDT, datelined Arroyo City, Texas.)
38	1	"Oregon's Klamath River is the most endangered river in the nation because of a proposed power project that threatens 'one of the nation's outstanding whitewater recreational rivers,' an environmental group said Wednesday." (Case #1023, released March 21, 1990 17:25 EST, datelined Washington.)
38	18	"Millions of acres of new protective wildlife cover are being planted under the government's Conservation Reserve Program, or CRP, a landmark move to help protect the nation's most fragile agricultural land from erosion by water and wind." (Case #1369, released Dec. 27, 1987 15:56 EST, datelined Washington.)

[a] Shown with case number, date of release, and dateline.

Table 31. Associated Press Articles on Wetlands with Highest Occurrence *Property-Owner Frame Index* Scores

Property-Owner Frame Terms	Conservation Frame Terms	First Paragraph of Article[a]
53	16	"Declaring an assault on arrogant government, the House approved a bill today requiring federal agencies to compensate landowners for restrictions that protect wetlands and endangered species." (Case #0075, released March 3, 1995 13:46 EST, datelined Washington).
48	19	"In its most far-reaching assault yet on federal regulations, the House passed a bill Friday that would allow property owners to seek billions of dollars for losses caused by restrictions on environmentally sensitive land." (Case #0069, released March 3, 1995 17:24 EST, datelined Washington.)
47	19	"Property owners could seek billions of dollars for losses caused by restrictions on the use of environmentally sensitive land under a bill passed by the House on Friday." (Case #0070, released March 3, 1995 17:05 EST.)
47	15	"Plans by an elderly couple in Maine to sell some oceanfront property went awry when part of it was declared a wetland." (Case #0080, released March 2, 1995 22:22 EST.)
46	2	"Environmentalists attacked the Bush administration for siding with a property owner seeking compensation for obeying an anti-erosion ruling that barred him from building homes on his land." (Case #0671, released Jan. 4, 1992 02:26 EST, datelined Washington.
45	20	"They log the rainy Pacific Northwest forests, ranch on the gutsy plains, till the rolling Pennsylvania farmlands and fish the marshy Carolina coast. They work closely with nature, often on the edge of America's wilderness. But members of the growing Wise Use Movement—a network of groups opposed to most government regulation of private land—would sooner die than call themselves environmentalists." (Case #0008, released May 8, 1995 11:46 EDT, datelined Waterford, Pa.)
41	8	"On the eve of congressional debate over a far-reaching bill on property rights, the Clinton administration is voicing strong opposition to a proposal that requires compensating landowners for losses that result from federal actions." (Case #0084, released March 2, 1995 02:26 EST, datelined Washington.)

Table 31. (continued)

Property-Owner Frame Terms	Conservation Frame Terms	First Paragraph of Article[a]
40	11	"The rich soil and sloughs of Kingsbury, County, S.D., are the stuff of Americana, made famous through the Little House on the Prairie books. Now that part of the country is the focal point of a growing rebellion by farmers over the government's regulation of wetlands." (Case #0021, released April 15, 1995 11:26 EDT, datelined Washington.)
40	15	"The deregulation-minded House wants to compensate people when environmental restrictions devalue their property, but the sentiment is not as clear in the Senate." (Case #0063, released March 4, 1995 00:54 EST, datelined Washington.)
40	7	"The Senate approved the 1990 farm bill Thursday, sending the president legislation that clears the way for crop subsidy cuts and gives the farmers new rules for conserving their land." (Case #0892, released Oct. 25, 1990 20:53 EDT, datelined Washington.)
40	11	"When the 101st Congress begins work on a farm bill next year, lawmakers will face the task of meshing agricultural and environmental policies." (Case #1251, released Nov. 20, 1988 14:38 EST, datelined Washington.)
36	1	"The moral lapses of the 1980s were not confined to executive suites, trading pits or political backrooms—there also was backsliding in the cornfield, farm observers say." (Case #0811, released May 9, 1991 13:25 EDT, datelined North Branch, Minn.)

[a] Shown with case number, date of release, and dateline.

As shown in Table 30, the news article identified through these procedures as having the highest score in the Conservation Frame Index appears to focus quite narrowly on the issue as salient to the conservationist stakeholder: "Ducks don't vote, eagles don't turn a profit, whales can't bring short-term capital gains, manatees never have to meet a payroll, . . . " Review of the articles identified by the procedures as the most prominent in representing a particular frame provides support for the validity of the frame analysis methods.

Property-Owner Frame Index. The procedures described above were repeated with the 29 terms in the Property-Owner Frame to create a list of articles ranked by frequency of occurrence of Property-Owner Frame terms:

#0072, 53
#0073, 53
#0074, 53
.
.
#1613, 1
#1616, 1

The two lists created by these procedures essentially indexed the news articles by prominence of Conservation Frame and Property-Owner Frame.

The news articles used in this analysis were ranked by their occurrence of Property-Owner Frame terms for the Property-Owner Frame Index listed in *Appendix G*. Some 1,370 articles among the total 1,465 articles considered in the overall analysis contained at least one occurrence of a Property-Owner Frame term. The frequencies in individual articles ranging to 53. Table 31 provides the lead paragraph of the Associated Press articles that with the highest incidence of Property-Owner

Frame terms. The ability of these procedures to identify frames within text and measure so precisely the relative prominence of frame representation in news media content strengthens confidence in the construct validity of these techniques.

As indicated in Table 31, the article identified by these procedures as having the highest score in the Property-Owner Frame Index focuses on the issue salient to property-owners: "Declaring an assault on arrogant government, the House approved a bill today requiring federal agencies to compensate landowners for restrictions that protect wetlands and endangered species."

Descriptive statistics for the two frame indices are remarkably similar, with Conservation Frame terms occurring in a total of 1,356 of the 1,465 articles, while Property-Owner Frame terms occurred in a total of 1,370 of the articles. As noted previously, Conservation Frame terms occurred in frequencies up to 65 per article, while Property-Owner Frame terms occurred in frequencies up to 53.

	Conservation Frame terms	*Property-Owner Frame* terms
Mean	9.592	9.924
Median	7.000	7.000
Mode	1.000	1.000

Inspection of the selections from articles identified to represent each stakeholder frame, presented in Tables 30 and 31, offer compelling and convincing evidence for the precise and valid measurement capability of the VBPro- and VBMap-based Frame Mapping Method.

To consider the question of *who frames the news* the top news articles in this index were examined with respect to *who is quoted* and *how stakeholder perspectives are presented.*

Not surprising, representatives of target conservation groups were prominent as news sources in articles scoring highest in the Conservation Frame Index. Similarly, representatives of target property-owner groups frequently were cited as news sources in high-scoring articles in the Property-Owner Frame Index. It would be anticipated that each stakeholder perspective would be presented most articulately and passionately in the articles highest in the corresponding issue frame index. As the following examples illustrate, these expectations are confirmed handily.

A variety of news sources are found in the articles scoring highest in this index, including representatives of conservation organizations such as the National Audubon Society, World Wildlife Fund, American Rivers, and The Nature Conservancy. Related organizations such as Defenders of Wildlife, the Everglades Coalition, and the National Wildlife Federation are also represented among quoted news sources in these articles, as are a variety of state and national government officials, agency representatives, and legislators. Florida Governor Bob Graham is quoted in articles scoring high in the Conservation Frame Index, as are representatives of the Environmental Protection Agency, the Soil Conservation Service, the Fish and Wildlife Service, and the Corps of Engineers.

It is not surprising that articles scoring highest in the Conservation Frame Index quote as news sources persons such as Russell Train, representative of the World Wildlife Fund; Brien Culhane, representative of the Wilderness Society and the Everglades Coalition; an endangered species specialist with the National Audubon Society; Kevin Coyle, president of American Rivers; and William Blair, president of

The Nature Conservancy. Also quoted are a number of research scientists, such as Christopher Onuf with the National Wetlands Research Center and Ken Dunton with the University of Texas Marine Science Institute. In addition to these organizational news sources, which might be anticipated, a remarkable variety of news sources is revealed.

For example, an August 23, 1986, article quotes Jim Bissell, curator of botany of the Cleveland Museum of Natural History, explaining, "What we're trying to do is save all the pieces of the ecological scheme."

Direct quotations from stakeholder representatives in the news articles provide powerful arguments for their perspective. For instance, in an April 20, 1993, news article, American Rivers President Kevin Coyle is quoted in commenting, "By making the public and political leaders aware of just how poisoned, dredged, dammed, and overdeveloped our rivers are, the prospects for protecting and restoring rivers everywhere improve immeasurably."

Similarly, in an August 18, 1987, article, comments by wildlife biologist Fred Bott of the state Fish and Game Department are quoted directly: "The wetlands are one of our most important habitats. It's not just important to migrating birds but it is an entire ecological system."

The same article presents supporting information that is not attributed in a direct quote:

> The marsh is home to 240 species of birds and 40 species of mammals, including such endangered species as the clapper rail, Aleutian Canadian Goose and the salt marsh harvest mouse.

In an Aug. 28, 1989, article datelined Penn, ND., quoted is Lloyd Jones, state game and fish commissioner and former director of wetlands habitat for the Fish and Wildlife Service: "Wetlands act as a natural filter, . . . Draining the bowl-like indentations dotting the prairie in eastern North Dakota has disrupted the area's hydrology and removed natural storage tanks, increasing the chances of flooding. . . . It also removed natural habitat for ducks and geese."

Another article scoring high in the Conservation Frame Index was released Aug. 18, 1987, datelined Suisan City, CA. Michael Lewis, manager of the Suisan Resource Conservation District, is quoted with the observation: "When you talk water in California, you are talking politics. And when you talk about water needs for agriculture and industry, the water needs of wildlife take a back seat."

A January 11, 1989, news article datelined New York quotes U.S. Rep. Floyd Flake, who suggests, "I think the average lay person really does not understand how environmental issues affect our lives on a daily basis."

Wilderness Society President George Frampton is quoted in an October 27, 1988, article datelined Washington. Frampton says, "From Florida to Alaska the [national wildlife] refuge system is threatened by poisonous agricultural runoff containing heavy metals, toxic chemicals and pesticides; by wetlands drainage and water diversion; by overcrowding and off-road vehicles; by oil drilling and other incompatible activities."

In another article that clearly presents the Conservation Frame in the news coverage of wetlands, David Davis, director of the Environmental Protection

Agency's wetlands protection program, is quoted directly with his observation, "One of the key values of wetlands is they serve as a kind of filter—some people might call it a kidney—within an aquatic system."

A May 21, 1989, article by David Rocks, datelined Wadsworth, IL, also presents information—in addition to direct quotations of news sources—that support the conservation perspective: "Nationwide, more than half of the 200 million acres that existed when European settlers arrived on the continent have disappeared. They continue to be destroyed at an annual rate of 275,000 acres, or more than one-third the area of Rhode Island, according to figures compiled by the federal Fish and Wildlife Service. Wetlands—marshes, swamps, and bayous—can soak up flood waters and help improve water quality, many conservationists say."

President George Bush is a prominent figure involved in the national wetlands debates, and he is quoted as a news source in several of the Associated Press articles that score high in the Conservation Frame Index. One of these is a Dec. 13, 1989, article headlined, "Bush Signs Everglades, Wetlands Bills." The 683-word article, datelined Washington, reports the signing of a pair of environmental bills "to expand Everglades National Park by 110,000 acres and begin rebuilding dwindling waterfowl populations by buying nearly 2 million acres of wetlands."

Bush is quoted commenting, "This bill is an excellent first step in reaching our national goal of no net loss of wetlands."

Similarly, another news article dated Dec. 13, 1989, which also scores high in the Conservation Frame Index, reports of the establishment of the North American

Wetlands Conservation Program that Bush said the bills will help achieve his campaign goal of "no net loss of wetlands."

The following discussion focuses on articles scoring highest in the Property-Owner Frame Index. As would be expected, news sources in these articles include representatives of a number of property-owner advocacy organizations, numerous lawmakers involved in considering wetlands regulations and reforms, and a host of individuals identified as homeowners, farmers, developers, sawmill operators, and loggers. News sources quoted in the articles included spokespersons for representatives of the American Farm Bureau Federation, the Iowa Farm Bureau Federation, the California Farm Bureau, and the Dade County (FL) Farm Bureau, as well as the Pennsylvania Landowners Association and the National Association of Homebuilders. As examples will illustrate, several legislators with contrasting views are quoted as news sources in the articles. Notably, President Bush is quoted in articles scoring high in the Property-Owner Frame Index, as well as in some articles scoring high in the alternative Conservation Frame Index.

A June 13, 1992, news article scoring high in the Property-Owner Frame Index states that Bush "also sounded a sympathetic note about farmers' complaints about stricter federal definitions of wetlands."

Datelined Kansas City, MO, the article covers a Bush address to the full annual conference of the American Farm Bureau Federation. Bush is quoted as telling them, "I am pledged to a sound environment, but I am not pledged to throw people out of work."

In articles scoring highest in the Property-Owner Frame Index, news sources include legislators such as Rep. Wes Cooley, R-Ore.; Rep. Billy Tauzin, D-La.; Rep. Jack Fields, R-Texas, Rep. Richard Pombo, R-Calif.; and House Republican Whip Tom Delay of Texas. For instance, in the March 2, 1995, article headlined, "Legislation Would Help Landowners Hurt by Environmental Rules," Rep. Fields is quoted in commenting, "There is a constitutional right to use and enjoy one's private property."

In a March 4, 1995, article House Republican Whip Delay suggests, "Americans feel they are being bombarded by dumb regulations."

A May 10, 1995, article reports, "One of the [proposed] bill's most controversial provisions would dramatically narrow federal control over wetlands. The issue has pitted property rights advocates against environmentalists. Rep. Jimmy Hayes, D-La., who was key in developing the wetlands language, characterized the issue as a clash between 'the rights of individuals (and) the power of the government over private property'."

Similarly, a legislator is quoted in a Feb. 18, 1995, article headlined, "House Nears Approval of Bill Making Issuing Regulations More Difficult." Rep. Bob Walker, R-Pa., is described as a leading cosponsor of a proposed bill and states the "regulatory system has become a nightmare" costing more than $500 billion a year. He is quoted as saying, "There are too many stupid regulations and it's high time the bureaucrats have to look at what they're doing."

Articles scoring the highest in the Property-Owner Frame Index tended to

present the property-owner frame relating to wetlands even when news sources were not being quoted directly. For instance, an April 15, 1995, article headlined "Farmers in Growing Rebellion Over Wetlands Regulations" reports the following: "Farmers hope to weaken the Swampbuster law by tightening the definition of a wetland and allowing more exemptions or lighter penalties for farmers who disturb wetlands unintentionally." News sources in the article include Brian Odden, a Kingsbury County (SD) farmer.

Another example comes from a March 2, 1995, article: "Plans by an elderly couple in Maine to sell some oceanfront property went awry when part of it was declared a wetland. A Texas woman complained her 15 acres became almost worthless when developers lost interest after the discovery of the endangered golden-cheeked warbler." News sources in the article included Rep. Billy Tauzin, D-La.

Representatives of the American Farm Bureau Federation are quoted directly in several of the articles scoring high in the Property-Owner Frame Index. For instance, an Aug. 24, 1993, news article is headlined, "Wetlands Plan, 'Classic Compromise,' Faces Legal Challenge." The article reports that construction and mining industries filed suit in U.S. District Court challenging a Clinton regulation that would require permits for excavation in wetlands. "This is a classic Clinton compromise," Don Parrish of the American Farm Bureau Federation is quoted as commenting. Also quoted as a news source in the article is Cynthia Adcock of the National Association of Homebuilders.

A July 18, 1991, news article is headlined, "Farm Bureau Calls for End to

'Environmental Overkill'." The lead sentence of the article by Don Kendall reports, "The American Farm Bureau Federation says current wetlands policy is so oppressive and confusing that President Bush should halt all federal environmental initiatives the group believes threaten the property rights of private citizens." Dan Kleckner, president of the organization, is cited as a news source in the article. Further, the article states, "The federation and some agricultural groups, developers, oil companies and mining interests contend that federal regulations are overzealous in their bid to protect land that sometimes isn't very wet."

Farm Bureau President Kleckner also is quoted in a July 18, 1991, article, suggesting that proposed legislation "would inject badly needed common sense and consistency" in wetlands regulations.

The article also reports, "In the current delineation manual, part of the definition of a wetland requires that water rise within 18 inches of the surface for seven days of the growing season. In some cases, a homeowner's dry, grassy lawn turned out to be a wetland."

Quoted in a May 22, 1992, news article is Mark Maslyn, director of national affairs for the American Farm Bureau Federation, in a report that the Farm Bureau favored new regulation proposals. "If USDA were to make these changes it would greatly ease the tension and the controversy and the conflict out there in agricultural lands," Maslyn says.

The article also reports, "Maslyn said USDA's efforts should be concentrated on protecting 'true marshes, swamps, and bogs,' and not farmland 'that doesn't

exhibit any wetlands characteristics."

Citing him only indirectly, an article released March 27, 1993, references Don Lipton, a spokesperson for the American Farm Bureau Federation, who "said the Agriculture Department has been hampered by a lack of money to carry out many conservation programs. Farm groups have argued for a more workable definition of wetland, saying present criteria are vague and unscientific."

Another Farm Bureau representative is quoted and referenced in an Aug. 3, 1991, news article on national farm policy: Grace Ellen Rice, a budget specialist with the American Farm Bureau Federation, said the group's priorities this year were agricultural research and commodity programs, animal and health and safety issues, and export enhancements. 'You can only spend your energy and efforts in so many places,' she said. 'When was the last time they (environmentalists) worked on some of the production issues we're interested in?'"

Logger Gary Aldrich of Rochester, WA, is quoted as a news source in a July 10, 1993, news article datelined Puyallup, WA. Aldrich comments on "all the rules and regulations . . . for growth management, wildlife habitat, wetlands, urban development" and asks, "Who owns the property, anyway? The owner or the state?"

While the analysis in the previous discussion compared who was quoted as news sources in articles with most frequent use of either conservation frame terms or property-owner frame terms, it is also of interest to compare new sources in articles with the purest representation of one frame or the other. That is, we wished to investigate who was quoted in news articles that most prominently discussed the

conservation frame but not the property-owner frame, and similarly who was quoted in news articles that most prominently discussed the property-owner frame but not the conservation frame.

To take this analysis a step further, as mentioned previously, the researcher also may rank the articles according to adjusted prominence or frame purity for each frame. This is accomplished by subtracting the scores or term occurrences representing one frame from those representing another and then ranking the articles by this new score, referenced in this study as a *frame purity index* score. As this study focuses on two competing issue frames, two such indices were created in this analysis.

Conservation Frame Purity Index. To guide examination of "pure frame" articles—that is articles prominently discussing the Conservation Frame or Property-Owner Frame *and not* the other frame—in the news coverage of wetlands, a Frame Purity Index was created for both the Conservation Frame and the Property-Owner Frame. Mathematical procedures, which are accommodated conveniently in VBPro and SPSS, were followed to create a ranking of the news articles in this analysis by score in the resulting Conservation Frame Purity Index.

The procedures for creating a Conservation Frame Purity Index were as follows:

(1) The coded numeric data files for the *Conservation Frame Index* and the *Property Frame Index* were read into SPSS and used to create an additional variable from subtraction of the frequencies of the Property-Owner Frame terms from

Conservation Frame terms.

(2) In SPSS this new variable (abbreviated as *C Minus P)* was then ranked by frequency, the result of which is a new index representing the *Conservation Frame Purity Index.*

These rankings of the news articles are listed in *Appendix H.* The lead paragraphs of the articles scoring highest in the Conservation Frame Purity Index are listed in Table 32.

The article with the highest score on the Conservation Frame Purity Index was a June 1, 1986, news feature containing 65 Conservation Frame terms and 11 Property-Owner Frame terms. Subtracting the latter from the former gave the article a score of 54 in the constructed index referred to here as the Conservation Frame Purity Index. The article describes the wildlife conservation movement in the United Sates—beginning with the opening in 1872 of Yellowstone, identified as the first national park in the country and even in the world, and followed by the establishment of the National Audubon Society and later the National Wildlife Federation, Sierra Club, and other sympathetic groups. The establishment of a total of 424 wildlife refuges in 49 states, beginning with Pelican Island in Florida in 1903, is also recounted. The article mentions a number of wildlife species including ducks, eagles, whales, manatees, warblers, thrashers, polar bears, caribou, snow geese, lake trout, endangered bat species, deer, bighorn sheep, coyotes, whooping cranes, timber wolves, snail darters, sea turtles, wild turkeys, river otters, sharp-tailed grouse, and walrus.

Table 32. Associated Press Articles on Wetlands with Highest *Conservation Frame Purity Index* Scores

Conservation Frame Purity Index Score	First Paragraph of Article[a]
54	"Ducks don't vote, eagles don't turn a profit, whales can't bring short-term capital gains, manatees never have to meet a payroll, hairy-nosed wombats are underachievers, Kirtland's warblers are ineffective against high interest rates and no pearly-eyed thrasher of record ever licked a Communist." (Case #1494, released June 1, 1986 13:37 EDT, datelined Washington. Conservation Frame terms, 65; Property-Owner Frame terms, 11.)
48	"In 1984, the cameras rolled as Gov. Bob Graham hefted the first shovelful of dirt in a historic project to fill a canal and rebuild the river it replaced." (Case #0904, released Oct. 15, 1990 11:04 EDT, datelined Okeechobee, Fla. Conservation Frame terms, 53; Property-Owner Frame terms, 5.)
43	"A conservation group says the Columbia and Snake river system is the most endangered in North America, with more than 200 species of fish imperiled by dams and development in Oregon, Washington and Idaho." (Case #0605, released April 8, 1992 14:17 EDT, datelined Washington. Conservation Frame terms, 45; Property-Owner Frame terms, 2.)
41	"The Missouri and Mississippi Rivers, which cut 4,500 miles through the nation's heartland and occupy a unique place in America's heritage, are among the 10 most endangered rivers, an environmental group said today." (Case #0197, released April 19, 1994 00:58 EDT, datelined Washington. Conservation Frame terms, 43; Property-Owner Frame terms, 2.)
41	"During the last ice age about 16,000 years ago, when mammoths and mastodons roamed Pennsylvania, the boulders and gravel from retreating glaciers filled an ancient stream and created a 13-mile-long expanse of water, waterlilies and waterfowl." (Case #1118, released Nov. 26, 1989 23:33 EST, datelined Geneva, Pa. Conservation Frame terms, 46; Property-Owner Frame terms, 5.)
41	"Draining the grassy waters of the Everglades made the dream of Florida living come true for millions of people. Now, the state is trying to turn back the tide of its history to prevent a nightmare—a people-packed desert." (Case #1502, released May 4, 1986 22:51 EDT, datelined Everglades National Park, Fla. Conservation Frame terms, 57; Property-Owner Frame terms, 16.)

Table 32. (continued)

Conservation Frame Purity Index Score	First Paragraph of Article[a]
40	"The Columbia and Snake river system, where hundreds of Northwestern fish species are imperiled by dams and development, heads a conservation group's annual list of North America's most endangered rivers." (Case #0606, released April 8, 1992 01:07 EDT, datelined Washington. Conservation Frame terms, 42; Property-Owner Frame terms, 2.)
39	"Decades of pollution and emphasis of navigation over nature have landed the mighty Missouri and Mississippi on an environmental group's list of the 10 most endangered rivers." (Case #0196, released April 19, 1994 15:02 EDT, datelined Washington. Conservation Frame terms, 41; Property-Owner Frame terms, 2.)
37	"It's a little past sunrise. The shimmering waters of Laguna Madre extend for mile after mile of golden ripples." (Case #0146, released July 31, 1994 13:59 EDT, datelined Arroyo, Texas. Conservation Frame terms, 38; Property-Owner Frame terms, 1.)
37	"Oregon's Klamath River is the most endangered river in the nation because of a proposed power project that threatens 'one of the nation's outstanding whitewater recreational rivers,' an environmental group said Wednesday." (Case #1023, released March 21, 1990 17:25 EST, datelined Washington. Conservation Frame terms, 38; Property-Owner Frame terms, 1.)

[a] Shown with case number, date of release, dateline, and *Conservation Frame* and *Property-Owner Frame* term occurrences.

Quoted in the article are a handful of conservationists—Russell Train of the World Wildlife Fund and naturalist William Beebe, as well as Nathaniel P. Reed, former head of the U.S. Fish and Wildlife Service, described as an organization that "guards the lives of 828 species of plants and animals thought to be in danger of disappearing forever from the earth and man's ken."

Reed is quoted in defending wildlife preservation: "We do not understand the web of life sufficiently to risk unraveling it by sending species to oblivion."

Similarly, the article posed a rhetorical question: "If mollusks disappeared from the earth, would we ever learn why they didn't get cancer? . . . life on earth is shaped by a wondrous system of interlocking parts and man endangers the parts at his own peril." These excerpts from the article illustrate its focus on conservation and the effectiveness of the techniques used to isolate and rank, from among the 1,465 articles the ones that most purely present the Conservation Frame.

The restoration of Florida's Kissimmee River is the topic of the article scoring second highest in the Conservation Frame Purity Index (with 53 Conservation Frame terms and five Property-Owner Frame terms for an score of 48). Released on Oct. 15, 1990, the article cites among others Brien Culhane of the Wilderness Society and the Everglades Coalition, which includes 25 environmental groups. The article discusses planned restoration of environmental values of the Kissimmee River by refilling 56 miles of flood-control canals completed in 1971 by the U.S. Army Corps of Engineers. The restoration project "is crucial to the survival of the Everglades," according to the news article. News sources in the article, in addition to Culhane,

include Estus Whitfield, environmental adviser to the Governor of Florida; Kent Loftin, director of the river restoration project for the South Florida Water Management District; John Wullschleger, fisheries biologist with the Florida Game and Freshwater Fish Commission; and Lewis Hornung, a project director with the Corps of Engineers. Author Marjorie Stoneman Douglas, whose 1947 book describes the Everglades as a unique and precious "river of grass," also was mentioned. Again, the focus of the article is on conservation issues, as was specified by the selection procedure.

The lead of an article identified as the third highest in the Conservation Frame Purity Index includes five Conservation Frame terms: "A >conservation< group says the Columbia and Snake >river< system is the most >endangered< in North America, with more than 200 >species< of >fish< imperiled by dams and development in Oregon, Washington, and Idaho." The article was released by Associated Press on April 8, 1992, and includes a total of 45 Conservation Frame terms and only two Property-Owner Frame terms (for an index score of 43). The first-quoted news source in the article is American Rivers President Kevin Coyle. Others quoted are Sen. Al Gore, D-Tenn., and Sen. Mark Hatfield, R-Ore., both of whom spoke in favor of river protection and restoration.

Three articles share the fourth highest score of 41 in the Conservation Frame Purity Index. One of these is an April 19, 1994, article (with 43 Conservation Frame terms and two Property-Owner Frame terms) that covers an announcement by American Rivers of the year's 10 most endangered rivers. News sources in the report

are the organization's president, Kevin Coyle, as well as Scott Faber, its director of floodplains programs. The article cites Coyle's view that the 1993 flood "showed that controls such as levees have created a tight channel that makes floods worse." Cited as problematic is the straightening of the Mississippi River along its 2,000-mile length, "which has destroyed fish and wildlife habitat and adjacent wetlands. In Kentucky alone, according to American Rivers, only 4 percent of the original forested wetlands remain."

Also scoring 41 on the Conservation Frame Purity Index is an article (with 46 Conservation Frame terms and five Property-Owner Frame terms) released Nov. 26, 1989, that describes the comeback of the bald eagle, the national symbol, "from the days of the now-banned pesticide DDT, which decimated the species three decades ago." The feature quotes no less than eight news sources including birdwatchers at Connealt Marsh near the Erie (Pa.) National Wildlife Refuge, an ornithologist, an endangered species biologist with the U.S. Fish and Wildlife Service, and an endangered species specialist for the National Audubon Society.

Restoration of the Everglades is the topic of the third article scoring 41 (with 57 Conservation Frame terms and 16 Property-Owner Frame terms) on the Conservation Frame Purity Index. The May 4, 1986, article describes the six-point restoration program of Florida Governor Bob Graham, involving buying up land "to create a buffer zone around the sensitive wetlands, rebuilding a major highway, restoring natural water flows through the Everglades National Park, saving the estimated 30 Florida panthers, thinning while preserving the Everglades deer herd,

and returning a channeled river to its original meanders, a project never before attempted." The conflict between environmentalists and property owners is mentioned explicitly in the article: "Some of those most critical of the program are hundreds of people living in the flood-probe East Everglades community and the dairy farmers and other agricultural interests, whose cattle, fertilizers, and insecticides are polluting water supplies."

Property-Owner Frame Purity Index. Similarly, a new variable was created by subtracting the Conservation Frame terms from the Property-Owner Frame terms. Then SPSS was instructed to rank this new variable (abbreviated as *P Minus C)* to create a list of case numbers (representing Associated Press articles) ranked by relatively pure representation of the Property-Owner Frame. This index is the Property-Owner Frame Purity Index. The articles ranked by scores in the Property-Owner Frame Purity Index are listed in *Appendix I.*

It is recalled, this frame purity index represents the score of an article in Property-Owner Frame term frequency after subtraction of the frequency of Conservation Frame terms. The lead paragraphs of articles scoring the highest in this index are shown in Table 33. As noted in the earlier discussion of the simpler Conservation Frame Index and Property-Owner Frame Index, the frame purity indices illustrate the impressive precision of these methods for analyzing relative frame representation in news media content. It is noted that many—though not all—of the articles ranking highest in the frame purity indices are the same articles as those selected simply by ranking of term occurrences for each frame.

Table 33. Associated Press Articles on Wetlands with Highest *Property-Owner Frame Purity Index* Scores

Property-Owner Frame Purity Index Score	First Paragraph of Article[a]
44	"Environmentalists attacked the Bush administration for siding with a property owner seeking compensation for obeying an anti-erosion ruling that barred him from building homes on his land." (Case #0671, released Jan. 4, 1992 02:26 EST, datelined Washington. *Property-Owner Frame* terms, 46; *Conservation Frame* terms, 2.)
37	"Declaring an assault on arrogant government, the House approved a bill today requiring federal agencies to compensate landowners for restrictions that protect wetlands and endangered species." (Case #0075, released March 3, 1995 13:46 EST, datelined Washington. *Property-Owner Frame* terms, 53; *Conservation Frame* terms, 16.)
35	"The moral lapses of the 1980s were not confined to executive suites, trading pits of political backrooms—there also was backsliding in the cornfield, farm observers say." (Case #0811, released May 7, 1991 13:25 EDT, datelined North Branch, Minn. *Property-Owner Frame* terms, 36; *Conservation Frame* terms, 1.)
33	"The Senate approved the 1990 farm bill Thursday, sending the president legislation that clears the way for crop subsidy cuts and gives the farmers new rules for conserving their land." (Case #0892, released Oct. 25, 1990 20:53 EDT, datelined Washington. *Property-Owner Frame* terms, 40; *Conservation Frame* terms, 7.)
33	"On the eve of congressional debate over a far-reaching bill on property rights, the Clinton administration is voicing strong opposition to a proposal that requires compensating landowners for losses that result from federal actions." (Case #0084, released March 2, 1995 02:26 EST, datelined Washington. *Property-Owner Frame* terms, 41; *Conservation Frame* terms, 8.)
32	"Plans by an elderly couple in Maine to sell some oceanfront property went awry when part of it was declared a wetland." (Case #0080, released March 2, 1995 22:22 EST. *Property-Owner Frame* terms, 47; *Conservation Frame* terms, 15.)

Table 33. (Continued)

Property-Owner Frame *Purity Index* Score	First Paragraph of Article[a]
31	"The House Judiciary Committee approved legislation Thursday that would require the government to compensate private property owners for financial losses as a result of federal health, safety or environmental regulations." (Case #0093, released Feb. 16, 1995 19:52 EST, datelined Washington. *Property-Owner Frame* terms, 35; *Conservation Frame* terms, 4.)
30	"A House-passed rewrite of the nation's premier clean water law faces an uncertain future in the Senate where moderates are expected to balk at its rollback of wetlands protection and easing of pollution controls ion industry." (Case #2055, released May 17, 1995 00:28 EDT, datelined Washington. *Property-Owner Frame* terms, 35; *Conservation Frame* terms, 4.)
29	"When the 101st Congress begins work on a farm bill next year, lawmakers will face the task of meshing agricultural and environmental policies." (Case #1251, released Nov. 20, 1988 14:38 EST, datelined Washington. *Property-Owner Frame* terms, 40; *Conservation Frame* terms, 11.)
29	"The 1985 farm bill is a massive piece of legislation that extends and revises policy framework, governing programs from crop subsidies to food stamps and foreign food aid." (Case #1549, released Oct. 8, 1985 19:55 EDT, datelined Washington. *Property-Owner Frame* terms, 33; *Conservation Frame* terms, 4.)
29	"In its most far-reaching assault yet on federal government, the House passed a bill on Friday that would allow property owners to seek billions of dollars for losses caused by restrictions on environmentally sensitive land." (Case #0069, released March 3, 1995 17:25 EST, datelined Washington. *Property-Owner Frame* terms, 48; *Conservation Frame* terms, 4.)

[a] Shown with case number, date of release, dateline, and *Property-Owner Frame* and *Conservation Frame* term occurrences.

The news article scoring highest in the Property-Owner Frame Purity Index (with 46 Property-Owner Frame terms and two Conservation Frame terms for a Property-Owner Frame Purity Index of 44) was a January 3, 1992, news report about the Supreme Court case involving David H. Lucas' bid for $1.1 million in compensation after being denied permission, under the South Carolina anti-erosion law, to build two homes on oceanfront property. News sources in the article include an un-named senior Justice Department "who spoke on condition of anonymity"; Peter Antonacci, deputy attorney general for the State of Florida; and Sierra Club legal defense representatives Gerald Paulson and David Guest. Property owner entitlement to compensation is the focus of the article, again providing support for the techniques used to identify and index the articles with the strongest pure representation of the Property-Owner Frame. Additional examples also will be discussed.

Four articles share the second highest score of 37 in the Property-Owner Frame Purity Index. One of these is an article released March 3, 1995 (with 53 Property-Owner Frame terms and 16 Conservation Frame terms) reporting House approval on a "Private Property Protection Act," requiring "federal agencies to compensate landowners for restrictions that protect wetlands and endangered species." In the article the first-quoted news source is Rep. Wes Cooley, R-Ore., who comments, "We should not be taking private property for any reason."

Siding with Cooley in the news report are Rep. Billy Tauzin, D-La., referred to as "a leader of the property rights Republican-led Congress," and Rep. Jack

Fields, R-Texas. According to the article, "the clear target of the 'takings' legislation was federal wetlands and endangered species protection." Opponents of the legislation, cited in the last five paragraphs of the 18-paragraph article, include Rep. George Miller, D-Calif., Rep. Bruce Vento, D-Minn., and Rep. John Dingell, D-Mich. Similar versions of the article were released later on the same day and similarly scored high on the Property-Owner Frame Purity Index.

Additional examples from the frame purity indices provide further evidence for the usefulness of the concept mapping and related searching and coding procedures to distinguish divergent issue emphases and identify representative cases in natural language text.

For example, a handful of farmers are cited in a May 7, 1991, news article that scored sixth highest on the Property-Owner Frame Purity Index (with 36 Property-Owner Frame terms and one Conservation Frame term for an index score of 35). Headlined "Farmers' Ethics," the news article is datelined North Branch, Minn., and discusses a survey of readers of *Farm Futures* magazine in which a majority of respondents reported they believe farmers' ethical standards had declined over the last 10 years. Situations involving ethics include whether, for instance, a producer would notify proper authorities if a pesticide tank spilled into a creek.

The article cites Jeffrey Burkhardt, director of the ethics and policy studies program at the University of Florida, as blaming the apparent decline on ever-increasing "expectations about farmers in the environmental sphere." The call for wetlands protection and the growing alarm about pesticides' effect on groundwater are

given as examples. Another analyst cited in the article suggested that today's farmers are squeezed by financial pressure and increasing regulations into taking shortcuts and sliding into unethical practices. Quoted is Cy Carpenter, former president of the National Farmers Union, who concludes there is bound to be a conflict between farmers and environmentalists.

A variety of news sources are included in other news articles that score relatively high on the Property-Owner Frame Purity Index. One example is an Oct. 25, 1990, article (with 40 Property-Owner Frame terms and seven Conservation Frame terms for an index score of 33) headlined "Congress Passes Farm Bill." The article reports Senate approval of the 1990 farm bill, "sending the president legislation that clears the way for crop subsidy cuts and gives farmers new rules for conserving their land." News sources in the article, in order of attribution, are bill supporters Sen. Richard Luger, R-Ind., and Sen. Patrick Leahy, D-Vt., and legislation opponents Sen. Thomas Daschle, D-S.D., and Sen. Max Baucus, D-Mont.

Also rating 33 on the Property-Owner Frame Purity Index is an article headlined "Administration Opposes House Bill to Compensate Landowners for Losses," released March 2, 1995. The article included 41 Property-Owner Frame terms and 8 Conservation Frame terms. Interior Secretary Bruce Babbitt is the first-quoted news source in the article; Babbitt expresses opposition to a proposed bill on property rights, which would require compensation of landowners for losses from federal actions. In the article, bill supporters including Rep. Billy Tauzin, D-La., counter that the legislation "is aimed at rectifying injustices to small landowners such

as those who have property values reduced because part of their land is declared a wetland or is no longer commercially viable because of the discovery of an endangered species." Also cited are bill opponents Carol Browner, EPA Administrator; Kathleen McGinty, President Clinton's environmental adviser; and Pat Goddard of the Sierra Club.

Property-owner advocacy groups are cited in a March 2, 1995, article headlined, "Legislation Would Help Landowners Hurt by Environmental Rules" (with 47 Property-Owner Frame terms and 11 Conservation Frame terms for a Property-Owner Frame Purity Index score of 32). The article reports a pending House vote on legislation to require the government to compensate landowners for property losses resulting from federal actions. Cited as supporters of the bill are the National Cattlemen's Association, the American Petroleum Institute, the National Mining Association, and the American Forest and Paper Association, along with Rep. Billy Tauzin, D-La., and Rep. Jack Fields, R-Texas. Critics of the bill that are quoted in the article include Rep. Bruce Vento, D-Minn., Rep. John Dingell, D-Mich., Rep. Gerry Studds, D-Mass., EPA Administrator Carol Browner, Interior Secretary Bruce Babbitt, and Karl Gavell of the Wilderness Society.

Similarly, "defenders of property rights" are mentioned in the May 17, 1995, news article announcing in its headline, "Prospects Clouded for Major Clean Water Rewrite in the Senate." The article contains 31 Property-Owner Frame terms and one Conservation Frame term for a Property-Owner Frame Purity Index score of 30. The article reports the House approval of legislation to revise the 1972 Clean Water Act

after supporters argued it "gives too much power to federal bureaucrats and is unfair to property owners." The first-quoted news source in the article was Rep. Bud Shuster, R-Pa., sponsor of the bill, who describes opponents of the proposed reform as "extreme environmentalists."

Rep. James Hayes, D-La., also is quoted in support of the bill, describing the issue as conflict "between the rights of individuals and the arrogance of government."

The article states that the legislation "was supported by associations representing governors, mayors, local water pollution control officials and scores of business groups, as well as agriculture." Mentioned as critics of the proposed legislation are Rep. David Bonio, D-Mich., Sen John Chafee, R-R.I., Rep. Norman Mineta, D-Calif., and EPA Administrator Carol Browner.

Property rights organizations such as Wise Use, the Pennsylvania Landowners Association, Vermont's Citizens for Property Rights, and the New Hampshire Landholder's Alliance are referenced and quoted in another article scoring relatively high on the Property-Owner Frame Purity Index. According to the article released May 8, 1995 (with 43 Property-Owner Frame terms and 14 Conservation Frame terms for an index score of 29), the 2,500-member Pennsylvania Landowners Association "wants to stop additions to public lands, soften protection for wetlands and endangered species and to pass stricter trespass laws."

In the article Keith Klinger, a real estate developer and sawmill operator, characterizes the Pennsylvania Department of Environmental Resources as "Gestapo." Additional news sources in the article include a researcher studying the property

rights movement, Pennsylvania Governor Tom Ridge, and representatives of the Pennsylvania Landowner's Association, the Pennsylvania Federation of Sportsmen's Club, the Pennsylvania Environmental Council, and the nonprofit Western Pennsylvania Conservancy.

Representatives of the American Farm Bureau Federation are quoted directly in a number of articles scoring relatively high on the Property-Owner Frame Purity Index. These include a January 13, 1992, article reporting on President Bush's address at the annual meeting of the Farm Bureau. The article includes 27 Property-Owner Frame terms and no Conservation Frame terms. The article quotes the Farm Bureau President and cites Bush's sympathy toward "farmers' complaints about stricter definitions of wetlands." The article also notes that Farm Bureau "boasts 3.9 million members, including 90 percent of the nation's farmers."

Another example is a November 6, 1993, article about Mike Espy, Secretary of Agriculture, who is credited by Rick Newpher of the American Farm Bureau Federation's Washington office with tempering the Clinton administration's policy on wetlands and pesticides. The article includes 28 Property-Owner Frame Terms and one Conservation Frame term for a score of 27 on the Property-Owner Frame Purity Index.

The above described the ranking of articles in an entire data set by relative prominence and pure representation of competing issue frames. Specifically, the procedures for constructing a Conservation Frame Index, a Property-Owner Frame Index, a Conservation Frame Purity Index, and a Property-Owner Frame Purity Index

were discussed. The accompanying review of articles ranking highest in these procedures provides added confidence to the Frame Mapping procedures, and it also supports a richer understanding of the complexities of the competing frames in the wetlands policy issue.

Summary

This chapter on analysis and results focuses on four general topics. First, the Frame Mapping Method is introduced, and its procedures are applied to stakeholder group news releases to precisely specify the sets of terms representing two competing issue frames in the ongoing wetlands debates. Secondly, the sets of terms specified in the Frame Mapping analyses are employed to investigate relative conservationist and property-owner frame prominence in news media coverage over an 11-year period. Specifically addressed are the relationships between use of stakeholders as news sources and relative prominence of stakeholder frame in news content.

Thirdly, the procedures of these computer-assisted content analyses—incorporating word processing, VBPro, VBMap, and statistical analysis programs—are explained. Fourthly, news articles are ranked by frame prominence and by pure frame representation and subsequently reviewed to confirm the validity of the frame mapping procedures. As noted previously, review of the articles provides strong evidence for the effectiveness of the quantitative frame analysis procedures made available to researchers by the innovative Frame Mapping Method and other applications of Concept Mapping.

CHAPTER V.

DISCUSSION

This study addresses framing and news content issues, which are vitally relevant in a modern democratic society. This is a study in political communication, for it examines some features of *"how* Americans communicate their political beliefs, values, and expectations" as emphasized by Nimmo (1987, p. 6).

Political communication, generally speaking, "involves the exchange of symbols and messages between political actors and institutions, the general public, and news media that are the products of or have consequences for the political system (McLeod, Kosicki, & McLeod, 1994, p. 125-126, citing Meadow, 1980).

A key question relating to any effort in scholarship is, *what is the contribution of this study to the literature in the field?* This chapter will address this question, considering the contribution to the scientific literature as well as the limitations and suggestions of the study and opportunities for future research. Related implications also will be explored in this context.

The powerful impact and the pervasiveness of framing in everyday life have been noted by a number of researchers. Chapter II provides an overview of development of scholarly thought and understanding related to many types of framing. The current state of methodology for studying framing also is assessed. Several researchers concur in citing the need for improved methodology for conducting precise and reliable frame analysis. The development of an improved methodology for studying framing in various contexts unarguably would represent an important

development in the search for new knowledge.

Various scholars, whose writings were reviewed herein, conclude that framing affects the way people perceive reality. This reasonably would influence the scope and content of discussion of issues or experience by different sources or stakeholders. Recalled is the example of the invasion of Carthage by Rome, whether perceived from the point of view of a Roman or a Carthagenian. In each case different *salient* aspects of the event reasonably might be *selected* by the stakeholder to determine the individual's particular reference frame, resulting in quite divergent definitions and descriptions of the situation from each.

The implications of framing on news media content are myriad. First, there are the questions of who and what influences the relative prominence of competing frames presented in the news coverage of a complex issue. The basic question of *who gets to frame the news* is germane to the study of news media framing. This study addressed some aspects of this question in the context of the ongoing public policy issue of wetlands.

The snowballing consequences of news media framing are apparent, in that dominant frames in the media may become the defining frame for much of the public in forming an opinion on an issue and also influencing public policy and legislation. The influences on public opinion of competing issue frames presented in the news media also are pertinent to the study of framing and news media content, although these were not investigated in this study.

The need for further development toward building a theory of news content, as

noted by Shoemaker and Reese (1991), suggests the integration of framing studies and the investigation of influences on the content of news. Various levels of influences on news media content are elucidated by Shoemaker and Reese. These include influences from journalists themselves, influences from media routines and media organizations, influences from outside the media, and influences from ideology. The influence on news content from sources outside the media was explored in this study.

Entman (1993) echoes the need for theory development that is informed by improved understanding. Noticeably lacking in news media framing studies to this time, however, has been a satisfactory method for precisely identifying, measuring, and comparing frames in text.

A review of literature relating to the studies of news media framing showed that numerous scholars engaged in framing studies reached the similar conclusion that an improved method for studying frames is critically needed. Tankard (1991), for instance, observes that framing "appears to be emerging as such an important concept in news studies that some effective method of measuring it needs to be found" (p. 12). Similarly, Gamson (1989) calls for measurement of outcomes in media content, and Shoemaker and Reese (1991) cite the "need to develop precise and valid measures of content" (p. 213). These comments are reviewed in Chapter II.

Along this line comes the critical challenge from Maher (1994, p. 5), "If framing is indeed as significant an influence as Goffman, Gitlin, Tuchman and others have suggested, why has it not been reliably measured?" Maher's question is rhetorical, and it rings with the poignancy of the honest lad's observation in the

fictitious Tale of the Emperor's New Clothes. Maher's interrogative inference raises the insistent wakeup message: Studying frames is fine, but not without an effective quantitative means for identifying, measuring, and comparing them.

This study addresses this critical need for a precise, reliable method for measuring and comparing frames in text by demonstrating the promising new method introduced herein as Frame Mapping. Frame Mapping integrates new computer-assisted content analysis procedures and multidimensional scaling procedures to provide for specification of sets of key terms in text that represent issue frames by different sets of frame makers. In this way, the method quantifies the manifestation of frames in text by quantifying the occurrence and patterns of key words and phrases.

As Entman (1993) observes, frames in text "are manifested by the presence or absence of certain keywords, stock phrases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments" (p. 52).

Frames can be detected "by probing for particular words," as Entman (1991) observes (p. 7). The Frame Mapping Method, employing analytically powerful computer programs, probes for and quantifies the particular words of frames with precision and reliability. The method is an application of Concept Mapping and employs VBPro computers, including VBMap, as described in Chapters III and IV. This dissertation describes in detail the procedures for using Frame Mapping. Further, it illustrates the usefulness of the innovative new method in addressing various questions pertinent to framing.

Methodological Advances

This study demonstrates that an effective method for measuring frames reliably now is available, addressing the methodological need cited by Tankard, Gamson, Shoemaker and Reese, Maher, and others. Specification of sets of key words reflecting competing issue frames is accomplished through computer-assisted term frequency ranking, hierarchical cluster analysis of term co-occurrence patterns, and multidimensional scaling. Once the key terms are specified, the measurement of competing frames in text is accomplished easily through computer-assisted search and frequency coding procedures; then comparisons of relative frames may be made in any number of ways, such as in different periods of time. Additionally, the procedures may be used for construction of indices of frame prominence and frame purity, as illustrated in this report. Using these indices, researchers may then rank enormous volumes of cases by relative frame representation in frame prominence or frame purity. These indices are additional tools for investigating who frames the news and related questions.

Given that this method for effectively and reliably measuring frames now is available, this dissertation illustrates how substantive questions related to framing now may be addressed. For instance, questions relating to who gets to frame the news, and what frame shifts occur over time, may be investigated.

The computer-assisted procedures described herein, using the VBPro family of programs including VBMap, offer examples of detecting and measuring frames by specifying key terms and probing text for particular words with precision that has not

available to researchers previously. Entman (1993) suggests that frames may be detected by "probing for particular words" (p. 52), and the Frame Mapping procedures provide for doing this with virtually perfect reliability.

Thus, this study demonstrates the precision with which Frame Mapping procedures can detect, measure, and compare frame in text. In so doing, it contributes to continued research and knowledge development related to framing and news media content. The potential contribution of this new analytic method scarcely can be overstated.

This research proceeds from the methodological domain rather than from either the conceptual or substantive domains. These useful distinctions are discussed at length by Brinberg and McGrath (1985), Brinberg and Lutz (1986), and Brinberg and Hirschman (1986). The authors suggest three orientations to research—basic, applied, and technological, depending on whether studies originate from emphasis on the conceptual, substantive, or methodological domains. The research orientation referred to as technological is concerned with development of research technology, or building tools by which scientists can collect and analyze information about the phenomena of interest.

All research, they observe, involves aspects from these three domains, including "(a) some content that is on interest, (b) some ideas that give meaning to that content, and (c) some techniques or procedures by means of which those ideas and content can be studied" (p. 14). Each of the three research orientations or styles holds specific limitations; thus, they complement and support one another. Thus,

science is served best by converging efforts along the plurality of routes. They describe the alternative paths as theoretical, experimental, and empirical.

Research that is focused on the methodological domain emphasizes "methods, designs and research strategies used to examine concepts and phenomena" (Brinberg & McGrath, 1985, p. 26). Development and explanation of improved measurement instruments and methods through methodology-based research provides additional tools to scientists involved in both basic and applied research.

The primary contribution of this study is methodological—in its demonstration of the effectiveness of the Frame Mapping Method. The procedures for applying the Frame Mapping Method are described in detail. The results obtained in this study reveal the potential usefulness of Frame Mapping in continued scientific endeavors.

Review

By employing a new analysis technique based on multidimensional scaling of terms and concepts, this study identified two distinct frames or definitions of the wetlands policy issue by the diverse stakeholders of conservation and property-owner advocacy groups.

By investigating the relative prominence of these frames in news coverage on wetlands, in conjunction with variables related to news sources (which stakeholder group was used as a news source and type of attribution), this study demonstrated some statistically significant relationships relating to frame prominence measured as outcomes.

Findings of the Frame Mapping analysis applied to the news releases from conservation and property-owner advocacy groups provide strong evidence for differential framing of complex issues by diverse stakeholders.

Of substantive interest, representative sets of terms that aggregately describe the concerns of each stakeholder group in the wetlands controversies are identified. For instance, it is revealed that preserving and restoring natural habitat areas for diverse threatened and endangered species is a prime concern of the conservationists. They want to protect wetlands from degradation and destruction, whether from development for commercial, residential industrial, or agricultural use. They want the effects of pollution to be decreased, and they want the ecological integrity of waterways, forests, the unique Everglades, and coastlines to be protected. They seek these goals through a variety of programs.

In contrast, these frame measurement procedures identify the concerns of the property-owner advocacy groups to be focused more narrowly on the rights of private property owners to use their land—for agricultural or other purpose—or be compensated for any environmental regulation that prohibits such use. Wetlands legislative reform to provide such compensation was a central, dominating theme for these stakeholders during the 1984-95 period addressed in this study.

The identification of valid terms representing the distinct Conservation Frame and the Property-Owner Frame in the wetlands controversy allows the examination of relative prominence of these competing frames at varying levels of analysis. Viewed over the entire 11-year period, the two stakeholder frames received about the same

amount of emphasis in the news media, with the Property-Owner Frame receiving slightly more emphasis.

Considered on an annual basis, however, distinctive patterns of ebbs and flows of frame prominence are observed. While the topic of wetlands received consistent attention in the news coverage, the relative prominence of the Conservation Frame and the Property-Owner Frame changed over time. Each year from 1984-85 until 1990-91, the Conservation Frame was more prominent than was the Property-Owner Frame, in both raw frequency of frame terms and average frame term occurrences per article. However, in 1990-91 the occurrence of Conservation Frame terms in news articles on wetlands decreased, while the occurrence of Property-Owner Frame terms increased dramatically—in average occurrences per article as well as total occurrences in the year.

In the three years from 1991-92 to 1993-94, the relative prominence between the two frames was not very different, then in 1994-95 another dramatic shift occurred. Again, the total frequency and average occurrence per article for Property-Owner Frame terms skyrocketed, overshadowing the Conservation Frame terms by almost two to one.

The frame analysis procedures also are compatible with examination of articles by news source or other questions of interest. News articles from the 11-year period, isolated by the prominence given one frame or another, tended to cite different types of persons as news sources. For example, in the case of the dramatic shifts in favor of the Property-Owner Frame, some of the most frequently-quoted news sources were

President Bush and lawmakers. This provides evidence for strong influence on news media content by official sources.

Evidence for influence of news source on relative frame prominence as a measurable outcome of news content also was demonstrated in this study. In articles that mentioned target conservation advocacy groups but not target property-owner advocacy groups, the mean occurrence of Conservation Frame terms was significantly higher than in articles mentioning only property-owner advocacy groups. Similarly, in articles mentioning target property-owner groups but not mentioning target conservation groups, the mean frequency of Property-Owner Frame terms was significantly higher than in articles mentioning only target conservation groups.

This finding suggests a powerful influence of news sources as on news content. In the analyses reported here, a particular stakeholder's issue frame was present when the stakeholder was simply mentioned. Generally, a stakeholder's issue frame was even more prominent in articles in which a stakeholder representative was quoted indirectly or directly.

The relationship among news sources and frame prominence in media content outcome was examined in two additional conditions—the indirect and direct attribution to, or quotation of, the stakeholder as news source. In these comparisons as well, the preponderant influence of news source on media frame was evident.

Significant differences were found in mean frequencies of Conservation Frame terms and Property-Owner Frame terms between (1) articles giving any attribution (indirect or direct quotation) to representatives of target conservation groups (but not

property-owner groups) and (2) articles with any attribution to property-owner groups but not to conservation group representatives.

News articles in which the first directly quoted news source as a representatives of target conservation groups were compared to news articles in which the first directly-quoted news source was a representative of property-owner advocacy groups. In these comparisons, the occurrence of frame terms was significantly different. When representatives of target conservation groups were directly quoted first, the Conservation Frame terms occurred significantly more frequently. Similarly, when property-owner groups were quoted first, the Property-Owner Frame terms occurred significantly more frequently.

The comparisons of relative frame prominence by news sources provide general evidence for the influence of news sources on issue frame representation in a news article. It is recalled, for instance, that in this study articles mentioning, attributing to, or first directly quoting representatives of either stakeholder—conservationist or property-owner—represented that stakeholder's issue frame more prominently than did articles mentioning, attributing to, or first directly quoting the alternative stakeholder. These observations supported the expected relationship between stakeholders as news sources and relative frame prominence in news coverage.

Some questions for further study also are suggested by some of the patterns observed in frame prominence. Average occurrence of Conservation Frame terms increased from 14.95 to 15.34 to 15.38 under the three conditions of *mention,*

attribution to, and *first direct quoting of* target conservation group or representative thereof. This change is slight, but in the direction that would be expected as stakeholders gain relatively more direct voice in an article.

However, a change occurred in the opposite direction with regard to the Property-Owner Frame terms. Average occurrence per article dropped from 23.17 when property-owner organizations were mentioned to 21.75 and 21.86 when representatives of those same groups received any attribution or were directly quoted first in a news article. Among potential explanations the possibility of a difference among organizations of effectiveness in articulating their issue definition or point of view. This explanation was not examined in this study, though it merits further investigation.

The research reported here provides additional evidence for the pervasiveness of framing—the definition of an issue by selective emphasis of salient aspects. Entman has suggested four locations in which framing occurs—communicator, text, receiver, and culture. This study investigated and found framing by different communicators—conservationists and property-owner advocacy groups—and in text—news coverage relating to wetlands. (Other types of framing—in message reception and in culture—were not addressed specifically in this study, as will be elaborated.

The expectation that framing would tend to occur within a complex issue was confirmed. Certainly, wetlands is a complex issue. It is a science issue, in that even scientists cannot agree on definition of a wetland. It is a risk issue, in that it involves

potential hazards to people and to the things they value. It is an environmental issue, in that it relates to environmental preservation, water quality, wildlife habitat, and diversity of species. It is a legal issue, involving interpretation of Constitutional rights of private property owners. It is a national political issue, at least since the 1988 Presidential campaign if not before.

In the issue of wetlands, the questions are complex. Shall property owners be denied compensation for regulatory restrictions that prevent them from profitable use of their land? On the other hand, how can society be compensated for the loss of species through destruction of wetland habitat?

Studies of communicator framing and news media framing of issues such as this should contribute to deeper understanding of the competing values in complex policy agenda debates. These studies can help diverse stakeholders understand each others' viewpoints, and they can promote development of consensus through fuller understanding of the conflict, thereby moving society closer toward solutions to contemporary challenges.

Implications for these findings apply to journalists in the practice of journalism. As other researchers in framing studies have noted, improved awareness of issue framing may help journalists seek viewpoints from a range of stakeholders when covering complex issues, recognizing that particular news sources tend to hold particular issue definitions and discuss the aspects of the issues that are selectively salient to them.

This study illuminates some of the complexities of the wetlands policy debates,

which may continue for some years to come. Specifically, the wetlands issue frame by two stakeholders—the conservationists and the property owners—are well defined by the Frame Mapping Method, distilling the viewpoints of these two groups from their own words.

The Conservation Frame in the wetlands debate is concerned broadly with preservation of wildlife habitat, protection of threatened and endangered species, and conservation of natural areas. The Property-Owner Frame in the wetlands issue focuses more narrowly on rights of landowners to use their land or be compensated for denial of these rights.

News coverage of the wetlands controversies over 11 years reveals some shifts in relative prominence of the competing conservation and property-owner frames. The wetlands issue that in 1984 was discussed more as a conservation issue received national attention in the 1988 Presidential campaign. Subsequent controversies over delineation regulations were met with protests from private property owners, and discussion of regulation reform—coupled with the visibility afforded the issue by Bush's initial pledge of "no net loss of wetlands"—bolted the issue to increased prominence in news coverage. (After all, the issue then involved the news values of prominence and conflict.) In the process of these debates, the relative prominence of the property-owner frame overtook the conservation frame in the news coverage.

Who framed the news on wetlands from 1984-95? A lot of people, really. Advocacy groups regularly framed the news. Official sources such as the U.S. President and national lawmakers frequently framed the news. And occasionally, a

school teacher in Pennsylvania or a farmer in North Dakota framed the news.

The influence of official sources in affecting news media content is evident in news coverage of wetlands, and this influence merits further study. The influence of advocacy or interest groups as news sources on news media content is demonstrated in these findings.

The notion of the interactive process of news also is supported by these findings, for stakeholders must somehow gain the ear of the journalist before their view can find voice in the media.

The results obtained in this study are consistent with conceptualization of the media and its role in modern society as interactive. Gitlin (1980), one of the early leaders in media framing research, offers this argument (p. 14):

> The study of mass communications effect has had quite enough of Pavlovian stimulus-response psychology, along with its pluralist opposite. Although I may sometimes adopt the convenience language of a single cause producing a single effect, I am talking not about determined objects "having impacts" on each other, as if movements and media were billiard balls, but about an *active* movement and an *active* media pressing on each other, sometimes deliberately, sometimes not, in a process rich with contradiction and self-contradiction, in process developing in historical time.

While the conceptual contribution of this dissertation provides some integration of understanding related to framing, media sociology, and agenda building, perhaps the most notable contribution of this study is its demonstration of the Concept Mapping procedures and the application introduced as the Frame Mapping Method for identifying, specifying, measuring, and comparing frames and themes in text. Concept Mapping procedures in general, and the Frame Mapping Method in particular, appear to answer the need for more precise methods for conducting frame analysis and for

investigating media content. The need for improved methods to identify, measure, and compare frames and media content has been noted by a number of researchers.

This study demonstrated how Concept Mapping can be used to identify distinct themes or "clusters of messages" in text through the mathematical analysis of term co-occurrence and the extraction of principal components for derivation of multidimensional scaling configurations of term data structure. Furthermore, the use in Frame Mapping of constructed source identifier terms was illustrated in identification of distinctive issue frames by different sources. This technique can be applied in frame analysis studies to answer the need cited by Tankard, Maher, Hendrickson, and others for more rigorous methods to investigate media content as an outcome.

As this study demonstrated, these methods can be used to analyze relative prominence of competing issue frames in text at a range of levels of analysis. In this study, comparisons of relative prominence of the Conservation Frame and the Property-Owner Frame were made by an entire 11-year period, by annual periods, and by individual articles. The flexibility of the term searching, coding, and multidimensional scaling procedures suggest that application of these methods is limited only by the creative imagination of the researcher.

The study demonstrates the usefulness of the Frame Mapping Method, a unique application of Concept Mapping, as an effective method for frame specification, measurement, and comparison that answers a critical need in the advancement of understanding through research.

Limitations of Study

As a study in content analysis, this study shares a limitation of all such research. "Content analysis alone cannot serve as the basis for making statements about the effects of content on an audience" (Wimmer & Dominick, 1991, p. 160). Rather, content analyses are useful for purposes such as describing media content, and testing hypotheses of media characteristics.

This study does not address how messages are perceived or interpreted. This research focuses, instead, on the frames contained in the manifest content of news releases by conservation and property-owner groups and of news coverage. Though this research does not address how different people may process information relating to different issue frames, other studies focus on these matters. Research in this area is reported by Tversky and Kahneman (1981), Kahneman and Tversky (1984), and Wilson, Chaiken, and Axsom (1986).

The limits of content analysis to focus only "on the encoders rather than the decoders" are acknowledged, without apology, by Gamson (1985). "That different stories may be understood in different ways by the viewer is beside the point. Content analysis should be agnostic on the issue of how news is understood and recognize that this can be learned only by studying the audience" (p. 158).

Audience studies are of continuing and increasing importance in research concerned with political communication and public opinion. Kosicki and McLeod (1990) well note the needed shift "from simple notions of 'media use' affecting knowledge of idiosyncratic 'facts'." They observe, "we need to focus on complex

relationships among the ways people use, explain, evaluate, and make sense of the news, and their understanding and organization of the larger world it reports" (p. 81).

The precision of the Frame Mapping Method described in this report may support continued research in audience studies by application of the methods in conjunction with additional analytic procedures.

The complexity of influences in political communication is noted by Chaffee: "I see most of the important research concepts of the past two decades as outgrowths of two themes: dynamic processes and the role of information" (personal communication, cited in Beniger & Jones, 1990, p. 158).

These findings demonstrate the influence on news media content by who is quoted in news articles. However, this study does not illuminate how decisions are made relative to who is quoted. Analysts Paletz and Entman (1981) suggest, in fact, that two "fundamental determinants of media content" are at work:

> On one side are the media, with their goals, practices, customs; on the other side are the politicians, interest groups, activists, whom the media cover, who have their own goals and exert their own pressures. Out of this relationship, sometimes tempestuous, often symbiotic, emerges the media's overtly political content with its accompanying effects or power. (p. 10)

News presentation, Paletz and Entman conclude, is a "widely neglected, yet vital topic" (1981, p. 10).

Frame Mapping serves effectively to probe text for the particular words in which frames are manifested, while it does not address all possible characteristics of text relating to frame presentation, such as story structure. As Priest (1995b, personal communication) and others have noted, these related matters also merit study.

Opportunities for Further Research

This computer-assisted content analysis was conducted on the single topic of wetlands, and its news coverage analysis was limited to 11 years of coverage in the single source of Associated Press articles. Further research is suggested in replication of these frame analysis procedures addressing a variety of additional issues or topics, and investigating coverage in a variety of additional news sources.

While the Associated Press is a major provider of news in the United States and around the world, coverage in other news outlets also merits the attention of these kinds of studies. Coverage of ongoing issues, for instance, in the prestige newspapers, major daily newspapers, newsmagazines, and specialty magazines all can be studied and compared with these procedures.

This study focused on wetlands; however, a host of additional complex issues in which multiple stakeholders compete for frame dominance—in public opinion and policy development—merit investigation. These Frame Mapping and frame analysis methods may be used to compare stakeholder frames that are involved, to help determine what factors influence news media coverage on the issue, and to assess changes in relative prominence occurring in news coverage over time.

Additionally, framing studies may be conducted to advance understanding of the policy agenda building process.

For instance, issues may vary along a number of dimensions, which may be investigated in framing studies. In the agenda-building perspective advanced by Cobb and Elder (1983) an issue is defined as "a conflict between two or more identifiable

groups over procedural or substantive matters relating to the distribution of positions or resources" (p. 82). According to Cobb and Elder, issues can vary along the five key dimensions of degree of specificity, scope of social significance, extent of temporal relevance, degree of complexity, and degree of categorical precedence.

An issue's specificity is determined by the level of abstraction in its definition. Social significance is similar to the notion of impact and indicates the peculiarity or general affect of an issue. Temporal relevance concerns whether an issue holds short-term or enduring import. Complexity "concerns how an issue will be delineated along a continuum from the highly complex and technical to the simple and easily understood" (Cobb & Elder, 1983, pp. 98-99). Categorical precedence refers to whether an issue is routine in resemblance of earlier issues or whether it is relatively extraordinary.

Studies that examine specifically these issue dimensions relative to issue framing questions would contribute to improved understanding of the nature of framing and development of political agendas—both systemic, or public, and institutional or governmental (for formal decision making).

Suggested also are studies that further illuminate the relationship between journalists and news sources—while this relationship has been compared to a dance and a tug-of-war, it is not clear who is leading or winning. These findings demonstrate influence by news sources on news content. News sources (groups and their representatives who are discussed and interviewed by journalists) appear to have powerful influence on aiming or directing the "searchlight" of news that was observed

decades ago by Walter Lippmann (1922/1965). He compared the press to the "beam of a searchlight that moves restlessly about, bringing one episode and then another out of darkness into vision" (p. 229). It is argued, on the other hand, that journalists influence the content of news coverage by their selection of persons to interview as sources, and by the questions they ask these news sources. That the selection of sources influences the content of news is clear. But, how are the sources selected? This topic merits continued study by researchers.

Questions relating to who frames the news feed into the overarching question of the role of media in society, which remains a central focus of researchers in communication and related fields. Framing studies may be approached and interpreted to bring evidence to bear on the nature of the role of media in society.

Varying viewpoints in this area "range from portraying the media as a major force in policymaking to viewing the press as mainly a transmitter of the government's agenda" (Genest, 1992, p. 18). Genest reviews the literature on the relationship between the press, the public, and the government, comparing and contrasting three theoretic approaches that attribute varying amount of influence to the media—*agenda setting, agenda building,* and an approach he describes as *agenda reflecting,* which is more commonly referred to as hegemony.

The differences in how the theories in portray the policy making power of the press are related to three separate dimensions: "First, *where* the press gets its information; second, the *tone and* manner in which that information is presented; and finally, the overall *impact* on policy and the public" (Genest, 1992, p. 20). Agenda

setting theory attributes the greatest influence and power to the press while agenda reflecting theory suggests that the media merely reflect and relate the government's agenda. In between these two extreme viewpoints is agenda building, which "as theory, holds that the media set a process in motion by laying a foundation of knowledge for the public" (p. 27).

As noted previously, the agenda building view of the media is a more process-oriented view, emphasizing interaction and continuous feedback loops. In this theoretic view the press uses government sources but also others "to help interpret official policy, providing context, emphasis, and tone for the government defined issues" (Genest, 1992, p. 27).

The agenda-building view of policy development is consistent with conceptualization of communication and the mass media in terms of process rather than effects. Nimmo (1978) emphasizes the *process* aspect of communication:

> Process is flow, change, and flux in the relation of activities to one another. In postulating what communication is all about (i.e., process), Barnlund [1970] describes the character of process itself—*evolving, dynamic, continuous, circular, unrepeatable, irreversible,* and *complex* [italics added]. As process, communication has no starting or stopping point; it pervades personal interpretations, social exchanges, and politics endlessly. It has no readily discernible causes for observed effects. (p. 6)

The questions of who frames the news, then, are relevant to the role that news—which is framed through a complicated process—assumes in society. News framing relates to media performance and normative standards for the mass media as well.

Eight normative standards for the mass media in democratic societies, are

identified by (Gurevitch & Blumler, 1990, p. 270) and paraphrased by McLeod, Kosicki, and McLeod (1994), including:

> (1) Surveillance of contemporary events that are likely to impinge, positively or negatively, upon the welfare of citizens. (2) Identification of key sociopolitical issues including their origins and possibilities for resolution. (3) Provision of platforms for advocacy by spokespersons for causes and interests. . . . (p. 126)

They identify interest in the language of media content as a trend in political communication research.

"We can study the latent aspects of media content by analyzing the frames used to shape the story," the authors observe (McLeod, Kosicki, & McLeod, 1994, p. 133). News coverage "involves selecting a few developments that are most likely to impinge on the welfare of citizens" (p. 150).

The function of democracy, in fact, depends on matters relating to media framing. As observed by McLeod, Kosicki, and McLeod (1994), "Democratic change depends on consideration of a wide range of views and proposals. The media thus could be judged on how well they provide for 'intelligible and illuminating platforms' from which politicians and spokespersons for various causes can make appeals" (p. 152).

An early call to study the complex interaction between the media, government, and the public, is given by Lang and Lang (1953): "Above all, a more complex formulation of the relations among public opinion, the mass media, and the political process, is vital for the understanding of many problems in the field of politics" (p. 11).

In the two decades following emerged "a cross-discipline field of political communication," with courses taught in departments of political science, sociology, mass communication, speech communication, journalism, and social psychology and establishment of a Political Communication Division in the International Communication Association in 1973 (Nimmo, 1978, p. iii). During this period researchers began to investigate areas in which the performance and role of the mass media and the function of democracy converge.

However important the interaction of public opinion, the mass media, and the political process was when the Langs noted it more than 40 years ago, the relationships are even more consequential today. Orren (1986) cites the timeliness of studying press-governmental relations or "interplay" as both the government and the press "have grown in complexity and influence" and "size and sophistication" (p. 1) in recent years.

This area remains one of critical relevance for continued study. As Linsky (1986) argues, "What is most obvious is that understanding and thinking about the role of the media in public affairs is important work that has just begun" (p. 223).

Studies employing the methods introduced and illustrated here can carry forward the work of science to build theory and to improve understanding of the relationships within, and between, framing and news content.

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APPENDICES

APPENDIX A

GLOSSARY

Agglomerative Hierarchical Clustering. In cluster analysis, the incremental aggregation of groups, based on similarity measures, "into bigger and bigger clusters until all cases are members of a single cluster" (Norušis, 1990, p. B-157). Divisive hierarchical clustering is less common (Anderberg, 1973).

Algorithm. A mathematical procedure used to solve a problem (Scheffé, 1959); "a procedure consisting of a finite set of unambiguous rules which specify a finite sequence of operations that provides the solution to a problem, or to a specific class of problems" (Kronsjö, 1987, p. 1); a "recipe" or set of instructions, generally constrained to halt after a certain number of steps, "written in a formal language such as LISP or FORTRAN" (Foster, 1992, p. 1).

Analysis of Variance. Also referred to as *ANOVA,* for *ANalysis Of VAriance,* statistical techniques for determining whether a significant or nonchance difference exists among several sample means; based on a ratio of the variance occurring between the sample means to the variance occurring within the sample groups. "A large *F* ratio, that is when the variance between is larger than the variance within, usually indicates a nonchance or significant difference" (Sprinthall, 1982, p. 454). Also described in Kerlinger (1986) and Scheffé (1959).

AP News. A database, accessible through the DIALOG service, including the full text (from July 1984 to present) of Associated Press coverage of national, international, and business news *(DIALOG Database Catalogue,* 1995).

ASCII. The acronym for American Standard Code for Information Interchange; a commonly-used format in transferring electronic files *(Cybertalk,* 1995).

Associated Press. Founded in 1848, a "not-for-profit cooperative news service" involving and serving "more than 1,700 newspapers and 6,000 broadcast members in the United States" (Goldstein, 1995, p. 318); the "largest supplier of general interest news to the media worldwide, serving more than 15,000 newspapers and broadcast outlets in 115 countries around the world" *(DIALOG Database Catalogue,* 1995, p. 23). The Associated Press is a cooperative owned by media members (Hough, 1988).

Attribution. Reference to the source of a news article or information within an article; to attribute is to identify the source of information (Hough, 1988).

Cluster Analysis. Statistical procedures used to group similar objects together, to identify homogeneous groups or clusters (Norušis, 1994).

Concept Mapping. In computer-assisted content analysis, a set of multidimensional scaling techniques designed for identifying and comparing relative themes and frames in text by data structure of term co-occurrence; developed by Miller (1995a and 1995b), employs VBPro computer programs including VBMap.

Configuration. In multidimensional scaling, a meaningful organization of a set of points, a map (Schiffman, Reynolds, & Young, 1981).

Conservation Frame. In this study on the wetlands debates, the selective definition of the issue by conservationists, manifest in terms used by representative conservation advocacy groups in discussing the issue.

Conservation Frame Index. In this study, an index of scores for individual cases or articles representing the frequency of occurrence of Conservation Frame terms.

Conservation Frame Purity Index. In this study, a constructed index of scores attained for individual cases or articles by frequency of occurrence of Conservation Frame terms from which is subtracted the frequency of Property-Owner Frame terms.

Construct. A "combination of concepts that is created to describe a specific situation" (Wimmer & Diminick, 1991, p. 453).

Cosine Coefficient. A similarity coefficient that measures overall resemblance or similarity between each pair of objects in the data set. (Other similarity measures include the average Euclidean distance coefficient, the coefficient of shape difference, the correlation coefficient, and the Bray-Curtis coefficient.) The cosine coefficient is defined on the range of -1 to 1 indicating minimum similarity to maximum similarity (Romesburg, 1984).

Dateline. Preceding the first sentence of a news article, the location of the origin of a news article; called a dateline because originally it included a date as well as a place, a tradition continued at this writing by *The New York Times* (Hough, 1988). "A dateline should tell the reader that the AP obtained the basic information for the story in the datelined city" (Goldstein, 1955, p. 55).

Degrees of Freedom (df). In statistical analysis with interval data, the number of scores free to vary after appropriate restrictions are placed on data (Sprinthall, 1982); the "latitude of variation a statistical problem has" (Kerlinger, 1986, p. 155).

Democracy. Derived from the Greek *demos,* which means "the people," and *kratia,* indicating "rule" or authority, the word literally means "rule by the people" (Lyons, Scheb II, & Richardson Jr., 1995, p. 7); "a system in which the governed are able to have a significant influence on public policy decisions made by those who hold formal positions of authority" (Nimmo & Ungs, 1979, p. 18).

Dependent Variable. In an antecedent-consequent relationship, the consequent variable, considered a response measure in the social sciences (Sprinthall, 1982).

DIALOG. An online information retrieval service encompassing more than 450 databases, including *AP News* and *PR Newswire,* operated by Knight-Ridder Information, Inc. Designed by Lockheed Information Systems and formerly known as Lockheed Dialog, made available commercially in 1972 *(DIALOG Database Catalogue,* 1995; Salton, 1989; Borgman, Moghdam, & Corbett, 1984).

Dimension. In multidimensional scaling, a characteristic that serves to define a point in perceptual space; a coordinate axis through the space (Schiffman, Reynolds, & Young, 1981).

Direct Quote. Repetition of a speaker's exact words, indicated by enclosure in quotation marks. In a news article, the speaker of *direct quotes* and *indirect quotes* are identified as the source of the information; the identification of a speaker in a news article is referred to as a *speech tag.* Compare to *indirect quote* (Hough, 1988).

Direction. In multidimensional scaling, a vector (a quantity with both magnitude and direction) relating to an attribute through a perceptual space (Schiffman, Reynolds, & Young, 1981).

Eigen. Means 'characteristic' or 'special' in the German language, reflected in the terms *eigenvector, eigenvalue,* and *eigenanalysis* (Parlett, 1980).

Eigenanalysis. "A foundation of explanatory factor analytic methods" involving obtaining the eigenvectors and eigenvalues of a square matrix, or taking a set of correlated variables and creating a set of uncorrelated variables from them (Bernstein, 1988, p. 58).

Eigenvalue. Also referred to as 'characteristic value' or 'invariant value,' describes the variance explained by each factor in eigenanalysis. Correlation matrices can be expressed as the product of eigenvalues and eigenvectors (Bernstein, 1988).

Eigenvector. Another name for principal component or principal axis in eigenanalysis; also referred to as 'characteristic vector' or 'invariant vector' (Bernstein, 1988).

Frame. The selective definition or representation of an event, issue, or idea.

Frame Mapping Method. A special application of Concept Mapping, a new and more precise method for specifying, measuring, and comparing frames; mathematically based on cluster analysis and multidimensional scaling; uses VBPro computer programs including VBMap; developed by Miller (1995a and 1995b) and Miller and Riechert (1994).

Hits. "Items returned from the search that match your search terms" (Internet Searcher's Glossary, *Syllabus,* 1996, p. 38).

http://. The beginning of World Wide Web addresses for resources accessed by Hypertext Transfer Protocol (Ivey, 1996).

Indirect Quote. A paraphrase or summary of what a speaker said, not in the same words and not set off by quotation marks. In a news article, the speaker of *indirect quotes* and *direct quotes* are identified as the source of the information; the identification of a speaker in a news article is referred to as a *speech tag.* Compare to *direct quote* (Hough, 1988).

Interest Groups. Private organizations "formed to advance the shared interests of their members" (Lyons, Scheb II, & Richardson Jr., 1995, p. 271). Interest groups that get involved in the process of policy decisions "are sometimes referred to as stakeholders since they stand to win or lose as a result of the policy decisions" (Lyons, Scheb II, and Richardson Jr., 1995, p. 475).

Interval Data. "Data (measurements) in which values are assigned such that both the order of the numbers and the interval between numbers are known. Thus, interval data not only provide information regarding greater than or less than status, but also information as to how much greater or less than" (Sprinthall, 1982, p. 458).

Macroenvironment. "The larger societal forces that affect the whole microenvironment—demographic, economic, natural, technological, political, and cultural forces" (Kotler & Armstrong, 1989, p. 637).

Matrix. "A rectangular array of numbers" (Bernstein, 1988, p. 59). A correlation matrix "can be expressed as the product of eigenvalues and associated eigenvectors. The eigenvalues, in turn, describe the variance explained by each factor" (Bernstein, 1988, p. 174).

Mean. A measurement of central tendency, or the arithmetic average calculated by adding total scores of each case in a particular variable and dividing by the number of cases (Springthall, 1982).

Mean Squares. In analysis of variance, the variance *between groups* and *within groups,* obtained by dividing the sums of squares by the degrees of freedom. The *between mean square* divided by the *within mean square* gives the *F* ratio or variance ratio (Kerlinger, 1986).

Median. The midpoint of a distribution of scores (Wimmer & Dominick, 1991).

Metric. In multidimensional scaling, refers to the scale of measurement of observed data; with metric multidimensional models, scale of measurement must be in interval scale (MacCallum, 1974).

Mode. The score that occurs most often in a frequency distribution (Wimmer & Dominick, 1991).

Multidimensional Scaling (MDS). A mathematical tool or procedure for representing similarities of objects spatially as in a map (Schiffman, Reynolds, & Young, 1981).

Orthogonal. From the Greek *orthos,* meaning right, and *gōnia,* meaning angle, indicates being right-angled or having right angles. In multidimensional scaling, refers to being perpendicular; most multidimensional scaling spaces are developed with orthogonal axes (Schiffman, Reynolds, & Young, 1981). Orthogonality is important in matrix computations; "orthogonal vectors are maximally independent for they point in different directions" (Golub & Van Loan, 1989, p. 70).

Parsimony Principle. "The premise that the simplest method is the most preferable (also known as *Occam's razor)"* (Wimmer & Dominick, 1991, p. 458).

Phenomenology. A "historical movement born in Germany with Husserl, Jaspers, and Heidegger, sustained in France by Merleau-Ponty, Sartre, and de Beauvoir, and complemented by a growing number of American scholars in the human sciences" (Lanigan, 1988, p. 7). The American tradition includes what William James called *pragmatism* and later radical *empiricism* (Lanigan, 1988, citing Merleau-Ponty). Writings of James and Schutz (including *The Phenomenology of the Social World,* published in 1932) were credited with inspiring Goffman's ideas.

Political Communication. "The exchange of symbols and messages between actors and institutions, the general public, and news media that are the products of or have consequences for the political system" (McLeod, Koskicki, & McLeod, 1994, pp. 125-126, citing Meadow).

Politics. "The process by which people govern themselves" (Lyons, Scheb II, & Richardson Jr., 1995, p. 3).

Post Hoc Comparisons. Mathematical tests, such as Tukey's test, the Newman-Keuls test, and the Scheffé test, performed to determine which populations are different statistically from the others, usually conducted after analysis of variance indicates a difference among the subjects compared (Frank & Althoen, 1994; Kerlinger, 1986). Also referred to as *follow-up* tests (Williams, 1986) and *a posteriori* comparisons (Bernstein, 1988).

Principal Components. Another name for eigenvectors, "the axes of the elliptical pattern typically descriptive of a scatterplot" (Bernstein, 1988, p. 58).

PR Newswire. A database, accessible through the DIALOG service, including the full text (from May 1987 to present) of news releases from companies, public relations agencies, trade associations, government and nongovernment agencies, and other sources; operated by PR Newswire Association, "the nation's first and largest press communication network" *(DIALOG Database Catalogue,* 1995, p. 115).

Property-Owner Frame. In this study of the wetlands debates, the selective definition of the issue by property owners, manifest in terms used by representative property-owner advocates in discussing the issue.

Property-Owner Frame Index. In this study, an index of scores for individual cases or articles representing the frequency of occurrence of Property-Owner Frame terms.

Property-Owner Frame Purity Index. In this study, a constructed index of scores attained for individual cases or articles by frequency of occurrence of Property-Owner Frame terms from which is subtracted the frequency of Conservation Frame terms.

Scheffé Test. One of several widely used post hoc tests; the Scheffé test does not require samples of the same size, unlike Tukey's test, or the Newman-Keuls test (Frank & Althoen, 1994).

Search File. In VBPro, a file created with a word processing program that includes term(s) for which a text file will be searched or analyzed using the VBPro search procedure. Search files may include up to 1,000 terms and can be divided into any number of categories for which the search procedure will produce descriptive data (Miller, 1995b).

Search Intermediary. In online searches, "the person who actually performs the search and interacts with the retrieval system," while the *client* or *requestor* is "the person making the information request." As online information retrieval systems require considerable training, "most searching is done by specialists employed by libraries or information centers" (Borgman, Moghdam, & Corbett, 1984, p. 7).

Search Procedure. In VBPro, the procedure used to search key terms in context for analysis of text. Output of the search procedure includes descriptive data on the text—including the number of occurrences of each key term of interest; the number of sentences, paragraphs, and cases in the text; the number and percentage of sentences, paragraphs, and cases containing the term(s); and, if specified, the key term(s) tagged or marked with arrows within the text (Miller, 1995b).

Search Strategy. In online searches, the explicit statement of the concepts in the information requested and the relationship between them. Searches may use multiple terms for a single concept or use multiple logical connectors (Borgman, Moghdam, & Corbett, 1984).

Significance. Departure "significantly" from chance expectation at statistically determined ranges of probability of *p,* such as $< .05$, or fewer than 5 out of 100 cases (Kerlinger, 1986).

Space. In multidimensional scaling, the set of all potential points defined by a set of dimensions (Schiffman, Reynolds, & Young, 1981).

Square Matrix. A matrix in which the number of rows equals the number of columns (Wimmer & Dominick, 1991).

Stakeholders. Groups in the policy-making process "that stand to win or lose as a result of a policy decision" (Lyons, Scheb II, & Richardson Jr., 1995, p. 497).

Technological Research. The research orientation originating from the methodloigcal domain, concerned primarily with "building tools by wehich we can gather and analyze information about the phenomena of our field," contrasted with basic and applied research, originating from the conceptual or substantive domains, respectively (Brinberg & McGrath, 1985, p. 86).

Token. In literature searching and information retrieval, refers to the number of *different occurrences of words,* in a text or set of texts (Gerrie, 1983). The terminology was introduced by Doyle (1961).

***t*-Ratio.** Statistical test used to determine whether significant or nonchance difference can be detected between two means (Sprinthall, 1982).

Two-tail (nondirectional) Test. "The use of both tails of the distribution for testing the null hypothesis. For example, with the *t* test, if the direction of the difference is not specified in the null hypothesis, then the critical value of the *t* statistic, for a given number of degrees of freedom, is taken from both tails of its distribution" (Sprinthall, 1982, p. 464).

Type. In literature searching and information retrieval, refers to the number of *different words* in a particular text of set of texts (Gerrie, 1983). The terminology was introduced by Doyle (1961).

Type I Error. Rejection of the null hypothesis when it should be accepted (Wimmer & Dominick, 1991).

Type II Error. Acceptance of the null hypothesis when it should be rejected (Wimmer & Dominick, 1991).

URL. Abbreviation for Universal Resource Locator, "an address used to specify an application and location of some Internet service" *(Cybertalk,* 1995, p. 18).

Variance. "A measure of variability that indicates how far all of the scores in a distribution vary from the *mean.* Variance is equal to the square of standard deviation" (Sprinthall, 1982, p. 464).

Variance Ratio. In analysis of variance, the *F* ratio obtained "by dividing the *within* or error variance of mean square into the *between* variance or mean square," used to determine statistical significance of differences (Kerlinger, 1986, p. 213).

VBMap. A computer program within the VBPro set of programs for concept mapping or multidimensional scaling of concepts. The concept mapping of words or phrases requires output from the VBPro coding procedure and is based on the cosine co-occurrence matrix of terms. Derived eigenvalues in the VBMap output may be used as coordinates for plotting the positions of key terms or phrases in multidimensional space (Miller, 1995a).

VBPro. A family of computer programs designed to help researchers analyze natural language text with IBM Personal Computers. Useful for qualitative or quantitative analysis of any text in standard ASCII format, the programs are compatible with standard statistical packages such as SPSS™ or SAS™ (Miller, 1995b). The VBPro family of computer programs includes VBMap (Miller, 1995a).

Vector. A series of data points represented by a line in space (Wimmer & Dominick, 1991).

Wetlands. Diverse types of areas that are often covered by shallow water or water-saturated and that support plant life adapted to these conditions (Nicholas, 1992). Wetlands "are among the most important ecosystems on earth" (Mitsch & Gosselink, 1986, p. 3): "Wetlands are sometimes described as the 'kidneys of the landscape' for the functions they perform in hydrological and chemical cycles and the downstream receivers of wastes from both natural and human sources. They have been found to cleanse polluted waters, prevent floods, protect shorelines, and recharge groundwater aquifers. Furthermore, and most important to some, wetlands play a major role in the landscape providing unique habitats for a wide variety of flora and fauna. While the values of wetlands for fish and wildlife protection have been known for several decades, some of the other benefits have been identified more recently."

Zipf Law. Also referred to as the rank frequency law; named for psycholinguist George Zipf who made the observation "that when distinct words in some sample texts are arranged in decreasing frequency order, and rank orders are assigned (that is, rank 1 is assigned to the most frequent word, rank 2 to the next most frequent word, and so on), then the frequency of occurrence $f(r)$ of the rth word in frequency order multiplied by rank r is approximately constant, or

$$r \cdot f(r) \sim \text{constant}$$

The rank-frequency formulation can also be expressed in probabilistic terms" (Salton, 1989, p. 106).

APPENDIX B

CONSERVATION ADVOCACY GROUP

NEWS RELEASES

The following conservation advocacy group news releases mentioning *wetlands* were obtained in full text from the PR Newswire database through the DIALOG service and were included in the analysis.

Case #	Release Date	Release Time	Number of Words	Organization
#0009C	05-16-95	21:39 EDT	0325	Sierra Club
#0011C	05-15-95	18:01 EDT	0206	American Oceans Campaign
#0021C	04-22-95	12:52 EDT	1084	American Rivers
#0026C	04-18-95	10:35 EDT	1497	American Rivers
#0073C	01-17-95	12:10 EST	0812	American Rivers
#0078C	12-22-94	11:25 EST	0631	American Rivers
#0108C	10-12-94	13:54 EDT	0465	Sierra Club
#0140C	07-14-94	11:49 EDT	0711	American Rivers
#0142C	07-13-94	10:24 EDT	0656	American Rivers
#0143C	07-12-94	16:27 EDT	0531	American Rivers
#0145C	07-08-94	13:58 EDT	0448	American Rivers
#0149C	06-29-94	10:23 EDT	0541	American Rivers
#0160C	06-13-94	10:57 EDT	0668	American Rivers
#0161C	06-10-94	11:13 EDT	0314	American Rivers
#0170C	05-26-94	14:45 EDT	0503	American Rivers
#0181C	05-05-94	11:29 EDT	1161	N.C. Nature Conservancy
#0188C	04-22-94	14:30 EDT	0331	National Audubon Society
#0207C	03-26-94	21:00 EST	0437	National Audubon Society
#0241C	02-14-94	11:38 EST	0829	Am. Soc. of Landscape Architects
#0252C	01-07-94	13:36 EST	0480	National Audubon Society
#0258C	12-21-93	13:16 EST	0594	Sierra Club
#0259C	12-17-93	07:31 EST	0364	National Audubon Society
#0273C	11-19-93	17:23 EST	0475	National Audubon Society
#0284C	10-27-93	11:12 EST	0417	Sierra Club
#0335C	07-26-93	16:52 EDT	0356	National Audubon Society
#0392C	04-23-93	10:02 EDT	0686	The Nature Conservancy
#0447C	12-11-92	11:04 EST	0265	Sierra Club
#0466C	10-08-92	12:10 EDT	0579	The Nature Conservancy
#0467C	10-08-92	12:05 EDT	0684	The Nature Conservancy
#0468C	10-08-92	07:19 ET	0810	The Nature Conservancy
#0487C	08-31-92	12:26 EDT	0354	The Nature Conservancy
#0563C	04-24-92	15:15 EDT	0217	National Audubon Society
#0566C	04-23-92	18:15 EDT	0654	Sierra Club
#0590C	03-24-92	07:03 EDT	0396	Sierra Club
#0603C	03-04-92	13:02 EST	0346	National Audubon Society
#0609C	02-14-92	12:19 EST	0098	Sierra Club
#0635C	01-10-92	13:01 EST	0362	National Audubon Society
#0636C	01-09-02	15:58 EST	0670	National Audubon Society
#0678C	11-07-91	15:12 EST	0397	National Audubon Society
#0684C	11-04-91	15:15 EST	0187	National Audubon Society
#0799C	06-18-91	09:00 EDT	0397	National Audubon Society

#0803C 06-03-91	09:06 EDT	2766	Sierra Club
#0804C 05-31-91	11:04 EDT	0679	National Audubon Society
#0826C 04-16-91	12:37 EDT	1024	National Audubon Society
#0845C 03-04-91	13:16 EST	0514	National Audubon Society
#0871C 12-17-90	10:19 EST	0351	The Nature Conservancy
#0893C 11-08-90	12:38 EST	0585	Wildlands Conservancy
#0894C 11-07-90	16:50 EST	0585	Wildlands Conservancy
#1016C 01-18-90	16:35 EST	0603	National Audubon Society
#1026C 12-13-89	11:57 EST	0350	National Audubon Society
#1076C 06-22-89	10:04 ET	0276	National Audubon Society
#1077C 06-15-89	08:21 ET	0375	National Audubon Society
#1082C 06-08-89	11:19 ET	0080	National Audubon Society
#1083C 06-02-89	17:19 ET	0299	The Nature Conservancy
#1097C 03-30-89	16:20 EST	0337	National Audubon Society
#1155C 10-03-88	15:19 ET	0375	World Wildlife Fund
#1175C 06-24-88	12:38 ET	0516	World Wildlife Fund
#1220C 06-26-87	(not listed)	0631	National Audubon Society

APPENDIX C

PROPERTY-OWNER ADVOCACY GROUP

NEWS RELEASES

The following property-owner advocacy group news releases mentioning *wetlands* were obtained in full text from the PR Newswire database through the DIALOG service and were included in the analysis.

Case #	Release Date	Release Time	Number of Words	Organization
#0007P	05-19-95	08:28 EDT	0300	Ohio Farm Bureau
#0041P	03-29-95	10:47 EST	0688	Pennsylvania Farm Bureau
#0046P	03-22-95	11:57 EST	0292	National Cattlemen's Association
#0055P	03-09-95	16:05 EST	0389	Pennsylvania Farm Bureau
#0199P	04-14-94	17:44 EDT	0383	Ohio Farm Bureau
#0226P	03-07-94	11:27 EST	0538	Pennsylvania Farmer's Bureau
#0228P	03-03-94	11:56 EST	0748	Pennsylvania Farm Bureau
#0233P	02-24-94	10:48 EST	0447	Pennsylvania Farm Bureau
#0246P	01-26-94	11:26 EST	0284	Ohio Farm Bureau Federation
#0263P	12-06-93	17:23 EST	0475	Calif. Farm Bureau Federation
#0321P	08-25-93	15:27 EDT	0386	Pennsylvania Farmers Association
#0402P	03-29-93	17:23 EST	0639	Pennsylvania Farmers Association
#0412P	03-11-93	14:37 EST	0664	Pennsylvania Farmers' Assoc.
#0432P	01-14-93	20:16 EST	0558	Am. Farm Bureau Federation
#0456P	11-13-92	11:05 EST	0165	Pennsylvania Farmers Association
#0500P	07-31-92	16:20 ET	0234	Am. Farm Bureau Federation
#0522P	06-30-92	13:13 EDT	0822	Pennsylvania Farmers Association
#0597P	03-13-92	15:43 EST	0247	Ohio Farm Bureau
#0605P	02-27-92	11:25 EST	0410	Pennsylvania Farmers Association
#0617P	01-29-92	13:18 EST	0531	Am. Farm Bureau Federation
#0630P	01-13-92	22:12 EST	0518	Am. Farm Bureau Federation
#0631P	01-13-92	21:50 EST	0524	Am. Farm Bureau Federation
#0632P	01-13-92	17:43 EST	0713	Am. Farm Bureau Federation
#0658P	11-25-91	16:51 EST	0211	Ohio Farm Bureau
#0677P	11-08-91	14:58 EST	0227	Am. Farm Bureau Federation
#0728P	09-16-91	13:20 EDT	0320	Pennsylvania Farmers' Assoc.
#0735P	09-12-91	11:04 EDT	0098	Pennsylvania Farmers' Assoc.
#0755P	08-19-91	18:05 EDT	0561	Am. Farm Bureau Federation
#0772P	08-02-91	17:30 EDT	0408	Am. Farm Bureau Federation
#0784P	07-16-91	09:49 ET	0278	Am. Farm Bureau Federation
#0785P	07-15-91	16:40 EDT	0151	Pennsylvania Farmers' Assoc.
#0796P	06-20-91	13:46 EDT	0480	Am. Farm Bureau Federation
#0801P	06-13-91	16:39 EDT	0247	Am. Farm Bureau Federation
#0812P	05-07-91	10:15 EDT	1118	Pennsylvania Farm Bureau
#0841P	03-12-91	09:32 EST	0417	Ohio Farm Bureau
#0843P	03-07-91	10:17 EST	0406	Pennsylvania Farmers' Assoc.
#0847P	03-01-91	09:45 EST	0409	Pennsylvania Farmers' Assoc.
#0934P	08-20-90	13:15 EDT	0885	Am. Farm Bureau Federation
#0936P	08-06-90	14:57 EDT	0487	Pennsylvania Farmers' Assoc.
#0989P	04-02-90	17:01 EDT	0525	Pennsylvania Farmers' Assoc.
#0994P	03-28-90	11:05 EST	0518	Pennsylvania Farmers' Assoc.

#1017P 01-18-90	14:48 EST	0320	Pennsylvania Farmers' Assoc.
#1034P 11-15-89	15:46 EST	0401	Pennsylvania Farmers' Assoc.
#1135P 11-16-88	16:20 ET	0355	Pennsylvania Farmers' Assoc.

APPENDIX D

LIST OF ASSOCIATED PRESS ARTICLES

ON WETLANDS, 1984-95

The following news articles mentioning *wetlands* were distributed by The Associated Press (July 1984 to June 1995) and were included in the analysis reported here (*n* = 1,465). Articles listed in Appendix D were downloaded in full text from the *AP News* database through the DIALOG service in online searches based on inclusion of the term *wetlands*. Articles with case numbers #2001 - #2071 were downloaded on August 4, 1995. Articles with case numbers #0001 - #1617 were downloaded on May 10, 1995. Asterisks in the list below indicate skipped case numbers or excluded articles (decision rules for exclusion are discussed in the section on *Frame Analysis of News Coverage—Obtaining and Preparing the Data* in Chapter IV).

Case #	Release Date	Release Time	Number of Words	Topic
*				
#2033	06-27-95	01:19 EDT	0828	Legislation issues
#2034	06-20-95	17:23 EDT	0570	House action
#2035	06-20-95	15:46 EDT	0550	House action
#2036	06-16-95	04:10 EDT	0593	Discord among lawmakers
#2037	06-15-95	17:41 EDT	0780	Discord among lawmakers
#2038	06-15-95	17:10 EDT	0699	Discord among lawmakers
*				
#2040	06-15-95	07:38 EDT	0598	Farm bill legislation
#2041	06-15-95	02:21 EDT	0592	Farm bill legislation
#2042	06-12-95	16:32 EDT	0606	Military base closings
#2043	06-06-95	14:46 EDT	0472	Clean Water Act revisions
#2044	05-30-95	14:47 EDT	0600	Clean Water Act revisions
#2045	05-30-95	11:47 EDT	0527	Clean Water Act revisions
#2046	05-30-95	11:03 EDT	0462	Clean Water Act revisions
#2047	05-29-95	11:42 EDT	1009	Nature Conservancy and GM
#2048	05-27-95	00:50 EDT	0516	Farm bill
#2049	05-26-95	14:53 EDT	0539	Farm bill
#2050	05-26-95	14:09 EDT	0531	Farm bill
#2051	05-26-95	05:30 EDT	0141	Golf course
#2052	05-26-95	01:03 EDT	0713	Bob Dole's campaign
#2053	05-25-95	16:16 EDT	0757	Bob Dole's campaign
#2054	05-17-95	02:54 EDT	0235	Clean Water Act revisions
#2055	05-17-95	00:28 EDT	0797	Clean Water Act revisions
#2056	05-17-95	00:10 EDT	0854	House balanced budget debates
#2057	05-16-95	22:06 EDT	0234	Clean Water Act revisions
#2058	05-16-95	19:49 EDT	0781	Wetlands protection
#2059	05-16-95	18:18 EDT	0290	Wetlands protection
#2060	05-16-95	07:29 EDT	0820	National budget cuts
#2061	05-16-95	02:36 EDT	0814	National budget cuts
#2062	05-16-95	01:58 EDT	0691	Clean Water Act revisions
*				

#0001	05-10-95	22:46 EDT	0848	Clean Water Act
#0002	05-10-95	18:34 EDT	0738	Clean Water Act
#0003	05-10-95	12:30 EDT	0229	Wetlands Conservation Program
#0004	05-10-95	07:35 EDT	0229	Wetlands Conservation Program
#0005	05-10-95	02:23 EDT	0729	Definition of wetlands
#0006	05-10-95	00:23 EDT	0229	Wetlands Conservation Program
#0007	05-09-95	19:02 EDT	0315	Wetlands bill
#0008	05-08-95	11:46 EDT	1216	Wise Use movement
#0009	05-08-95	11:46 EDT	0315	PA Landowners Association
#0010	04-11-95	01:17 EDT	0412	'Takings' legislation
#0011	04-21-95	17:07 EDT	0428	'Takings' legislation
#0012	04-21-95	17:01 EDT	0385	'Takings' legislation
#0013	04-21-95	00:42 EDT	0872	Earth Day
#0014	04-20-95	19:37 EDT	0491	Industry lobbyists
#0015	04-20-95	13:58 EDT	0919	Environmental movement
#0016	04-17-95	21:55 EDT	0248	Oil spill
#0017	04-17-95	21:43 EDT	0241	Oil spill
#0018	04-17-95	02:04 EDT	0719	Earth Day
#0019	04-16-95	18:32 EDT	0179	Earth Day
#0020	04-16-95	11:55 EDT	0812	Earth Day
#0021	04-15-95	11:26 EDT	0812	Wetlands regulation
#0022	04-16-95	14:18 EDT	0822	Wetlands regulation
*				
#0025	04-13-95	16:45 EDT	0103	Racetrack construction
#0026	04-13-95	01:06 EDT	0846	Senate debates
*				
#0030	04-13-95	00:23 EDT	0859	Senate debates
#0031	04-10-95	12:03 EDT	0752	Ski resort construction
#0032	04-09-95	14:13 EDT	0896	Florida's 150th birthday
#0033	04-07-95	01:39 EDT	0409	House legislative action
#0034	04-07-95	00:57 EDT	0949	House legislative action
#0035	04-06-95	23:56 EDT	0972	House legislative action
#0036	04-06-95	19:56 EDT	0933	House legislative action
#0037	04-06-95	18:35 EDT	0839	House legislative action
#0038	04-06-95	17:52 EDT	0393	Wetlands mapping
#0039	04-06-95	15:37 EDT	0714	House legislative action
#0040	04-06-95	11:30 EDT	0468	House legislative action
#0041	04-06-95	11:20 EDT	0367	Wetlands delineations
#0042	04-06-95	10:38 EDT	0359	Wetlands delineations
#0043	04-05-95	01:23 EDT	0710	Environmental laws
#0044	04-06-95	09:26 EDT	0927	Cowboy music
#0045	03-27-95	16:53 EST	0537	Crab industry
#0046	03-27-95	15:45 EST	0509	Crab industry
#0047	03-24-95	02:48 EST	0640	Regulatory reform
#0048	03-20-95	12:24 EST	0978	Peat mining
#0049	03-20-95	12:25 EST	0407	Peat facts
#0050	03-18-95	00:34 EST	0600	Congressional debates
*				

#0052	03-14-95	00:41 EST	0539	Legislation
#0053	03-13-95	15:55 EST	0597	EPA
#0054	03-13-95	15:25 EST	0576	EPA
#0055	03-10-95	08:00 EST	0668	Regulations moratorium
#0056	03-10-95	00:43 EST	0661	Regulations moratorium
#0057	03-09-95	16:36 EST	0678	Regulations freeze
#0058	03-06-95	13:33 EST	0832	Legislation
#0059	03-06-95	13:28 EST	0801	Legislation
*				
#0061	03-04-95	11:20 EST	0717	Conservation program
#0062	03-04-95	01:10 EST	1262	Wetlands legislation
#0063	03-04-95	00:54 EST	0511	Property rights bill
#0064	03-05-95	13:14 EST	0728	Conservation program
#0065	03-03-95	23:39 EST	0553	Legislation
#0066	03-03-95	19:26 EST	0181	Legislation
#0067	03-03-95	18:10 EST	0553	Legislation
#0068	03-03-95	17:39 EST	0807	Property rights bill
#0069	03-03-95	17:24 EST	0808	Property rights bill
#0070	03-03-95	17:05 EST	0793	Property rights bill
#0071	03-03-95	15:09 EST	1262	Legislation
#0072	03-03-95	15:03 EST	0805	Landowner compensation bill
#0073	03-03-95	14:12 EST	0806	Landowner compensation bill
#0074	03-03-95	13:51 EST	0805	Landowner compensation bill
#0075	03-03-95	13:47 EST	0811	Landowner compensation bill
#0076	03-03-95	13:42 EST	0180	Compensation bill
#0077	03-03-95	03:13 EST	0733	Legislation
#0078	03-03-95	01:51 EST	0726	Legislation
#0079	03-02-95	22:30 EST	0949	Legislation
#0080	03-02-95	22:22 EST	0945	Legislation
#0081	03-02-95	18:04 EST	0874	Legislation
#0082	03-02-95	17:52 EST	0867	Legislation
#0083	03-02-95	14:02 EST	0712	Legislation
#0084	03-02-95	02:26 EST	0675	Legislation debates
#0085	03-02-95	11:32 EST	0772	Gardening book
#0086	02-28-95	20:22 EST	0758	Legislation
#0087	02-28-95	14:27 EST	0873	Legislation
#0088	02-28-95	02:23 EST	0739	Legislation
*				
#0091	02-17-95	07:52 EST	0549	Legislation
#0092	02-17-95	02:07 EST	0542	Legislation debates
#0093	02-16-95	19:52 EST	0530	Legislation debates
#0094	02-10-95	16:34 EST	0667	Legislation debates
*				
#0098	01-30-95	17:13 EST	0304	Endangered fish
#0099	01-25-95	17:41 EST	0479	Regulation bills
*				
#0101	01-23-95	01:28 EST	0889	Republican Congressman
#0102	01-23-95	00:19 EST	0869	Republican Congressman

#0103	01-23-95	11:29 EST	0846	Chattanooga
#0104	01-17-95	00:24 EST	0792	Alaska
#0105	01-12-95	15:34 EST	0592	U.S. energy policy
#0106	01-12-95	14:22 EST	0584	Energy policy
#0107	01-08-95	11:50 EST	0824	GOP Congress
#0108	12-23-94	11:48 EST	0261	Store construction
*				
#0110	12-10-94	02:37 EST	0186	Sports complex construction
#0111	12-10-94	02:33 EST	0186	Sports complex construction
#0112	12-09-94	22:10 EST	0319	Sports complex construction
#0113	12-09-94	19:41 EST	0604	Sports complex construction
#0114	11-30-94	00:30 EST	0488	Bird habitat
#0115	11-28-94	12:14 EST	0200	Florida Bay
#0116	11-26-94	18:22 EST	0639	Soil conservation
#0117	11-27-94	13:08 EST	0637	Soil conservation
#0118	11-14-94	12:11 EST	0135	Bird habitat
#0119	11-13-94	09:45 EST	0502	Conservation Reserve Program
#0120	10-31-94	03:52 EST	0764	Ski resort construction
#0121	09-27-94	15:56 EST	0315	Flood control reform
#0122	09-24-94	01:34 EST	0440	Flood control reform
#0123	09-24-94	00:15 EST	0394	Farm programs
#0124	09-23-94	17:55 EST	0348	Flood control reform
#0125	09-23-94	17:49 EDT	0392	Ag bill
#0126	09-23-94	13:42 EDT	0375	Ag bill
#0127	09-23-94	13:00 EDT	0368	Farm programs
#0128	09-21-94	19:09 EDT	0538	Farmers and wetlands
#0129	09-20-94	17:57 EDT	0828	Woodstock concert
#0130	09-20-94	02:55 EDT	0490	Woodstock concert
*				
#0133	09-17-94	17:15 EDT	0502	Woodstock concert
*				
#0139	09-04-94	23:35 EDT	1213	Florida water supply
#0140	09-04-94	11:53 EDT	1215	Florida water supply
#0141	09-05-94	13:18 EDT	1224	Florida water woes
#0142	09-02-94	13:05 EDT	0735	Movie review
*				
#0145	08-12-94	01:47 EDT	0501	Washington politics
#0146	07-31-94	13:59 EDT	1297	Laguna Madre
#0147	07-22-94	18:03 EDT	0169	Rain and ducks
#0148	07-20-94	18:38 EDT	0696	Ag spending
#0149	07-20-94	18:12 EDT	0444	Flood control
#0150	07-20-94	17:22 EDT	0701	Ag spending
*				
#0152	07-15-94	14:13 EDT	0305	Sports facility construction
#0153	07-14-94	01:11 EDT	0433	Soil erosion, wetlands loss
#0154	07-13-94	15:34 EDT	0521	Soil erosion, wetlands loss
#0155	07-13-94	13:57 EDT	0487	Flood control
#0156	07-13-94	12:00 EDT	0394	Federal programs

#0157	07-12-94	10:31 EDT	0353	Theme park construction
#0158	07-05-94	07:06 EDT	1008	Theme park construction
#0159	07-05-94	00:15 EDT	1011	Theme park construction
#0160	07-04-94	19:28 EDT	1008	Theme park construction
#0161	07-04-94	14:02 EDT	1009	Theme park construction
#0162	07-04-94	12:19 EDT	1014	Theme park construction
#0163	07-06-94	13:46 EDT	1007	Theme park construction
#0164	07-06-94	13:06 EDT	1040	Theme park construction
#0165	06-30-94	15:44 EDT	0099	Sports arena construction
#0166	06-27-94	11:30 EDT	0484	Turtle rescues
#0167	06-21-94	05:04 EDT	0264	Stadium construction
#0168	06-18-94	00:36 EDT	0389	Dole Property Rights Bill
#0169	06-18-94	14:03 EDT	0369	Dole Property Rights Bill
#0170	06-17-94	13:45 EDT	0454	Ag spending bill
#0171	06-14-94	00:32 EDT	0428	Flood control reforms
#0172	06-13-94	16:32 EDT	0298	Everglades cleanup
#0173	06-10-94	04:52 EDT	0186	California bond issues
#0174	06-10-94	04:05 EDT	0445	California bond issues
#0175	06-14-94	09:12 EDT	0422	Eagle Scout project
#0176	06-06-94	23:34 EDT	0701	Flood control
#0177	05-26-94	23:54 EDT	0365	Everglades cleanup
#0178	05-26-94	01:38 EDT	0454	Flood protection
#0179	05-25-94	15:41 EDT	0457	Flood protection
#0180	05-25-94	11:43 EDT	1033	Falcon migration
#0181	05-19-94	16:04 EDT	0826	Weather conditions
#0182	05-16-94	23:52 EDT	0959	Wetlands controversy
#0183	05-16-94	12:27 EDT	0961	Wetlands controversy
#0184	05-17-94	13:17 EDT	0968	Unhappy landowner
#0185	05-12-94	16:05 EDT	0795	Hurricane Andrew damage
#0186	05-12-94	13:53 EDT	0787	Hurricane Andrew damage
#0187	05-12-94	00:76 EDT	0787	Hurricane Andrew damage
#0188	05-02-94	04:04 EDT	0105	Hurricane Andrew damage
*				
#0191	04-25-94	11:56 EDT	0632	Southern wetlands
#0192	04-23-94	00:52 EDT	0542	Kissimmee restoration
#0193	04-22-94	15:39 EDT	0537	Kissimmee River restoration
#0194	04-22-94	15:39 EDT	0537	Kissimmee River restoration
#0195	04-20-94	00:32 EDT	0615	Water quality
#0196	04-19-94	15:02 EDT	0580	Endangered rivers
#0197	04-19-94	00:58 EDT	0690	Endangered rivers
#0198	04-12-94	16:48 EDT	0531	Ag mediation program
#0199	04-07-94	05:05 EDT	0190	Marjory Stoneman Douglas
#0200	04-07-94	03:07 EDT	0774	Marjory Stoneman Douglas
#0201	04-07-94	02:40 EDT	0758	Marjory Stoneman Douglas
*				
#0205	04-04-94	04:08 EDT	0823	Kentucky
#0206	03-30-94	17:30 EDT	0434	Dredging in Texas
#0207	03-30-94	09:35 EST	0796	The 1993 flood

#0208	03-30-94	01:00 EST	0734	The 1993 flood
#0209	03-25-94	17:14 EST	0503	Dredging regulations
#0210	03-25-94	12:43 EST	0411	Dredging rules
#0211	03-24-94	18:06 EST	1382	Racing track construction
#0212	03-14-94	17:35 EST	0661	Environmental crimes
#0213	03-07-94	04:50 EST	0138	Pollution
#0214	03-07-94	00:22 EST	0617	Pollution
#0215	02-28-94	06:10 EST	0943	Gardening books
#0216	02-28-94	06:08 EST	0367	Weeds
#0217	02-26-94	11:55 EST	0651	USDA reorganization
#0218	02-27-94	15:16 EST	0659	USDA reorganization
*				
#0220	02-10-94	00:55 EST	0260	Wetlands Reserve Program
#0221	02-10-94	00:04 EST	0260	Wetlands Reserve Program
#0222	02-10-94	00:55 EST	0260	Wetlands Reserve Program
*				
#0224	02-09-94	21:21 EST	0294	Flood damage
#0225	02-09-94	18:37 EST	0284	Flood damage
#0226	02-08-94	07:28 EST	0604	1995 agriculture budget
#0227	02-08-94	02:00 EST	0659	Clinton budget proposals
#0228	02-08-94	01:45 EST	0597	1995 agriculture budget
*				
#0232	02-07-94	16:16 EST	0670	1995 agriculture budget
*				
#0234	02-07-94	15:02 EST	0611	Budget and farmers
#0235	02-07-94	14:56 EST	0733	Green games
*				
#0237	02-04-94	16:57 EST	0501	Clinton's budget
*				
#0239	01-29-94	15:37 EST	0188	Park construction
#0240	01-24-94	13:27 EST	0596	Endangered birds
#0241	01-22-94	21:16 EST	0551	Fine for wetlands violation
#0242	01-15-94	23:04 EST	0356	Babbitt speaks
#0243	01-13-94	21:06 EST	0465	Everglades cleanup
#0244	01-06-94	17:53 EST	0530	Soil Conservation Service
#0245	01-06-94	07:55 EST	0341	Wetlands Reserve Program
#0246	01-06-94	00:21 EST	0341	Wetlands Reserve Program
#0247	12-24-93	11:12 EST	0645	Wetlands as filters
#0248	12-23-93	23:22 EST	0638	Wetlands as filters
#0249	12-17-93	02:29 EST	0525	Cleanup talks
#0250	12-16-93	22:03 EST	0530	Cleanup talks
#0251	12-16-93	02:21 EST	0593	Rangeland reform plan
#0252	12-03-93	16:28 EST	0410	Flood victims' aid
#0253	12-03-93	12:37 EST	0346	Flood victims' aid
#0254	12-02-93	00:22 EST	0476	Wetlands set aside
#0255	12-01-93	16:59 EST	0452	Wetlands set aside
#0256	11-30-93	00:08 EST	0535	Housing industry
#0257	12-01-93	14:50 EST	0543	Housing industry

#0258	12-01-93	14:52 EST	0549	Housing industry
#0259	11-19-93	17:49 EST	0420	Levee repairs
#0260	11-18-93	07:49 EST	0598	Proposed fertilizer tax
#0261	11-18-93	02:48 EST	0591	Proposed fertilizer tax
#0262	11-17-93	17:40 EST	0630	Soil policy
#0263	11-16-93	00:50 EST	0139	Wetlands provisions
#0264	11-16-93	00:43 EST	0139	Wetlands provisions
*				
#0265	11-10-93	17:50 EST	0218	Duck stamp
#0267	11-10-93	03:06 EST	0350	Water special on TV
#0268	11-09-93	13:32 EST	0552	Water special on TV
*				
#0272	11-06-93	18:02 EST	1051	USDA Secretary Espy
#0273	11-06-93	11:14 EST	1012	USDA Secretary Espy
#0274	11-07-93	15:17 EST	1020	USDA Secretary Espy
#0275	11-03-93	17:14 EST	0723	Environmental prosecutions
#0276	11-03-93	11:58 EST	0803	Environmental prosecutions
#0277	11-03-93	02:17 EST	0650	Environmental laws
#0278	11-01-93	18:06 EST	0563	Bureau of Reclamation
#0279	11-01-93	14:35 EST	0737	Bureau of Reclamation
#0280	11-01-93	01:27 EST	0635	Bureau of Reclamation
#0281	11-01-93	11:30 EST	0916	Bureau of Reclamation
#0282	10-27-93	15:58 EST	0535	Flood control proposals
*				
#0286	10-21-93	19:21 EST	0525	Sports complex construction
*				
#0288	10-18-93	03:44 EST	0833	Ski resort construction
#0289	10-12-93	03:44 EDT	0615	Bureau of Reclamation
#0290	10-12-93	01:18 EDT	0607	Bureau of Reclamation
#0291	10-11-93	13:54 EDT	0751	Bureau of Reclamation
#0292	10-11-93	10:57 EDT	0565	Tanker explosion
#0293	10-11-93	04:41 EDT	0122	Tanker explosion
#0294	10-11-93	03:58 EDT	0596	Tanker explosion
#0295	10-11-93	01:57 EDT	0556	Tanker explosion
#0296	10-10-93	22:38 EDT	0615	Tanker explosion
#0297	10-10-93	17:28 EDT	0601	Tanker explosion
#0298	10-10-93	17:12 EDT	0595	Tanker explosion
#0299	10-06-93	10:30 EDT	0865	National Biological Survey
#0300	10-06-93	01:06 EDT	0763	National Biological Survey
#0301	10-05-93	11:24 EDT	0717	Non-indigenous plants, animals
#0302	10-05-93	02:11 EDT	0580	Non-indigenous plants, animals
#0303	10-01-93	18:56 EDT	0373	Golf course construction
#0304	10-01-93	07:35 EDT	0584	Subsidy programs
#0305	10-01-93	02:44 EDT	0576	Subsidy programs
#0306	09-30-93	18:17 EDT	0801	Ag spending bill
#0307	09-30-93	16:16 EDT	0738	Ag spending bill
*				
#0309	09-16-93	01:19 EDT	0538	Wildlife refuges

#0310	09-07-93	16:23 EDT	0510	Federal employees
*				
#0312	09-02-93	12:57 EDT	0606	"Swamp Lady"
#0313	08-31-93	16:03 EDT	0464	Youth public service projects
#0314	08-28-93	11:28 EDT	0829	Environmental policy
#0315	08-26-93	05:09 EDT	0166	Flood victims
#0316	08-26-93	00:03 EDT	0790	Flood victims
#0317	08-25-93	16:32 EDT	0707	Flood control alternatives
#0318	08-25-93	12:08 EDT	0682	Wetlands protection
#0319	08-25-93	11:59 EDT	0675	Wetlands protection
#0320	08-25-93	07:32 EDT	0566	Wetlands protection
#0321	08-25-93	01:22 EDT	0559	Wetlands protection
#0322	08-24-93	18:50 EDT	0802	Wetlands protection
#0323	08-24-93	18:42 EDT	0797	Wetlands protection
#0324	08-24-93	12:59 EDT	0947	Wetlands policy
#0325	08-24-93	12:47 EDT	0941	Wetlands policy
#0326	08-24-93	11:57 EDT	0909	Wetlands policy
#0327	08-24-93	11:41 EDT	0899	Wetlands policy
#0328	08-24-93	11:20 EDT	0135	Wetlands policy
#0329	08-24-93	11:17 EDT	0851	Wetlands policy
#0330	08-24-93	11:11 EDT	0128	Wetlands policy
#0331	08-24-93	10:39 EDT	0287	Wetlands policy
#0332	08-24-93	10:38 EDT	0709	Wetlands policy
#0333	08-24-93	10:19 EDT	0302	Wetlands policy
#0334	08-24-93	10:13 EDT	0700	Wetlands policy
#0335	08-24-93	04:56 EDT	0129	Wetlands policy
#0336	08-24-93	01:58 EDT	0264	Wetlands policy
#0337	08-24-93	01:15 EDT	0644	Wetlands policy
#0338	08-24-93	00:59 EDT	0648	Wetlands policy
#0339	08-23-93	21:37 EDT	0890	Alaskan wetlands rules
#0340	08-23-93	20:56 EDT	0888	Alaskan wetlands rules
#0341	08-23-93	20:50 EDT	0935	Alaskan wetlands rules
*				
#0343	08-23-93	18:34 EDT	0839	Alaskan wetlands rules
#0344	08-23-95	18:25 EDT	0831	Alaskan wetlands rules
#0345	08-23-93	00:59 EDT	0301	Wetlands policy
#0346	08-20-93	20:08 EDT	0354	Wetlands policy
#0347	08-18-93	18:23 EDT	0289	Oil spill in NJ
#0348	08-18-93	17:21 EDT	0512	Oil spill in NJ
#0349	08-18-93	17:17 EDT	0492	Oil spill in NJ
#0350	08-17-93	16:38 EDT	0708	Hurricane Andrew
#0351	08-17-93	15:14 EDT	0687	Hurricane Andrew
#0352	08-11-93	23:35 EDT	0205	Oil slick
#0353	08-11-93	18:24 EDT	0327	Mississippi River levees
#0354	08-11-93	16:50 EDT	0463	Forest Service concerns
#0355	08-06-93	15:38 EDT	0506	Disaster relief legislation
#0356	08-05-93	15:43 EDT	0919	Mexico-U.S. border
#0357	08-05-93	00:44 EDT	0916	Disaster relief legislation

#0358	08-04-93	21:27 EDT	0488	Disaster relief legislation
#0359	07-31-93	01:17 EDT	0483	Disaster relief legislation
#0360	07-30-93	15:51 EDT	0482	Disaster relief legislation
#0361	07-30-93	12:23 EDT	0607	Disaster relief legislation
#0362	07-30-93	01:26 EDT	0569	Disaster relief legislation
#0363	07-29-93	20:08 EDT	0569	Disaster relief legislation
#0364	07-29-93	07:28 EDT	0566	Ag programs
#0365	07-29-93	01:51 EDT	0559	Ag programs
#0366	07-28-93	01:36 EDT	0357	Farm spending bill
#0367	07-27-93	15:33 EDT	0467	Ag spending bill
#0368	07-27-93	15:05 EDT	0460	Ag spending bill
#0369	07-27-93	14:25 EDT	0453	Ag spending bill
#0370	07-27-93	14:24 EDT	0373	Ag spending bill
#0371	07-27-93	13:48 EDT	0446	Ag spending bill
#0372	07-27-93	11:26 EDT	0374	Ag spending bill
#0373	07-20-93	18:01 EDT	0738	Flood effect on wildlife
#0374	07-15-93	19:18 EDT	0801	Flood control
#0375	07-13-93	12:35 EDT	0801	Everglades restoration
#0376	07-13-93	11:50 EDT	0720	Everglades restoration
#0377	07-13-93	09:54 EDT	0593	Everglades restoration
#0378	07-13-93	01:17 EDT	0569	Everglades restoration
#0379	07-12-93	23:55 EDT	0393	Everglades restoration
#0380	07-12-93	23:41 EDT	0379	Everglades restoration
#0381	07-12-93	11:41 EDT	0964	Swans
#0382	07-10-93	11:22 EDT	1329	Logging
#0383	07-11-93	13:11 EDT	1335	Timber rush
#0384	07-05-93	14:26 EDT	0520	Golf course construction
#0385	07-02-93	03:39 EDT	0712	Clinton policies
#0386	07-02-93	01:22 EDT	0704	Clinton policies
#0387	07-03-93	11:01 EDT	1122	Golf course construction
#0388	06-30-93	08:00 EDT	0605	Spending bill
#0389	06-30-93	03:47 EDT	0598	Spending bill
#0390	06-30-93	02:04 EDT	0598	Spending bill
#0391	06-28-93	01:02 EDT	0618	Golf course
*				
#0394	06-17-93	07:34 EDT	0517	Ag spending bill
#0395	06-17-93	02:03 EDT	0570	Ag spending bill
#0396	06-16-93	19:25 EDT	0587	Ag spending bill
#0397	06-16-93	18:38 EDT	0581	Ag spending bill
#0398	06-16-93	15:17 EDT	0538	Ag spending bill
#0399	06-16-93	14:51 EDT	0532	Ag spending bill
*				
#0401	06-15-93	13:45 EDT	0447	Crop insurance
#0402	06-14-93	11:46 EDT	0488	Heron colony
#0403	06-11-93	06:51 EDT	0200	Sick ducks
*				
#0405	06-03-93	14:57 EDT	0097	Oil spill settlement
#0406	05-24-93	12:53 EDT	0762	Migratory shorebirds

#0407	05-15-93	11:18 EDT	1573	Everglades preservation
#0408	05-16-93	13:17 EDT	0929	Everglades preservation
#0409	05-09-93	14:16 EDT	0260	Land preservation
#0410	05-05-93	17:19 EDT	0452	EPA programs
#0411	05-05-93	00:07 EDT	0664	EPA status
#0412	05-04-93	21:08 EDT	0209	Pollution in Alaska
#0413	05-04-93	18:37 EDT	0699	EPA status
#0414	05-04-93	17:50 EDT	0684	EPA status
#0415	05-04-93	16:19 EDT	0657	EPA status
#0416	05-04-93	16:05 EDT	0252	EPA status
#0417	05-04-93	10:08 EDT	0643	EPA status
#0418	05-04-93	01:00 EDT	0427	EPA status
#0419	05-03-93	02:55 EDT	0973	U.S. Fish and Wildlife Service
#0420	04-27-93	01:08 EDT	0427	National Biological Survey
#0421	04-27-93	00:34 EDT	0419	National Biological Survey
#0422	04-26-93	16:35 EDT	0338	National Biological Survey
*				
#0424	04-20-93	02:36 EDT	0604	Endangered rivers
#0425	04-09-93	07:44 EDT	0475	1994 budget proposal
#0426	04-09-93	00:10 EDT	0645	Federal parklands
#0427	04-09-93	00:10 EDT	0467	1994 budget proposal
#0428	04-08-93	15:25 EDT	0658	1994 budget proposal
#0429	04-08-93	13:58 EDT	0547	1994 budget proposal
#0430	03-29-93	06:33 EST	0420	Diesel fuel spill
#0431	03-29-93	01:26 EST	0387	Diesel fuel spill
#0432	03-27-93	11:09 EST	0618	"Swampbuster" enforcement
#0433	03-28-93	16:44 EST	0627	Soil conservation
#0434	03-21-93	18:18 EST	0222	Interior Department
#0435	03-18-93	12:45 EST	0169	Frogs as spring harbingers
#0436	03-15-93	07:29 EST	0403	Farm conservation
#0437	03-15-93	13:44 EST	0396	Conservation violators
#0438	03-07-93	13:44 EST	0510	State Conservation Corps
#0439	03-08-93	12:08 EST	1048	Endangered butterflies
#0440	02-27-93	14:09 EST	0606	USDA budget
#0441	02-28-93	14:51 EST	0616	USDA budget
#0442	02-20-93	11:46 EST	0826	EPA Chief Browner
#0443	02-17-93	04:11 EST	0127	Three brothers lost in snow
*				
#0445	02-09-93	16:26 EST	0278	Supercollider project
#0446	02-02-93	16:04 EST	0221	Marjory Stoneman Douglas
*				
#0449	01-23-93	14:35 EST	0139	Proposed waste dump site
*				
#0452	01-11-93	16:23 EST	0406	New EPA Chief Browner
#0453	01-11-93	13:19 EST	0541	New EPA Chief Browner
*				
#0455	12-18-92	23:23 EST	0193	National parks and refuges
#0456	12-15-92	01:27 EST	0703	Bush environmental policies

#0457	12-14-92	12:49 EST	0718	Everglades National Park
#0458	12-14-92	05:16 EST	0109	Everglades National Park
#0459	12-14-92	00:48 EST	0721	Everglades National Park
#0460	12-14-92	11:45 EST	0264	Waterfowl habitat
#0461	12-07-92	18:46 EST	0335	Alaska oil export ban
#0462	12-07-92	17:58 EST	0315	Alaska oil export ban
*				
#0464	12-05-92	12:46 EST	0375	Waterfowl habitat
*				
#0466	11-30-92	11:06 EST	0544	Vanishing marshes
*				
#0469	11-21-92	17:14 EST	0319	Wetlands rules
#0470	11-13-92	12:56 EST	0875	Reshaping federal agencies
#0471	11-13-92	02:21 EST	0872	Reshaping federal agencies
#0472	11-13-92	00:19 EST	0617	Ecological restoration
*				
#0474	11-14-92	12:25 EST	0625	Ecological restoration
#0475	11-14-92	12:26 EST	0632	Ecological restoration
#0476	11-12-92	16:54 EST	0417	Grazing fees
*				
#0478	11-12-92	01:20 EST	0307	Federal duck stamp
*				
#0480	11-10-92	16:17 EST	0429	Federal duck stamp
#0481	11-10-92	07:44 EST	0811	Fuel economy
#0482	11-10-92	01:00 EST	0805	Fuel economy measure
#0483	11-07-92	00:03 EST	0862	Wetlands definition
#0484	11-06-92	18:58 EST	0129	Wetlands definition
#0485	11-06-92	12:42 EST	0857	Wetlands definition
#0486	11-04-92	18:23 EST	0470	Gas pipeline
#0487	10-31-92	01:20 EST	0582	Alaskan wetlands rule
#0488	10-30-92	17:36 EST	0586	Alaskan wetlands rule
*				
#0490	10-21-92	01:42 EDT	0458	Presidential candidates
#0491	10-21-92	01:42 EDT	1051	Environmentalists back Clinton
#0492	10-20-02	12:43 EDT	0458	Presidential candidates
#0493	10-20-92	12:43 EDT	1047	Environmentalists back Clinton
#0494	10-21-92	15:28 EDT	1059	Presidential candidates
#0495	10-21-92	15:43 EDT	0468	Presidential candidates
#0496	10-18-92	15:21 EDT	1013	Presidential candidates
*				
#0498	09-30-92	16:27 EDT	0672	Cranberry industry
#0499	09-11-92	12:39 EDT	0712	Hurricane Andrew
*				
#0501	09-11-92	02:11 EDT	0707	Hurricane Andrew
*				
#0503	09-05-92	10:50 EDT	0914	Bush policies
#0504	09-04-92	12:07 EDT	0644	Sierra Club endorses Clinton
*				

#0506	09-04-92	10:22 EDT	0489	Groups endorse Clinton, Gore
#0507	09-03-92	10:25 EDT	0337	Groups rate Bush, Clinton
#0508	08-30-92	18:12 EDT	0811	Louisiana storm
#0509	08-30-92	16:11 EDT	0672	Louisiana storm
*				
#0511	08-26-92	01:24 EDT	0309	Levees in Louisiana
#0512	08-25-92	16:25 EDT	0322	Levees in Louisiana
#0513	08-20-92	00:52 EDT	0598	Republican National Convention
#0514	08-19-92	19:01 EDT	0568	Arkansas record
#0515	08-17-92	14:55 EDT	0234	Farm regulation
#0516	08-17-92	12:21 EDT	0234	Farm regulation
#0517	08-17-92	07:16 EDT	0234	Farm regulation
#0518	08-17-92	00:26 EDT	0234	Farm regulation
#0519	08-12-92	01:19 EDT	0562	Compromise ag bill
#0520	08-11-92	20:06 EDT	0603	Compromise ag bill
#0521	08-11-92	17:09 EDT	0563	Compromise ag bill
#0522	08-03-92	08:35 EDT	1022	Sears new headquarters
#0523	08-03-92	18:05 EDT	1022	Sears new headquarters
#0524	08-02-92	13:42 EDT	1019	Sears new headquarters
#0525	07-03-92	16:49 EDT	1038	Sears new headquarters
#0526	07-03-92	15:16 EDT	1029	Sears new headquarters
#0527	07-29-92	02:35 EDT	0586	Farm bill in Senate
#0528	07-28-92	02:18 EDT	0573	Federal budget cuts
#0529	07-28-92	22:57 EDT	0771	Federal budget debates
*				
#0531	07-28-92	22:54 EDT	0619	Federal spending
#0532	07-28-92	22:45 EDT	0700	Ag spending bill
#0533	07-29-92	22:27 EDT	0668	Wetlands Reserve Program
#0534	07-28-92	17:55 EDT	0623	Federal spending
#0535	07-28-92	17:23 EDT	0620	Federal spending
#0536	07-28-92	16:32 EDT	0579	Wetlands Reserve Program
#0537	07-28-92	16:27 EDT	0587	Federal spending
#0538	07-27-92	12:33 EDT	0255	Wetlands restoration
#0539	07-27-92	07:52 EDT	0255	Wetlands restoration
#0540	07-27-92	01:02 EDT	0255	Wetlands restoration
#0541	07-25-92	14:59 EDT	0457	Federal wildlife refuge
#0542	07-20-92	20:00 EDT	0371	Everglades mercury levels
#0543	07-07-92	17:53 EDT	0544	Wetlands Reserve Program
#0544	07-01-92	12:50 EDT	0641	Golf/housing project construction
#0545	07-01-92	07:43 EDT	0605	Farm spending
#0546	07-01-92	02:34 EDT	0599	Ag subsidies
#0547	06-30-92	22:14 EDT	0795	Ag subsidies
#0548	06-30-92	20:02 EDT	0664	Ag subsidies
#0549	06-30-92	19:43 EDT	0662	Ag subsidies
#0550	06-30-92	16:58 EDT	0590	Ag research
#0551	06-26-92	08:18 EDT	0671	Budget legislation
#0552	06-26-92	02:19 EDT	0664	Budget legislation
#0553	06-25-92	21:33 EDT	0666	Budget legislation

#0554	06-25-92	20:41 EDT	0689	Budget legislation
#0555	06-25-92	17:25 EDT	0656	Budget legislation
#0556	06-19-92	12:43 EDT	0435	Wetlands filling permit
#0557	06-16-92	17:17 EDT	0463	Wetlands filling permit
#0558	06-16-92	15:48 EDT	0417	Wetlands filling permit
#0559	06-13-92	17:05 EDT	0728	Golf course
#0560	06-12-92	16:32 EDT	0487	Golf Course
*				
#0562	06-12-92	23:55 EDT	0497	Golf course
*				
#0565	06-12-92	13:41 EDT	0489	Golf course
#0566	06-13-92	15:37 EDT	0567	Habitat improvement
#0567	06-08-92	14:14 EDT	0725	Bush policies
#0568	06-08-92	14:05 EDT	0718	Bush policies
#0569	06-08-92	00:04 EDT	1093	Commercial fishing
#0570	06-07-92	11:54 EDT	1096	Commercial fishing
*				
#0576	06-04-92	13:40 EDT	0940	Reilly, head of EPA
#0578	06-01-92	23:48 EDT	0745	Staten Island
#0579	06-01-92	13:32 EDT	1102	Commercial fishing
#0581	05-02-92	08:24 EDT	0754	Staten Island
#0582	05-30-92	21:48 EDT	0963	Bush addresses farmers
#0583	05-30-92	16:39 EDT	0789	Bush addresses farmers
#0584	05-30-92	15:23 EDT	0863	Bush meets with ag leaders
#0585	05-30-92	12:54 EDT	0818	Bush meets with ag leaders
#0586	05-30-92	02:05 EDT	0695	Bush and wetlands protection
#0587	05-26-92	22:34 EDT	0476	Bush and wetlands protection
#0588	05-26-92	17:50 EDT	0458	Wetlands protection
#0589	05-25-92	16:52 EDT	0067	Wetlands protection
*				
#0592	05-23-92	00:09 EDT	0612	Wetlands protection
*				
#0594	05-22-92	18:56 EDT	0067	Wetlands protection
#0595	05-22-92	16:01 EDT	0851	Wetlands protection
#0596	05-22-92	15:28 EDT	0844	Wetlands protection
*				
#0598	05-05-92	16:43 EDT	0563	Bicycling race
#0599	04-30-92	13:55 EDT	0428	Beneficial bacteria discovered
*				
#0601	04-23-92	02:11 EDT	0604	Presidential candidates
#0602	04-22-92	17:39 EDT	0565	Presidential candidates
#0603	04-15-92	18:13 EDT	0489	Marilyn Quayle's stocks
#0604	04-13-92	19:46 EDT	0502	Republican panel
#0605	04-08-92	14:17 EDT	0612	Endangered rivers
#0606	04-08-92	01:07 EDT	0681	Endangered rivers
#0607	03-31-92	14:27 EST	0562	Wetlands destruction
#0608	03-26-92	14:48 EST	0813	Jerry Brown's campaign
#0609	03-25-92	13:33 EST	1026	Bush budget proposals

#0610	03-25-92	00:20 EST	0984	Bush budget proposals
#0611	03-21-92	18:56 EST	0212	Fire burns 900 acres
#0612	03-21-92	17:29 EST	0163	Fire burns 900 acres
#0613	03-20-92	20:13 EST	0625	Bush budget proposals
#0614	03-20-92	18:57 EST	0984	Bush/Congress debates
#0615	03-20-92	17:40 EST	0926	Bush/Congress debates
#0616	03-20-92	17:07 EST	0614	Bush budget proposals
#0617	03-20-92	17:06 EST	0731	Bush budget proposals
#0618	03-20-92	17:00 EST	0728	Bush budget proposals
#0619	03-20-92	16:30 EST	0751	Bush budget proposals
#0620	03-20-92	14:22 EST	0657	Budget debates
#0621	03-20-92	14:19 EST	0798	Budget debates
#0622	03-20-92	13:56 EST	0832	Budget debates
#0623	03-20-92	13:35 EST	0728	Bush budget proposals
#0624	03-20-92	12:42 EST	0552	Budget discussions
#0625	03-19-95	16:43 EST	0245	Protecting wetlands
#0626	03-17-95	12:33 EST	0179	Noxious weed
#0627	03-10-95	16:47 EST	0218	Regulations
#0628	03-09-92	12:21 EST	0310	Wetlands conversion
#0629	03-09-92	07:34 EST	0310	Wetlands conversion
#0630	03-09-92	00:31 EST	0310	Wetlands conversion
#0631	03-08-92	11:47 EST	0683	California water supply
#0632	03-05-92	01:28 EST	0870	Bush record
#0633	03-03-92	17:45 EST	0647	Quayle's Council
#0634	03-05-92	14:41 EST	0158	Farm bill
#0635	03-05-92	12:26 EST	0158	Farm bill
#0636	03-04-92	12:30 EST	0871	Bush record
#0637	03-04-92	23:56 EST	0158	Farm bill
#0638	03-05-92	13:10 EST	0875	Bush record
#0639	03-03-92	13:39 EST	0129	Environmental officials
*				
#0641	03-03-92	07:52 EST	0129	Environmental officials
#0642	03-03-92	01:29 EST	0129	Environmental officials
*				
#0645	02-26-92	16:43 EST	0458	Wetlands policy
#0646	02-24-92	22:22 EST	0174	Environmental violations
#0647	02-24-92	16:41 EST	0642	Chicago airport construction
#0648	01-29-92	01:33 EST	0508	Environmental regulations
*				
#0650	01-27-92	14:29 EST	0322	Cranberry production
#0651	01-27-92	12:36 EST	0322	Cranberry production
#0652	01-27-92	07:10 EST	0322	Cranberry production
#0653	01-27-92	01:48 EST	0322	Cranberry production
*				
#0655	01-23-92	16:40 EST	0616	Pollution cleanup
#0656	01-23-92	16:15 EST	0565	Pollution cleanup
#0657	01-23-92	15:11 EST	0622	Candidates' records
#0658	01-23-92	02:07 EST	0775	Candidates' records

#0659	01-21-92	18:30 EST	0352	Marjory Stoneman Douglas
#0660	01-13-92	17:09 EST	0893	Bush addresses AFBF
#0661	01-13-92	13:56 EST	0744	Bush addresses AFBF
#0662	01-13-92	12:40 EST	0870	Bush addresses AFBF
#0663	01-13-92	12:24 EST	0789	Bush addresses AFBF
#0664	01-13-92	12:07 EST	0754	Bush addresses AFBF
#0665	01-13-92	11:48 EST	0392	Bush addresses AFBF
#0666	01-13-92	07:56 EST	0536	Bush travels
#0667	01-13-92	02:09 EST	0444	Bush travels
#0668	01-11-92	16:25 EST	0669	Everglades survival
*				
#0670	01-04-92	02:26 EST	0253	Property owner compensation
#0671	01-03-92	19:52 EST	0735	Property owner compensation
#0672	12-29-91	15:50 EST	0786	Soil erosion
#0673	12-29-91	14:15 EST	0785	Soil erosion
*				
#0676	12-11-91	17:44 EST	0485	Council on Competitiveness
#0677	12-11-91	16:43 EST	0483	U.S. aquatic ecosystem
#0678	12-11-91	01:21 EST	0706	Investigation of Hubbard
#0679	12-11-91	01:16 EST	0125	U.S. aquatic ecosystem
#0680	12-11-91	01:16 EST	0723	U.S. aquatic ecosystem
#0681	12-05-91	15:06 EST	0417	Imperiled Everglades
#0682	03-06-91	12:35 EST	1281	Quayle's tenure
#0683	11-25-91	11:17 EST	1206	Battered bay
#0684	11-23-91	14:55 EST	0786	Wetlands guidelines
#0685	11-22-91	02:09 EST	0675	Wetlands definition
#0686	11-21-91	16:22 EST	0930	Wetlands proposal
#0687	11-20-91	02:43 EST	0669	"Green" PR programs
#0688	11-20-91	02:42 EST	0084	"Green" PR programs
#0689	11-20-91	00:28 EST	0663	"Green" PR programs
#0690	11-19-91	20:12 EST	0780	"Green" PR programs
#0691	11-19-91	19:52 EST	0775	"Green" PR programs
#0692	11-19-91	18:52 EST	0084	"Green" PR programs
#0693	11-19-91	16:50 EST	0736	"Green" PR programs
#0694	11-19-91	16:25 EST	0729	"Green" PR programs
#0695	11-16-91	13:57 EST	0538	Wetlands report
#0696	11-16-91	13:37 EST	0530	Wetlands report
#0697	11-16-91	13:24 EST	0256	Growing marijuana in wetlands
#0698	11-13-91	15:27 EST	0425	Oil spill settlement
#0699	11-13-91	15:01 EST	0425	Oil spill settlement
#0700	11-19-91	14:09 EST	0538	Duck hunting
#0701	11-07-91	02:54 EST	0152	Duck stamp
#0702	11-06-91	22:51 EST	0348	Geese migration
#0703	11-01-91	17:41 EST	0353	Duck stamp
#0704	11-05-91	01:07 EST	0493	Duck stamp
#0705	11-04-91	17:36 EST	0342	Corps of Engineers
#0706	11-03-91	16:09 EST	0642	Shrimping industry
#0707	11-01-91	15:31 EST	0620	Shrimping industry

#0708	10-29-91	00:37 EDT	0523	Prairie wetlands
#0709	10-22-91	20:25 EDT	0510	Waste dump protests
#0710	10-22-91	19:41 EDT	0423	Council on Competitiveness
#0711	10-22-91	16:28 EDT	0451	Waste dump protests
#0712	10-21-91	19:42 EDT	0244	Artificial wetlands
#0713	10-18-91	07:35 EDT	0611	Wetlands legislation
#0714	10-18-91	00:35 EDT	0119	Wetlands legislation
*				
#0716	10-17-91	00:58 EDT	0451	Budget bills
#0717	10-16-91	16:18 EDT	0497	Spending bills
#0718	10-14-91	14:14 EDT	0690	Aquifer pumping proposal
#0719	10-11-91	12:33 EDT	0112	Wetlands restoration
#0720	10-11-91	07:36 EDT	0112	Wetlands restoration
#0721	10-11-91	01:18 EDT	0112	Wetlands restoration
#0722	10-09-91	02:37 EDT	0651	Oil spill settlement
#0723	10-09-91	01:36 EDT	0644	Oil spill settlement
#0724	10-09-91	01:26 EDT	0443	Agriculture bill
#0725	10-08-91	16:54 EDT	0539	Wetlands program
#0726	10-08-91	15:27 EDT	0582	Wetlands program
#0727	10-02-91	01:39 EDT	0648	Military base cleanup
#0728	10-01-91	18:37 EDT	0588	Military base cleanup
#0729	09-30-91	07:15 EDT	0916	Disney World
#0730	09-30-91	06:59 EDT	0140	Golf course
#0731	09-30-91	00:03 EDT	0924	Disney World
#0732	09-29-91	17:47 EDT	0916	Disney World
#0733	09-30-91	12:01 EDT	0938	Disney World
#0734	09-24-91	17:53 EDT	0427	Fish and Wildlife Service
#0735	09-23-91	03:36 EDT	0764	Presidential candidates
*				
#0737	09-23-91	01:19 EDT	0427	Loggers protest
#0738	09-22-91	21:08 EDT	0275	Loggers protest
#0739	09-22-91	12:14 EDT	1267	Bush's environmental record
#0740	09-23-91	14:32 EDT	1269	Bush's record
#0741	09-20-91	15:43 EDT	0394	Offshore drilling
#0742	09-20-91	15:23 EDT	0523	Offshore drilling
#0743	09-16-91	11:23 EDT	0683	Science class
#0744	09-12-91	13:02 EDT	0498	Wetlands policy
#0745	09-10-91	14:12 EDT	0089	Advantages of wetlands
#0746	09-10-91	12:14 EDT	0089	Advantages of wetlands
*				
#0748	09-10-91	01:16 EDT	0089	Advantages of wetlands
#0749	08-16-91	12:21 EDT	0801	Bush policies
#0750	08-16-91	12:07 EDT	1028	Bush policies
#0751	08-16-91	10:52 EDT	0965	Bush policies
#0752	08-15-91	18:51 EDT	0270	Savannah River Reactor
#0753	08-15-91	01:57 EDT	0173	Wetlands permit
*				
#0755	08-14-91	14:44 EDT	0232	Wetlands permit

#0756	08-10-91	14:06 EDT	0884	White House policies
#0757	08-10-91	12:09 EDT	0884	White House policies
#0758	08-10-91	10:40 EDT	0694	White House policies
#0759	08-10-91	05:41 EDT	0293	Golf course vandalism
#0760	08-10-91	01:11 EDT	0508	White House policies
#0761	08-10-91	00:57 EDT	0624	Wetlands policy
#0762	08-09-91	19:19 EDT	0829	Wetlands policy
#0763	08-09-91	15:15 EDT	0797	Wetlands policy
#0764	08-09-91	13:53 EDT	0639	Wetlands policy
#0765	08-09-91	12:46 EDT	0511	Wetlands policy
*				
#0767	08-03-91	11:46 EDT	0737	Congressional funding
#0768	08-04-91	13:40 EDT	0746	Budget discussions
#0769	08-02-91	14:47 EDT	0844	Wetlands rules
#0770	08-02-91	11:47 EDT	0627	Wetlands criteria
#0771	07-29-91	02:03 EDT	0393	Superfund list
#0772	07-22-91	07:11 EDT	0614	Housing industry
#0773	07-23-91	13:51 EDT	0629	Housing industry
#0774	07-22-91	14:05 EDT	0623	Housing industry
#0775	07-22-91	13:50 EDT	0623	Housing industry
*				
#0777	07-19-91	00:03 EDT	0525	National forests
#0778	07-18-91	14:23 EDT	0531	Wetlands policy
#0779	07-18-91	12:43 EDT	0519	National forests
#0780	07-18-91	12:19 EDT	0531	Wetlands policy
#0781	07-18-91	07:27 EDT	0531	Wetlands policy
#0782	07-18-91	01:21 EDT	0531	Property rights
#0783	07-18-91	00:01 EDT	0746	Atmospheric research
#0784	07-17-91	15:39 EDT	0290	Environmental initiatives
#0785	07-17-91	14:30 EDT	0747	Atmospheric research
#0786	07-11-91	16:29 EDT	0573	Everglades pollution
#0787	07-11-91	12:27 EDT	0713	Everglades cleanup
#0788	07-11-91	05:28 EDT	0602	Everglades cleanup
#0789	07-11-91	01:23 EDT	0721	Wetlands rules
#0790	07-10-91	23:55 EDT	0483	Wetlands cleanup
#0791	07-10-91	19:57 EDT	0482	Pollution suit
#0792	07-10-91	18:10 EDT	0782	Wetlands rules
#0793	07-10-91	16:59 EDT	0719	Wetlands rules
#0794	07-08-91	16:30 EDT	0955	Housing affordability
#0795	07-08-91	16:42 EDT	0948	Housing affordability
#0796	07-08-91	15:01 EDT	1143	Court dispute process
*				
#0799	06-21-91	03:44 EDT	0514	Church construction
#0800	06-12-91	19:19 EDT	0789	Transportation bill
#0801	05-29-91	11:15 EDT	0417	Lawsuit against NASA
#0802	05-15-91	16:55 EDT	0501	Baby turtles rescued
#0803	05-15-91	01:15 EDT	0625	Wetlands definition
#0804	05-14-91	19:12 EDT	0668	Wetlands definition

#0805	05-14-91	18:20 EDT	0567	Wetlands definition
#0806	05-07-91	07:23 EDT	1025	Farmers' ethics
#0807	05-06-91	23:57 EDT	1019	Farmers' ethics
#0808	05-06-91	12:24 EDT	1024	Farmers' ethics
#0809	05-07-91	15:43 EDT	1046	Farmers' ethics
#0810	05-07-91	15:25 EDT	1043	Farmers' ethics
#0811	05-07-91	13:25 EDT	1035	Farmers' ethics
#0812	05-07-91	13:12 EDT	1029	Farmers' ethics
#0813	05-06-91	15:30 EDT	0932	Wetlands definition dispute
#0814	05-02-91	19:38 EDT	0608	Environmental fund
*				
#0818	04-30-91	08:00 EDT	0803	Farm conservation
#0819	04-30-91	00:15 EDT	0796	Farm conservation
*				
#0821	04-29-91	18:14 EDT	0529	Farm conservation
#0822	04-29-91	17:56 EDT	0522	Farm conservation
*				
#0824	04-28-91	13:36 EDT	0816	Bird scientist
*				
#0827	04-19-91	02:15 EDT	0646	Bush discusses environment
#0828	04-18-91	17:19 EDT	0554	Bush: Clean Water Act
*				
#0830	04-03-91	21:51 EST	0382	Global warming
#0831	04-03-91	13:32 EST	0378	Global warming
#0832	03-18-91	16:11 EST	0535	California oil spill
#0833	03-18-91	14:25 EST	0536	California oil spill
#0834	03-18-91	04:52 EST	0507	California oil spill
#0835	03-18-91	03:13 EST	0674	California oil spill
#0836	03-18-91	02:51 EST	0684	California oil spill
#0837	03-18-91	01:24 EST	0667	California oil spill
#0838	03-17-91	18:36 EST	0664	California oil spill
#0839	03-17-91	16:15 EST	0608	California oil spill
#0840	03-15-91	18:38 EST	0414	Exxon oil spill settlement
#0841	03-15-91	18:33 EST	0408	Exxon oil spill settlement
#0842	03-05-91	01:45 EST	0783	Wetlands regulations
#0843	02-16-91	04:17 EST	0556	Battling drought
#0844	02-15-91	17:53 EST	0828	Battling drought
#0845	02-15-91	14:24 EST	0763	California drought
#0846	02-15-91	14:17 EST	0765	California water supply
#0847	02-09-91	15:19 EST	0496	Recreational land
#0848	02-09-91	11:08 EST	0870	Ag spending programs
#0849	02-02-91	11:04 EST	0468	Recreational land
#0850	02-09-91	01:01 EST	0651	Recreational land
#0851	02-08-91	18:32 EST	0729	Everglades pollution
#0852	02-05-91	00:19 EST	1091	Bush's budget proposals
#0853	02-04-91	17:10 EST	1094	Bush's budget proposals
#0854	02-04-91	10:24 EST	1034	Bush's budget message
#0855	02-04-91	11:23 EST	0430	Swan census

#0856	01-21-91	11:14 EST	0568	Wading birds threatened
*				
#0858	01-03-91	19:37 EST	0382	Global warming
#0859	12-27-90	14:46 EST	0531	Mass. Clean-Air Bill
#0860	12-17-90	17:02 EST	0256	Texas oil spill
#0861	12-13-90	03:39 EST	0357	Louisiana wetlands
#0862	12-10-90	12:19 EST	0134	Wetlands definition
#0863	12-10-90	07:29 EST	0134	Wetlands definition
#0864	12-10-90	01:20 EST	0134	Wetlands definition
#0865	12-03-90	05:16 EST	0253	Water pollution
#0866	11-30-90	09:51 EST	0688	Gas tax
#0867	11-30-90	09:42 EST	0681	Gas tax
#0868	11-30-90	07:25 EST	0429	Agriculture issues
#0869	11-30-90	01:21 EST	0429	Agriculture issues
#0870	11-30-90	00:24 EST	0668	Gas tax
#0871	11-30-90	00:06 EST	0661	Gas tax
#0872	11-29-90	18:21 EST	0201	Water project bill
#0873	11-28-90	14:58 EST	0550	Water project bill
#0874	11-28-90	14:35 EST	0543	1990 farm legislation
#0875	11-28-90	12:05 EST	0330	Farm bill
#0876	11-28-90	11:53 EST	0323	$170 billion farm bill
#0877	11-26-90	12:28 EST	0908	Range disputes
#0878	11-25-90	23:38 EST	0911	Range disputes
#0879	11-26-90	07:37 EST	0921	Range disputes
#0880	11-24-90	00:10 EST	0508	Colorado dam dispute
#0881	11-23-90	21:04 EST	0687	Two Forks dam project
#0882	11-23-90	21:03 EST	0687	Two Forks dam project
#0883	11-15-90	15:02 EST	0841	Clean Air Act
#0884	11-15-90	14:54 EST	0832	Clean Air Act
#0885	11-15-90	08:16 EST	0702	Air pollution controls
#0886	11-15-90	00:26 EST	0698	Air pollution controls
#0887	11-14-90	12:55 EST	0906	Clean Air debates
#0888	11-07-90	16:37 EST	0206	Duck stamp
#0889	11-05-90	17:50 EST	0288	Water pollution
#0890	10-26-90	07:47 EDT	0818	Farm bill
#0891	10-26-90	03:07 EDT	0811	Farm bill to Bush
#0892	10-25-90	20:53 EDT	1057	Senate approves farm bill
#0893	10-25-90	20:20 EDT	1051	Senate approves farm bill
#0894	10-25-90	16:57 EDT	0849	Farm bill
#0895	10-25-90	16:38 EDT	0843	Farm bill
#0896	10-25-90	15:07 EDT	0132	Puget Sound Live concert
#0897	10-22-90	11:05 EDT	0860	Wisconsin bogs battle
#0898	10-20-90	12:46 EDT	0510	Environmental ballot issues
#0899	10-20-90	11:47 EDT	0837	Environmental ballot issues
#0900	10-16-90	16:10 EDT	1006	Farm bill
#0901	10-16-90	15:44 EDT	1001	Farm bill discussions
#0902	10-16-90	13:22 EDT	0941	Farm bill
#0903	10-16-90	12:26 EDT	0934	Farm bill discussions

#0904	10-15-90	11:04 EDT	1218	Kissimmee River
#0905	10-10-90	19:10 EDT	0468	Alaskan oil development
#0906	10-05-90	17:37 EDT	0626	Organic food
#0907	10-05-90	17:19 EDT	0619	Farm bill
#0908	10-05-90	13:37 EDT	0374	Loss of wetlands
#0909	10-05-90	13:00 EDT	0374	Loss of wetlands
#0910	10-05-90	02:21 EDT	0374	Loss of wetlands
#0911	10-05-90	00:33 EDT	0374	Loss of wetlands
#0912	10-05-90	00:22 EDT	0374	Loss of wetlands
*				
#0914	10-04-90	17:39 EDT	0440	Loss of wetlands
#0915	10-01-90	10:58 EDT	0537	Supreme Court decision
#0916	03-29-90	11:55 EDT	0565	Shrinking bird habitat
#0917	09-19-90	04:49 EDT	0065	Golf course construction
#0918	09-18-90	11:51 EDT	0132	Golf course construction
#0919	09-10-90	00:33 EDT	0809	State elections
#0920	09-07-90	15:04 EDT	0288	Resolution Trust Corp.
#0921	09-07-90	14:38 EDT	0288	Resolution Trust Corp.
#0922	09-07-90	13:15 EDT	0421	Oil field waste
#0923	09-07-90	03:20 EDT	0300	Resolution Trust Corp.
#0924	09-07-90	00:38 EDT	0292	Resolution Trust Corp.
#0925	08-31-90	13:24 EDT	0751	Water conservation
#0926	08-31-90	12:26 EDT	0531	Water conservation
#0927	08-31-90	01:29 EDT	0531	Water conservation
#0928	08-31-90	01:19 EDT	0531	Water conservation
*				
#0932	08-21-90	00:16 EDT	0748	Florida Keys wetlands
#0933	08-20-90	13:04 EDT	0740	Florida Keys wetlands
#0934	08-17-90	21:47 EDT	0496	Wetlands regulations
#0935	08-17-90	17:53 EDT	0463	Wetlands regulations
#0936	08-02-90	08:33 EDT	0507	Farm bill
#0937	08-02-90	01:52 EDT	0501	Farm bill
#0938	08-01-90	23:47 EDT	0502	Farm bill
#0939	08-01-90	23:19 EDT	0502	Farm bill
#0940	07-31-90	10:51 PDT	0700	Texas oil spill
#0941	07-31-90	09:22 PDT	0709	Texas oil spill
#0942	07-31-90	04:42 PDT	0656	Texas oil spill
#0943	07-31-90	00:24 PDT	0467	Texas oil spill
#0944	07-30-90	22:40 PDT	0650	Farm bill
#0945	07-30-90	19:05 PDT	0741	Texas oil spill
#0946	07-30-90	18:34 PDT	0659	Texas oil spill
#0947	07-28-90	00:45 PDT	0384	Farm bill
#0948	07-27-90	23:45 PDT	0665	Farm bill
#0949	07-27-90	18:33 PDT	0383	Farm bill
#0950	07-27-90	17:30 PDT	0810	Farm bill
#0951	07-27-90	15:48 PDT	0815	Farm bill
#0952	07-27-90	15:42 PDT	0819	Farm bill
#0953	07-27-90	14:51 PDT	0580	Farm bill

#0954	07-22-90	13:40 PDT	0624	Violations of env.'al laws
#0955	07-21-90	08:22 PDT	0621	Violations of env.'al laws
#0956	07-20-90	23:57 PDT	0601	Job safety
#0957	07-20-90	18:49 PDT	1202	La. lawmaker retiring
#0958	07-20-90	14:41 PDT	1087	La. lawmaker retiring
*				
#0960	07-20-90	09:38 PDT	0296	Survey of farmers
#0961	07-20-90	09:26 PDT	0680	Farm bill
#0962	07-20-90	09:20 PDT	0650	Farm bill
#0963	07-20-90	04:46 PDT	0296	Farm bill
#0964	07-20-90	04:41 PDT	0532	Farm bill
#0965	07-20-90	01:34 PDT	0564	Farm bill
#0966	07-19-90	23:09 PDT	0296	Survey of farmers
#0967	07-21-90	13:36 EDT	0806	Wetlands restoration
#0968	07-19-90	18:26 EDT	0398	Survey of farmers
#0969	07-19-90	16:51 EDT	0852	Farm bill
#0970	07-19-90	14:27 PDT	0663	Farm bill
#0971	07-19-90	14:01 PDT	0656	Farm bill
*				
#0973	07-17-90	12:30 PDT	0817	Property tax dispute
#0974	07-16-90	09:18 PDT	1259	Florida panther habitat
#0975	06-30-90	18:39 PDT	0746	Wildlife refuge
#0976	06-30-90	18:11 PDT	0731	Wildlife refuge
#0977	06-30-90	10:16 PDT	0161	Duck stamp
#0978	06-28-90	20:06 PDT	0391	Florida environmental law
#0979	06-28-90	10:50 PDT	0329	Florida environmental law
#0980	06-13-90	21:38 PDT	0354	Pollution suit
#0981	06-13-90	12:17 PDT	0341	Pollution suit
#0982	06-12-90	19:22 PDT	0404	Nuclear weapons plant dispute
#0983	06-05-90	13:37 PDT	0384	Bush: environment
*				
#0985	05-18-90	22:45 EST	0592	Pollution suit
*				
#0987	05-11-90	19:26 EST	0484	Mississippi Delta
#0988	05-09-90	00:14 EST	0302	Construction dispute
#0989	05-05-90	08:43 EST	0366	Everglades fire
#0990	05-04-90	07:36 EST	0653	Senate farm bill
#0991	05-04-90	01:46 EST	0647	Senate farm bill
#0992	05-03-90	14:53 EST	0606	Farm bill
#0993	05-03-90	14:45 EST	0602	Farm bill
#0994	05-03-90	01:57 EST	0654	Farm bill
#0995	05-03-90	01:25 EST	0647	Farm bill
#0996	05-02-90	19:09 EST	0683	Farm bill
#0997	05-02-90	16:20 EST	0677	Farm bill
#0998	05-01-90	18:11 EST	0355	Wildlife refuge
#0999	05-01-90	18:08 EST	0255	Everglades fire
#1000	05-01-90	04:43 EST	0360	Everglades fire
#1001	04-30-90	13:35 EST	0094	Property donation

#1002	04-29-90	23:58 EST	1141	Everglades, agriculture
*				
#1004	04-23-90	13:28 EST	0731	Farm subsidies
#1005	04-23-90	13:13 EST	0725	Farm subsidies
#1006	04-23-90	07:39 EST	0727	Farm subsidies
*				
#1009	04-23-90	02:15 EST	0727	Farm subsidies
*				
#1011	04-23-90	20:13 EST	0085	Earth Day
#1012	04-18-90	01:39 EST	0806	Bush salutes environment
#1013	04-17-90	18:13 EST	0223	Wetlands bill
#1014	04-15-90	13:31 EST	0668	Valdez principles
#1015	04-16-90	12:12 EST	0682	Valdez principles
#1016	04-08-90	16:56 EST	1520	Community programs
#1017	04-01-90	20:48 EST	1269	Construction dispute
*				
#1020	03-26-90	11:11 EST	0479	Texas oil spill
#1021	03-23-90	20:45 EST	0489	Nuclear reactor dispute
#1022	03-22-90	19:08 EST	0674	Oil spills
#1023	03-21-90	17:25 EST	0600	Endangered rivers
#1024	03-19-90	17:01 EST	0421	Conservation legislation
*				
#1026	03-19-90	03:00 EST	0499	Wetlands protection
#1027	03-17-90	00:49 EST	0670	Wildlife preservation
#1028	03-16-90	13:40 EST	0668	Wildlife preservation
#1029	03-16-90	13:08 EST	0662	Wildlife preservation
#1030	03-12-90	12:20 EST	0455	Farm policy
#1031	03-12-90	07:42 EST	0455	Farm policy
#1032	03-12-90	01:23 EST	0455	Farm policy
#1033	03-11-90	16:48 EST	0292	Magazine survey
#1034	03-08-90	01:52 EST	0656	Mollusks
#1035	03-07-90	13:47 EST	0626	Zebra mussel
#1036	03-05-90	12:21 EST	0289	Endangered birds
#1037	02-28-90	00:14 EST	0341	Environmental violation, fine
#1038	02-27-90	12:45 EST	0177	Weeds
#1039	02-26-90	10:09 EST	0285	California oil spill
#1040	02-25-90	22:34 EST	0191	California oil spill
*				
#1042	02-24-90	13:52 EST	0968	Farm bill
#1043	02-23-90	02:47 EST	0666	Landfill fight
#1044	02-23-90	01:02 EST	0615	Pollution suit
#1045	02-22-90	22:30 EST	0615	Pollution suit
#1046	02-20-90	20:41 EST	0315	Wetlands panel
#1047	02-19-90	09:20 EST	0764	California oil cleanup
#1048	02-19-90	00:18 EST	0758	California oil cleanup
#1049	02-17-90	15:48 EST	0632	Oil industry reforms
#1050	02-16-90	22:18 EST	0400	Environmental study
#1051	02-14-90	01:25 EST	0870	California oil spill

#1052	02-13-90	14:52 EST	0763	California oil spill
#1053	02-13-90	00:28 EST	0813	California oil spill
#1054	02-12-90	13:56 EST	0831	Spill threatens wildlife refuge
#1055	02-10-90	17:35 EST	0632	California oil spill
#1056	02-10-90	10:34 EST	0842	California oil spill
#1057	02-09-90	20:08 EST	0891	California oil spill
#1058	02-09-90	13:52 EST	0955	California oil spill
#1059	02-09-90	01:05 EST	1153	California oil spill
#1060	02-08-90	13:43 EST	0708	California oil spill
#1061	02-08-90	13:42 EST	0708	California oil spill
#1062	02-08-90	10:03 EST	0417	New York oil spill suit
#1063	02-08-90	06:30 EST	0029	Quotation
#1064	02-08-90	02:33 EST	0656	Federal polluters
#1065	02-08-90	02:26 EST	0898	California oil spill
#1066	02-08-90	01:06 EST	0437	California oil spill
#1067	02-07-90	23:55 EST	0422	New York oil spill suit
#1068	02-07-90	19:20 EST	0656	Environmentalists: Bush
#1069	02-07-90	12:21 EST	0851	Farm bill
#1070	02-07-90	12:24 EST	0851	Farm bill
#1071	01-31-90	14:08 EST	1068	Conservation group: farm bill
#1072	01-31-90	07:29 EST	0091	Farm bill
#1073	01-31-90	01:23 EST	0577	Farm bill
#1074	01-30-90	16:29 EST	0664	Farm bill
#1075	01-25-90	08:07 EST	0732	Dept. of Environment proposal
#1076	01-23-90	03:10 EST	0505	Everglades preservation
#1077	01-20-90	00:30 EST	0499	Bush discusses issues
#1078	01-18-90	01:41 EST	0586	Saving wetlands
#1079	01-18-90	00:22 EST	0634	Florida's environment
#1080	01-17-90	15:36 EST	0629	Florida's environment
#1081	01-13-90	03:11 EST	0527	Bering Strait
#1082	01-13-90	01:27 EST	0567	Great Lakes cleanup
#1083	01-12-90	19:25 EST	0693	Bering Strait
#1084	01-12-90	18:52 EST	0422	Wetlands agreement
*				
#1086	01-12-90	17:45 EST	0689	Bering Strait
#1087	01-12-90	15:58 EST	0495	Great Lakes pollution
#1088	01-12-90	15:32 EST	0517	Great Lakes pollution
#1089	01-04-90	19:42 EST	0407	New Jersey oil spill
#1090	12-30-89	16:14 EST	0536	Radioactive waste dump
#1091	12-29-89	21:16 EST	0680	Nuclear waste dump
#1092	12-25-89	12:04 EST	0383	Home waste treatment
#1093	12-20-89	12:33 EST	0290	Erodible cropland
#1094	12-20-89	07:41 EST	0290	Erodible cropland
#1095	12-20-89	01:14 EST	0290	Erodible cropland
#1096	12-19-89	20:02 EST	0310	Erodible cropland
#1097	12-19-89	18:57 EST	0304	Erodible cropland
#1098	12-15-89	19:37 EST	0546	Wetlands agreement
*				

#1100	12-15-89	07:06 EST	0245	Wetlands agreement
#1101	12-14-89	20:37 EST	0736	Wetlands agreement
#1102	12-14-89	10:34 EST	0425	Wetlands bill
#1103	12-14-89	08:26 EST	0413	Wetlands bill
#1104	12-13-89	16:36 EST	0683	Wetlands bill
#1105	12-13-89	15:10 EST	0524	Wetlands bill
#1106	12-11-89	12:03 EST	0795	Restoration ecology
#1107	12-08-89	14:21 EST	0410	Rising sea level
#1108	12-08-89	10:18 EST	0540	Wetlands bill
#1109	12-07-89	20:41 EST	0713	Rising sea level
#1110	12-01-89	07:35 EST	0268	Oil spill settlement
#1111	12-01-89	01:41 EST	0262	Oil spill settlement
#1112	11-30-89	22:51 EST	0413	Oil spill settlement
#1113	11-30-89	21:56 EST	0405	Oil spill settlement
#1114	11-30-89	01:52 EST	0385	Oil spill settlement
#1115	11-30-89	00:11 EST	0378	Oil spill settlement
#1116	11-29-89	13:37 EST	0254	Oil spill settlement
#1117	11-29-89	13:17 EST	0386	Oil spill settlement
#1118	11-26-89	23:33 EST	1329	Conneaut Marsh, PA
#1119	11-24-89	13:15 EST	0660	Spotted turtle habitat
#1120	11-19-89	13:55 EST	0946	LA Offshore Oil Port
#1121	11-17-89	15:54 EST	0381	Wetlands policy
#1122	11-07-89	05:55 EST	0130	Duck stamp
#1123	11-07-89	01:37 EST	0549	Duck stamp
#1124	10-28-89	11:34 EST	0519	Everglades threatened
#1125	10-08-89	01:08 EDT	0386	State ballot issues
#1126	10-07-89	11:53 EDT	1282	Beach erosion
#1127	10-08-89	17:18 EDT	1278	Beach erosion
#1128	10-07-89	02:42 EDT	0415	State ballot issues
#1129	10-03-89	20:52 EDT	0619	Gas tax for wetlands fund
#1130	10-03-89	20:40 EDT	0483	Gas tax for wetlands fund
#1131	09-22-89	13:39 EDT	0616	Wetlands destruction
#1132	09-22-89	12:26 EDT	0611	Wetlands destruction
#1133	09-22-89	07:35 EDT	0614	Wetlands destruction
#1134	09-22-89	02:02 EDT	0606	Wetlands destruction
*				
#1136	09-16-89	11:08 EDT	2208	Western states' centennials
#1137	09-17-89	13:09 EDT	2253	Western states' centennials
#1138	09-13-89	07:38 EDT	0556	Drilling ban
#1139	09-13-89	02:34 EDT	0548	Drilling ban
#1140	09-12-89	20:33 EDT	0553	Drilling disputes
#1141	09-19-89	19:49 EDT	0546	Drilling disputes
#1142	09-02-89	16:42 EDT	0527	Pollution violators
*				
#1146	08-30-89	05:18 EDT	0560	Two Forks dam proposal
#1147	08-29-89	00:26 EDT	0808	ND wetlands disputes
#1148	08-28-89	12:10 EDT	0816	ND wetlands disputes
#1149	08-29-89	15:57 EDT	0823	ND wetlands disputes

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#1151	08-17-89	00:34 EDT	0546	Weeds
#1152	08-13-89	17:06 EDT	0536	HUD projects
#1153	08-10-89	02:52 EDT	0242	Rubber duck race
#1154	08-01-89	21:18 EDT	0239	Rubber duck race
#1155	07-25-89	02:05 EDT	0338	Coastal pollution
#1156	07-22-89	13:55 EDT	0664	Hunting regulations
#1157	07-22-89	16:40 EDT	0781	Making maps
#1158	07-13-89	12:36 EDT	0647	Environment center museum
#1159	07-13-89	08:42 EDT	0657	Environment center museum
#1160	06-26-89	23:57 EDT	0316	Marshes
*				
#1164	06-26-89	16:21 EDT	0602	RI oil spill
*				
#1166	06-26-89	23:59 EDT	0812	Coastal islands
#1167	06-27-89	12:48 EDT	0824	Coastal islands
#1168	06-27-89	12:37 EDT	1551	Loss of LA wetlands
#1169	06-26-89	12:50 EDT	0937	RI oil spill
#1170	06-26-89	00:03 EDT	0478	LA wetlands
*				
#1174	06-26-89	12:18 EDT	0482	LA wetlands
#1175	06-26-89	12:14 EDT	0515	LA marshlands
#1176	06-26-89	12:14 EDT	1590	Barrier islands
#1177	06-21-89	20:26 EDT	0448	National parks
#1178	06-15-89	13:11 EDT	0413	LA beach threatened
#1179	06-13-89	03:15 EDT	0177	Wetlands policies
#1180	06-12-89	21:47 EDT	0347	Wetlands policies
#1181	06-11-89	12:54 EDT	1446	Construction dispute
#1182	06-08-89	17:43 EDT	0884	Bush discusses issues
#1183	06-08-89	00:56 EDT	0574	Michael Deland appointment
#1184	06-07-89	20:02 EDT	0541	Council on Environmental Quality
#1185	06-07-89	18:11 EDT	0534	Council on Environmental Quality
#1186	06-04-89	14:03 EDT	1149	Ed Zern honors conservationists
*				
#1189	05-22-89	14:46 EDT	0162	*Everglades* author honored
#1190	05-21-89	13:27 EDT	0986	Wetlands research
#1191	05-16-88	17:10 EDT	0433	Punishing polluters
#1192	05-16-89	12:37 EDT	0502	Punishing polluters
#1193	05-16-89	12:22 EDT	0504	Punishing polluters
*				
#1195	05-11-89	19:16 EDT	0191	Launching ladybugs
*				
#1197	04-27-89	14:00 EDT	0247	LA's coastal marshes
#1198	04-12-89	07:48 EDT	0723	Water leases in CA
#1199	04-12-89	02:53 EDT	0716	Water leases in CA
#1200	04-11-90	21:45 EDT	0761	Fire in Everglades
*				
#1202	04-09-89	23:59 EDT	0587	Waterfowl management plan

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#1204	04-01-89	12:29 EST	0977	Hazelwood charged
#1205	03-31-89	20:37 EST	0373	Colorado dam proposal
#1206	03-22-89	21:04 EST	0539	Coastal barriers
#1207	03-18-89	17:19 EST	0161	Okefenokee Swamp postcard
#1208	03-14-89	01:47 EST	0241	MA beaver relocation program
#1209	03-13-89	15:48 EST	0647	MA beaver relocation program
#1210	03-06-89	19:47 EST	0467	VT voting issues
*				
#1213	02-14-89	06:41 EST	0118	Florida weather
#1214	02-14-89	01:50 EST	0691	Florida weather
#1215	02-10-89	05:50 EST	0453	Bush's budget proposal
#1216	02-09-89	23:16 EST	0691	Bush discusses issues
#1217	02-09-89	21:48 EST	0685	Bush discusses issues
#1218	02-09-89	21:45 EST	1176	Bush discusses budget
#1219	02-09-89	21:39 EST	1170	Bush discusses budget
#1220	02-09-89	21:21 EST	0449	Bush's budget proposal
#1221	02-09-89	07:42 EST	0996	Bush and budget
#1222	02-09-89	00:38 EST	0988	Bush and budget
*				
#1224	01-26-89	11:29 EST	0454	Conservation report
#1225	01-26-89	11:02 EST	0447	Conservation report
#1226	01-21-89	10:13 EST	0628	Duck hunting
#1227	01-21-89	20:34 EST	0650	Duck hunting
#1228	01-19-89	14:08 EST	0382	Wetlands protection
#1229	01-11-89	16:57 EST	0444	Protecting rare plants
#1230	01-11-89	12:56 EST	0206	Conservation Reserve Program
#1231	01-11-89	12:19 EST	0206	Conservation Reserve Program
#1232	01-11-89	07:36 EST	0206	Conservation Reserve Program
#1233	01-11-89	01:08 EST	0206	Conservation Reserve Program
#1234	01-10-89	18:10 EST	0225	Conservation Reserve Program
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#1236	12-24-88	09:30 EST	0655	U.S. Wildlife Refuge System
#1237	12-24-88	06:27 EST	0417	WA oil spill
#1238	12-24-88	12:36 EST	0670	U.S. Wildlife Refuge System
#1239	12-23-88	01:18 EST	0857	Reilly, Bush EPA nominee
#1240	12-22-88	17:24 EST	0795	Reilly, Bush EPA nominee
#1241	12-22-88	17:16 EST	0796	Reilly, Bush EPA nominee
#1242	12-06-88	14:15 EST	0248	Bald eagle's death
#1243	12-04-88	15:57 EST	0132	Lee Thomas, EPA
#1244	12-04-88	11:32 EST	0845	Lee Thomas, EPA
#1245	12-04-88	14:13 EST	1511	Pollution dispute
#1246	12-03-88	10:23 EST	0607	West TN river system
#1247	11-30-88	17:13 EST	0790	Environmentalists' wish list
#1248	11-28-88	14:31 EST	0298	Sandhill cranes
#1249	11-22-88	15:20 EST	0385	Bush discusses plans
#1250	11-22-88	15:12 EST	0557	Bush discusses plans
#1251	11-20-88	14:39 EST	0834	Farm, environmental concerns

#1252	11-20-88	13:25 EST	0826	Farm, environmental concerns
#1253	11-18-88	16:26 EST	0848	Bush and Congress
#1254	11-15-88	16:47 EST	0839	Panel: wetlands protection
#1255	11-15-88	01:22 EST	0642	Panel: wetlands protection
#1256	11-14-88	13:04 EST	0712	Bush campaign promises
#1257	11-14-88	05:56 EST	0125	Bush campaign promises
#1258	11-14-88	00:51 EST	0727	Bush and environment
#1259	11-12-88	09:20 EST	0500	Duck stamp artist
#1260	11-12-88	13:59 EST	0509	Duck stamp artist
#1261	11-11-88	07:56 EST	0712	Super collider plans
#1262	11-11-88	00:57 EST	0716	Super collider plans
#1263	11-10-88	17:17 EST	0724	Super collider plans
#1264	11-06-88	14:17 EST	1454	Development of Florida Keys
#1265	11-02-88	13:55 EST	0736	Bush and Dukakis
#1266	11-02-88	01:47 EST	0719	Cape Cod
#1267	11-01-88	16:01 EST	0844	Cape Cod
#1268	11-01-88	15:50 EST	0837	Cape Cod
#1269	11-01-88	14:03 EST	0406	FL alligator hunting
#1270	10-29-88	10:48 EDT	1574	Bush and Dukakis
#1271	10-30-88	13:25 EDT	1583	Bush and Dukakis
#1272	10-27-88	17:55 EDT	0560	Endangered wildlife refuges
#1273	10-26-88	13:33 EDT	1163	Acid-eating microbe
#1274	10-26-88	13:05 EDT	1164	Acid-eating microbe
#1275	10-27-88	13:50 EDT	0363	Acid-eating microbe
#1276	10-26-88	13:39 EDT	1171	Acid-eating microbe
#1277	10-27-88	00:01 EDT	1165	Acid-eating microbe
#1278	10-21-88	22:29 EDT	0837	RI Governor's aide
#1279	10-20-88	01:13 EDT	0903	Greenhouse effects
#1280	10-19-88	18:00 EDT	1054	Global warming
#1281	10-17-88	16:20 EDT	0180	Bush environmental record
#1282	10-17-88	15:23 EDT	0467	Rare giant fern
#1283	10-12-88	10:43 EDT	0342	Everglades pollution
#1284	10-10-88	16:30 EDT	0622	Greenhouse warming
#1285	10-09-88	15:45 EDT	0431	Water pollution fines
#1286	10-09-88	15:38 EDT	0424	Water pollution fines
#1287	10-05-88	14:13 EDT	0303	Kidnapper hunted
#1288	09-25-88	11:29 EDT	0845	Global warming
#1289	09-24-88	14:47 EDT	2088	Presidential candidates
#1290	09-25-88	13:37 EDT	2106	Presidential candidates
#1291	09-17-88	15:52 EDT	0388	Hurricane Gilbert
*				
#1293	09-02-88	01:08 EDT	0728	Bush, Dukakis
#1294	09-01-88	18:25 EDT	0734	Bush, environment
#1295	09-01-88	14:08 EDT	1036	Boston Harbor
#1296	09-01-88	00:46 EDT	0697	Bush, environment
#1297	08-31-88	13:42 EDT	0650	Bush, acid rain
#1298	08-27-88	10:28 EDT	0530	PA duck flocks
#1299	08-27-88	00:29 EDT	0665	Supercollider plans

#1300	08-26-88	17:17 EDT	0666	Supercollider plans
#1301	08-27-88	19:24 EDT	0545	PA duck flocks
#1302	08-19-88	08:36 EDT	0726	Heat wave
#1303	08-18-88	18:58 EDT	0109	Stillwater Nat'l Wildlife Refuge
#1304	08-18-88	14:28 EDT	0774	Stillwater Nat'l Wildlife Refuge
#1305	08-17-88	07:50 EDT	0412	EPA: wetlands threatened
#1306	08-17-88	01:33 EDT	0405	EPA: wetlands threatened
#1307	08-16-88	18:52 EDT	0426	EPA: wetlands threatened
#1308	08-11-88	12:52 EDT	0253	Protecting wetlands
#1309	08-07-88	11:32 EDT	0660	FL alligator hunting
#1310	08-06-88	00:34 EDT	0658	Duck hunting
#1311	08-03-88	17:21 EDT	0589	FL alligator hunting
#1312	07-16-88	16:32 EDT	0614	Reagan policies
#1313	07-26-88	14:39 EDT	0701	Duck hunting
#1314	07-26-88	12:41 EDT	0693	Duck hunting
#1315	07-26-88	00:18 EDT	0763	Duck population
#1316	07-15-88	20:23 EDT	0523	W. Va. highway construction
#1317	07-12-88	20:52 EDT	0445	CA Wildlife Refuge
#1318	07-12-88	02:09 EDT	0544	Drought effects on wildlife
#1319	07-01-88	15:19 EDT	0625	Wildlife endangered
#1320	07-01-88	14:35 EDT	0619	Wildlife endangered
#1321	07-01-88	04:31 EDT	0534	Dukakis and Massachusetts
#1322	06-25-88	10:52 EDT	0027	Quotation
#1323	06-26-88	17:31 EDT	0027	Quotation
*				
#1325	06-24-88	12:32 EDT	0818	Waterfowl ailing
#1326	06-24-88	01:26 EDT	0797	Waterfowl ailing
#1327	06-23-88	14:12 EST	0431	Construction halted
#1328	06-22-88	20:19 EDT	0737	Heatwave
#1329	06-20-88	22:31 EDT	0407	FL alligator hunting
#1330	06-13-88	01:28 EDT	0758	Greenhouse effect
#1331	06-06-88	15:47 EDT	0391	FL oil spill
#1332	06-06-88	00:06 EDT	0661	Duck hunting
#1333	06-05-88	17:15 EDT	0482	FL oil spill
#1334	06-04-88	11:10 EDT	0632	Sherburne Na'l Wildlife Refuge
#1335	06-04-88	13:56 EDT	0657	Sherburne Na'l Wildlife Refuge
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#1337	04-30-88	16:18 EDT	0810	CA oil spill
#1338	04-28-88	19:29 EDT	0631	CA oil spill
#1339	04-28-88	04:21 EDT	0530	CA oil spill
#1340	04-27-88	19:12 EDT	0329	CA oil spill
#1341	04-26-88	13:45 EDT	0548	CA oil spill
#1342	04-25-88	19:17 EDT	0331	CA oil spill
#1343	04-25-88	06:40 EDT	0432	CA oil spill
#1344	04-24-88	23:51 EDT	0422	CA oil spill
#1345	04-21-88	02:21 EDT	0460	Aquafund proposal
#1346	04-20-88	15:38 EDT	0398	Aquafund proposal
#1347	04-16-88	00:55 EDT	0644	Protecting soil, water resources

#1348	04-15-88	19:39 EDT	0227	Protecting soil, water resources
#1349	04-12-88	09:49 EDT	0210	Salt marsh harvest mice
#1350	04-11-88	10:02 EDT	0439	Endangered wood storks
*				
#1352	03-19-88	10:47 EST	0595	Environmental Quality Index
#1353	03-19-88	02:47 EST	0610	Environmental Quality Index
*				
#1355	03-07-88	16:34 EST	0486	Clean air standards
#1356	02-24-88	19:52 EST	0362	Construction in Florida
#1357	02-19-88	10:27 EST	0651	Reagan's proposed budget
#1358	02-19-88	09:58 EST	0630	Reagan's proposed budget
#1359	02-18-88	16:53 EST	0601	Federal budget
#1360	02-18-88	16:46 EST	0594	Federal budget
#1361	02-06-88	10:24 EST	0532	Duck habitat
#1362	02-06-88	12:26 EST	0556	Duck habitat
#1363	01-26-88	17:44 EST	0316	Swampbuster program
#1364	01-22-88	18:45 EST	0608	Regulations dispute
#1365	01-12-88	19:44 EST	0420	Developers fined by EPA
#1366	01-12-88	19:23 EST	0413	Developers fined by EPA
#1367	12-30-87	10:38 EST	0924	Super collider
#1368	12-30-87	10:34 EST	0924	Super collider
#1369	12-30-87	15:56 EST	0863	Conservation Reserve Program
#1370	12-27-87	13:35 EST	0856	Conservation Reserve Program
#1371	12-15-87	17:49 EST	0444	Chesapeake Bay restoration
#1372	12-15-87	11:26 EST	0443	Bay preservation
#1373	12-02-87	08:56 EST	0444	Bay preservation
#1374	11-07-87	17:38 EST	0415	Selenium in runoff
#1375	10-28-87	20:22 EST	0491	Stadium construction
#1376	10-28-87	14:37 EST	0591	Greenhouse effect
#1377	10-23-87	21:16 EDT	0378	Bay conservation
#1378	10-23-87	12:03 EDT	0376	Dioxin in city incinerator
#1379	10-29-87	19:17 EDT	0438	Construction dispute
#1380	10-18-87	13:49 EDT	1950	Florida development
#1381	10-18-87	13:46 EDT	1938	Florida development
#1382	10-14-87	07:41 EDT	0181	MI interstate construction
#1383	10-05-87	12:00 EDT	0272	W. Va. dam construction
#1384	10-01-87	21:08 EDT	0521	Development disputes
*				
#1386	09-16-87	12:34 EDT	0596	Conservation program
#1387	09-16-87	09:16 EDT	0577	Erodible cropland
#1388	09-16-87	07:48 EDT	0596	Conservation program
#1389	09-16-87	01:23 EDT	0596	Conservation program
#1390	09-15-87	19:30 EDT	0567	Erodible cropland
*				
#1393	08-24-87	12:51 EDT	0262	IL marshes transplanted
#1394	08-20-87	02:27 EDT	0420	Martha's Vineyard dispute
#1395	08-19-87	19:41 EDT	0385	Martha's Vineyard dispute
#1396	08-18-87	17:08 EDT	0280	CA marsh preservation

#1397	08-11-87	14:44 EDT	0280	Golf course construction
#1398	08-09-87	13:32 EDT	0899	Discussion on legislation
#1399	07-31-87	03:30 EDT	0668	Phoenix (Ariz.) Indian School
#1400	07-31-87	08:22 EDT	0478	Audubon PBS Specials
#1401	07-16-87	16:56 EDT	0417	National Wetlands Policy
#1402	07-10-87	20:17 EDT	0374	Duck hunting
*				
#1405	07-08-87	07:36 EDT	0965	FL oil drilling
#1406	07-07-87	23:48 EDT	0964	FL oil drilling
#1407	07-07-87	17:16 EDT	0963	FL oil drilling
#1408	07-07-87	12:20 EDT	0964	FL oil drilling
#1409	07-08-87	16:15 EDT	0981	FL oil drilling
#1410	07-08-87	13:32 EDT	0975	FL oil drilling
#1411	07-03-87	08:20 EDT	0667	American architecture
*				
#1414	06-12-87	14:26 EDT	0523	Alaska oil drilling
#1415	06-12-87	14:11 EDT	0524	Alaska oil drilling
#1416	06-13-87	20:10 EDT	0588	Conservation goals
#1417	06-12-87	13:01 EDT	0693	Alaska oil drilling
#1418	06-12-87	12:45 EDT	0691	Alaska oil drilling
#1419	06-09-87	07:39 EDT	0673	Alaska oil drilling
#1420	06-08-87	23:54 EDT	0666	Alaska oil drilling
#1421	05-11-87	08:33 EDT	0690	Farm conservation
#1422	05-11-87	00:09 EDT	0684	Farm conservation
#1423	05-09-87	02:21 EDT	0349	CA highway construction
#1424	05-02-87	01:41 EDT	0445	Game hunting
#1425	04-28-87	11:43 EDT	0457	Environmental violations
#1426	04-26-87	11:33 EDT	0807	Maine's landscape
#1427	04-27-87	14:15 EDT	0818	Maine's landscape
#1428	04-21-87	20:01 EDT	0393	Garbage barge
#1429	04-10-87	02:44 EDT	0271	Soil conservation plan
#1430	04-09-87	20:17 EDT	0340	Soil conservation plan
#1431	04-08-87	02:01 EDT	0585	Soil erosion issue
#1432	04-07-87	16:00 EDT	0607	Soil erosion issue
#1433	04-06-87	04:38 EDT	0899	Interstate highway construction
#1434	04-04-87	15:04 EST	0976	Interstate highway construction
#1435	04-04-87	13:40 EST	0408	Game wardens' roles
#1436	03-31-87	02:24 EST	0388	Stadium construction
#1437	03-26-87	19:50 EST	0455	Homeport construction
#1438	03-23-87	16:44 EST	0547	Shoreline development
#1439	03-23-87	15:17 EST	0485	Beavers in Massachusetts
#1440	03-18-87	19:31 EST	0567	Water pollution
#1441	03-16-87	07:36 EST	0415	Am. Land Resources Assoc.
#1442	03-16-87	02:23 EST	0415	Am. Land Resources Assoc.
#1443	03-13-87	06:32 EST	0666	Stadium construction
#1444	03-12-87	07:21 EST	0481	Muskrats to eat
#1445	02-21-87	14:35 EST	0559	Ducks Unlimited
#1446	02-21-87	13:50 EST	0553	Ducks Unlimited

#1447	02-16-87	15:50 EST	0625	Duck population
#1448	01-15-87	00:38 EST	0753	Everglades Coalition
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#1450	01-14-87	16:24 EST	0749	Everglades Coalition
#1451	01-05-87	07:49 EST	0273	Swampbuster program
#1452	01-05-87	01:22 EST	0273	Swampbuster program
#1453	01-05-87	12:23 EST	0273	Swampbuster program
#1454	12-27-86	17:35 EST	0476	Matagorda Island
#1455	12-24-86	15:13 EST	0213	Lagoon protection
#1456	12-20-86	13:28 EST	0625	Florida development
#1457	12-20-86	17:06 EST	0753	Duck migration
#1458	12-17-86	08:51 EST	0342	Florida development
#1459	12-16-86	18:58 EST	0360	Conservation land purchases
#1460	12-12-86	22:47 EST	0204	Oakland port expansion
*				
#1462	12-03-86	15:20 EST	0333	Environmental policies
#1463	11-23-86	13:51 EST	0756	Converting swamps
#1464	11-23-86	13:29 EST	0751	Converting swamps
#1465	11-12-86	13:54 EST	0767	100th Congress prospects
#1466	11-12-86	13:37 EST	0761	100th Congress prospects
#1467	11-06-86	01:53 EST	0116	Highway construction
#1468	11-06-86	18:43 EST	0131	Highway construction
#1469	10-27-86	23:56 EST	0366	Highway construction
#1470	10-22-86	13:26 EDT	0704	Election issues
#1471	10-14-86	14:12 EDT	0341	Duck stamps
#1472	10-12-86	13:33 EDT	0846	Swampbuster rules
*				
#1474	10-07-86	04:27 EDT	0181	EPA forms new office
#1475	10-06-86	22:31 EDT	0262	Office of Wetlands Protection
#1476	10-06-86	11:38 EDT	0347	California wetlands dispute
#1477	10-02-86	00:59 EDT	1709	Watering the West
#1478	10-01-86	12:38 EDT	1674	Watering the West
#1479	10-01-86	00:30 EDT	0820	Selenium in runoff
#1480	09-30-86	12:56 EDT	0822	Selenium in runoff
#1481	10-01-86	13:42 EDT	0833	Selenium in runoff
#1482	09-28-86	13:23 EDT	1547	Endangered plants
*				
#1484	09-17-86	01:45 EDT	0472	Road construction dispute
#1485	09-16-86	18:52 EDT	0542	Logging dispute
#1486	08-23-86	00:25 EDT	0145	Swampbuster provision
#1487	08-16-86	20:40 EDT	0743	Osprey habitat
#1488	08-03-86	13:20 EDT	1375	Mining pollution
#1489	06-28-86	19:39 EDT	0574	N. Am. Wildlife Mgmt. Plan
#1490	06-26-86	04:24 EDT	0503	Soil conservation practices
#1491	06-25-86	18:33 EDT	0417	Soil conservation practices
#1492	06-25-86	18:10 EDT	0410	Soil conservation practices
#1493	06-04-86	16:57 EDT	0419	Threatened birds
#1494	06-01-86	13:37 EDT	2757	Protecting wildlife

#1495	05-27-86	16:06 EDT	0205	Environmental violators
#1496	05-27-86	01:38 EDT	0550	Rising sea levels
#1497	05-14-86	05:12 EST	0427	Mall construction vetoed
#1498	05-06-86	14:21 EST	0524	Tax changes proposed
#1499	05-04-86	23:13 EST	0711	Florida Everglades
#1500	05-04-86	23:11 EST	0404	Florida wetlands
#1501	05-04-86	22:57 EST	0736	Douglas, Everglades author
#1502	05-04-86	22:51 EST	1643	Preserving Everglades
#1503	04-27-86	14:35 EST	1338	Duck stamp
#1504	04-20-86	14:20 EST	0554	Farm bill
#1505	04-13-86	13:52 EST	0575	Endangered plants
#1506	04-12-86	11:14 EST	1176	Sandhill crane migration
#1507	04-13-86	15:10 EST	1184	Sandhill crane migration
#1508	04-09-86	02:07 EST	0337	Coastal Zone Mgmt. Act
#1509	04-08-86	20:34 EST	0388	Coastal Zone Mgmt. Act
#1510	03-30-86	14:42 EST	1259	Grizzly bears in Montana
#1511	03-24-86	00:26 EST	0869	Water sales restriction
#1512	03-23-86	14:55 EST	0862	Water sales restrictions
#1513	03-05-86	17:03 EST	0350	Mall construction vetoed
#1514	03-05-86	07:37 EST	0340	Endangered redfish
#1515	02-27-86	21:02 EST	0438	Env.'l Quality Index for 1986
*				
#1518	02-17-86	13:24 EST	0652	Tax law proposals
#1519	02-18-86	01:04 EST	0657	Tax law proposals
*				
#1521	01-19-86	06:05 EST	1002	Food Security Act of 1985
#1522	01-08-86	12:48 EST	0849	Duck hunting
#1523	01-07-86	20:33 EST	0849	Duck hunting
#1524	01-01-86	04:18 EST	0154	Wetlands permits
#1525	12-31-85	15:16 EST	0225	Wetlands agreement
#1526	12-19-85	14:08 EST	0510	Mark Trail comic strip
#1527	12-19-85	00:58 EST	1544	1985 farm bill
#1528	12-18-85	15:55 EST	1539	1985 farm bill
#1529	12-18-85	15:45 EST	1538	1985 farm bill
#1530	12-12-85	02:47 EST	0502	Selenium poisoning in West
#1531	12-11-85	14:46 EST	0581	Selenium in runoff
#1532	12-05-85	13:46 EST	0323	WI highway construction
#1533	12-04-85	15:31 EST	0657	Supreme Court cases
#1534	12-04-85	10:36 EST	0368	1985 farm bill
#1535	11-25-85	00:53 EST	1405	1985 farm bill
#1536	11-23-85	21:11 EST	1612	Legislation discussions
#1537	11-07-85	14:12 EST	0671	Conservation and tax laws
#1538	11-07-85	13:49 EST	0662	Conservation and tax laws
#1539	11-08-85	13:53 EST	0252	Cape Cod land preservation
#1540	11-02-85	15:51 EST	0628	Hurricane Juan flood damage
#1541	11-01-85	22:16 EST	0669	FL flood damage
#1542	10-29-85	00:17 EST	0766	Water pollution from mines
#1543	10-28-85	13:15 EST	0758	Water pollution from mines

#1544	10-18-85	23:13 EDT	1140	Massachusetts Superfund site
#1545	10-26-85	11:49 EDT	1131	Massachusetts Superfund site
#1546	10-22-85	11:31 EDT	0452	Delaware oil spill
#1547	10-17-85	03:00 EDT	0618	Canadian geese migration
#1548	10-09-85	02:24 EDT	1247	1985 farm bill
#1549	10-08-85	19:55 EDT	1246	1985 farm bill
#1550	10-02-85	13:35 EDT	0446	Delaware/NJ oil spill
#1551	10-01-85	22:55 EDT	0407	Delaware/NJ oil spill
#1552	10-01-85	11:07 EDT	0461	Delaware/NJ oil spill
#1553	09-30-85	11:27 EDT	0783	Delaware/NJ oil spill
#1554	09-17-85	20:09 EDT	0469	Delaware/NJ oil spill
#1555	09-13-85	12:46 EDT	0589	Migratory bird hunting
*				
#1557	08-01-85	10:10 EDT	0778	Lead shot ban for hunting
#1558	07-25-85	01:33 EDT	0896	Rising Malheur Lake in Oregon
#1559	07-24-85	14:34 EDT	0888	Industrial pollution
#1560	07-16-85	14:35 EDT	0353	Industrial pollution
#1561	07-16-85	14:21 EDT	0668	Oil drilling discussions
#1562	07-11-85	19:05 EDT	0686	Conservationists laud legislation
#1563	07-10-85	08:02 EDT	0615	Conservation provisions
#1564	07-10-85	02:10 EDT	0608	1985 farm bill
#1565	07-07-85	16:09 EDT	0468	1985 farm bill
#1566	07-09-85	22:23 EDT	0651	Alligator hunting
#1567	06-25-85	12:50 EDT	0555	Farm legislation
#1568	06-10-85	10:02 EDT	0520	CA selenium threat
*				
#1570	06-09-85	21:03 EST	0544	FL wildlife
*				
#1572	05-31-85	01:26 EDT	0434	Grazing fee structure
#1573	05-30-85	23:41 EDT	0412	Grazing fee formula
*				
#1575	05-07-85	19:42 EDT	0532	Harvard, Mass. community
#1576	05-07-85	12:57 EDT	0480	Harvard, Mass. community
#1577	04-29-85	16:37 EDT	0517	Urban dwellers and wetlands
#1578	04-18-85	09:39 EST	0536	Wetlands destruction
*				
#1580	03-30-85	13:27 EST	0676	Great Salt Lake rising
#1581	03-29-85	20:41 EST	0635	Polluted irrigation runoff
#1582	03-22-85	13:39 EST	0826	FL development
*				
#1587	03-05-85	18:41 EST	0411	Federal duck stamp
#1588	03-02-85	00:45 EST	0244	CA drilling dispute
#1589	02-19-85	15:11 EST	0987	Supreme Court cases
#1590	02-19-85	13:10 EST	0760	Supreme Court cases
#1591	02-19-85	10:17 EST	0352	Supreme Court, wetlands dispute
#1592	02-05-85	12:03 EST	0378	"American Sportsman" program
#1593	02-04-85	05:30 EST	0443	FL brush fires
#1594	02-03-85	15:15 EST	0520	FL brush fires

#1595	01-19-85	06:00 EST	0528	ND water project
#1596	01-18-85	22:49 EST	0253	ND water project
#1597	11-30-84	04:04 PST	0271	ND water project
#1598	11-28-84	17:10 PST	0234	ND water project
#1599	10-26-84	21:58 PDT	1484	Reagan discusses issues
#1600	10-25-84	22:41 PDT	0471	Wildlife preservation bill
#1601	10-23-84	13:20 PDT	0116	Group endorses Mondale
#1602	10-11-84	06:06 PDT	0371	National historic site
#1603	10-11-84	12:27 PDT	0430	National historic site
#1604	10-09-84	19:37 PDT	0831	National historic site
#1605	09-12-84	05:38 PDT	0365	CA development dispute
#1606	09-11-84	01:41 PDT	0495	Bog turtle habitat
#1607	09-10-84	15:08 PDT	0283	Bog turtle habitat
#1608	09-06-84	08:01 PDT	0517	SC property dispute
#1609	09-07-84	18:16 PDT	0696	World's Fair exhibits
#1610	08-06-84	08:15 PDT	0697	Texas oil spill
#1611	08-05-84	19:57 PDT	0952	Texas oil spill
#1612	08-04-84	09:27 PDT	0724	Texas oil spill
#1613	07-31-84	00:32 PDT	0687	World's Fair exhibits
#1614	07-28-84	00:36 PDT	0612	*HMS De Braak* wreck recovery
#1615	07-27-84	14:09 PDT	0764	*HMS De Braak* wreck recovery
#1616	07-12-84	08:36 PDT	0883	Reagan's administration
#1617	07-12-84	15:25 PDT	0789	Reagan's discusses record

APPENDIX E

SUMMARIES OF SELECTED AP ARTICLES

ON WETLANDS, 1984-95

This section provides summaries of selected Associated Press news articles mentioning *wetlands* during the 11-year period of 1984-95 covered in this study. During this time governmental leaders, regulatory guidelines, and political climate underwent various changes. For example, the full term of President Bush and portions of the terms of Presidents Reagan and Clinton are included in the time period. Conflicts and policy debates involving environmental and regulation issues generally, and wetlands issues specifically, remained on the public policy agenda throughout the period. This section lists summary descriptive statistics (determined through the Frame Mapping Method as described in this study) for the Conservation Frame terms and the Property-Owner Frame terms in wetlands news coverage for each July-June annual period along with summaries from exemplar news articles released by The Associated Press. Direct quotations throughout this section were taken exactly from the AP news articles.

Wetlands Coverage in 1984-85

Summary Descriptive Statistics:

43 articles mentioned wetlands

350 total Conservation Frame terms, averaging 8.14 occurrences per article

237 total Property-Owner Frame terms, averaging 5.51 occurrences per article

Of the more than 1,400 Associated Press articles reviewed in this study beginning in July 1984, the very earliest report is a **July 12, 1984,** article in which President Reagan spoke in Bowling Green, Ky., to a group of 10,000 campers and hikers, proclaiming that his administration had taken important steps to preserve the environment. In particular, Reagan mentioned that national parks needed improved maintenance, protection of endangered species had been neglected, state pollution reduction measures were being restrained by federal government, and wetlands were "in grave danger of disappearing."

According to the article, conservation groups reacted with "astonishment" and disagreement to Reagan's claims. Spokespersons for the National Audubon Society, the Sierra Club, and the Wilderness Society, cited in the article, describe the President's speech as "an affront to the intelligence of the American people," "a distortion," and a misleading account of his administration's environmental record. The conservationists, however, expressed optimism over the appointments of the new Interior Secretary, William P. Clark, succeeding James Watt who served the first three years of the Reagan administration, as well as the new head of the Environmental Protection Agency, William Ruckelshaus, succeeding Anne Burford.

Several news articles in late **July** and **August 1984** report on an 85-mile-long oil slick that contaminated some beaches near Galveston, Texas, but spared "environmentally sensitive wetlands along the shore." The spill occurred when the British tanker *Alvenus* ran aground in the channel off Cameron, La.

A **Sept. 6, 1984,** article released by AP reports a dispute between the U.S. Corps of Engineers and the Environmental Protection Agency related to the issuance of a permit to landowner Graham Reeves of Charleston, S.C., to erect dikes and impound 550 acres of former rice fields to produce shrimp. While the Corps of Engineers maintained the permit issuance was acceptable, EPA staff scientists said the projected loss of 33 acres of wetlands would harm the tidal marsh and would have "a severe and unacceptable impact" on fish and shellfish reproduction.

The discovery of rare bog turtles at an undisclosed location in Berkshire County, Mass., is reported in a **Sept. 11, 1984,** article. "According to state experts, populations of bog turtles, widely scattered across the eastern United States, are believed to be declining due to illegal collecting and continued loss of suitable wetlands," the article states. Wildlife expert Robert Zappalorti is quoted, " . . . once they're gone, you can't get them back."

A bitter dispute between environmentalists and would-be developers of Playa Vista luxury condominiums in Marina del Rey, Calif., is reported in a **Sept. 12, 1984,** article. When government planners gave initial approval, environmentalists charged that decisions were based on politics rather than on scientific evidence.

An **Oct. 23, 1984,** article datelined Trenton, N.J., reports a Florida conservation group endorsed Walter Mondale for president. The Florida League of Conservation Voters gave Reagan marks of "D" and "F" on environmental issues such as water pollution, "protection of ocean coasts and wetlands, parks, wildlife, wilderness, public lands and his energy policies."

In an article datelined Washington, Associated Press reported on **Oct. 25, 1984,** that Reagan signed a bill extending the 23-year-old Wetlands Loan Act authorizing loans of up to $200 million to buy swamps and marshes for waterfowl habitat. A Sierra Club spokesperson criticized the President as an "election-year environmentalist," noting he had previously opposed the bill.

A reduced version of the controversial Garrison Diversion water project, which would divert water from the Missouri River to use in irrigation in central and eastern North Dakota, was endorsed by Interior Secretary William Clark, according to a **Jan. 18, 1985,** article datelined Bismarck, N.D. The endorsement came over the protests of environmentalists and Canadian officials who feared effects on waterfowl, wetlands, and water basins.

The headline of a **Feb. 19, 1985,** article announces, "Court Will Review Michigan Wetlands Case." According to the article datelined Washington, the Supreme Court "agreed to review the government's power to regulate and prevent development of 'wetlands.' The justices said they will hear a government appeal that a federal appeals court ruling in a Michigan case exempts from environmental controls millions of acres of swamps, marshes and bogs." The *U.S. vs Riverside Bayview Homes* case, 84-701, began in 1976 when Riverside Bayview Homes added dirt fill, without a permit from the U.S. Army Corps of Engineers, to an 80-acre construction site near Lake St. Clair, Mich. The development was challenged by the government and halted by a federal judge order, but the judge's order was overturned by the 6th Circuit Court of Appeals ruling.

Justice Department lawyers challenged the appeals court ruling, claiming it was inconsistent with other federal court rulings and improperly exempted from the Clean Water Act some 2.13 million acres of wetlands in its jurisdiction region—including Michigan, Kentucky, Ohio, and Tennessee. "Wetlands perform unique ecological services," the government appeal said. "Wetlands provide $140 billion worth of flood protection and water purification services."

"Sportsmen and Conservationists Back Bill," the headline of a **March 5, 1995,** article announces. A proposal to charge for admission to wildlife refuges and increase fees to duck hunters for federal stamps was endorsed by sportsmen and conservationists, the article reports. Funds would be used to buy more environmentally sensitive wetlands. "Rep. John Breaux, D-La., [fisheries and wildlife conservation] subcommittee chairman, said wetlands provide a place for fish and wildlife to live and help control floods and pollution."

The fee proposal was also endorsed by the Wildlife Legislative Fund of America, a coalition of sportsmen's and conservation groups. "The nation's wetlands are being destroyed at an alarming rate," the group said in a statement to the subcommittee. "If this trend of wetlands destruction continues, according to the U.S. Fish and Wildlife Service, virtually no waterfowl breeding habitat will be left by the year 2083."

The article also cites Robert A. Jantzen, director of the Fish and Wildlife Service, who says studies show that wetlands are being lost at a rate approaching 500,000 acres per year. "It is also well established that the loss of wetlands is one of the most serious environmental problems facing the nation today, with far-reaching implications not only for fish and wildlife resources, but also for outdoor recreation, business, agriculture and flood control," according to Jantzen.

Concern for the loss of wetlands is echoed in an **April 18, 1985,** article by Bill Schultz: "America's wetlands, priceless nurseries and resting areas for the nation's wildlife, are being plowed under or paved over at the rate of 450,000 acres per year. . . . Wetlands, saltwater marshes, freshwater swamps and hardwood bottomlands along rivers, are vital parts of the natural food chain."

Growing public appreciation of wetlands is illustrated is an **April 29, 1985,** article datelined Minneapolis. According to the news report, Minnesotans were willing to pay premium prices for residential land next to marshlands so that they could watch the wildlife such as geese, muskrat, deer, red-winged blackbird, the mallard, and the chorus frog.

Conservation groups actively advocated for environmental causes, as evidenced in a **June 25, 1985,** news article datelined Washington that reports a coalition of environmental groups called for economic incentives "for manufacturers to cut pollution and the elimination of subsidies for energy and water development projects." Organizations included in the coalition included the National Audubon Society, the National Wildlife Federation, the Sierra Club, and the Izaak Walton League. According to the article, leaders of the groups told a news conference "that many of their goals can be achieved because the public is more aroused about the threats to the environment than it was in years past."

Wetlands Coverage in 1985-86

Summary Descriptive Statistics:

74 articles mentioned wetlands

829 total Conservation Frame terms averaging 11.20 occurrences per article

794 total Property-Owner Frame terms, averaging 10.73 occurrences per article

A **July 9, 1985,** article reported approval by the House Agriculture Committee of so-called swampbuster provisions, which applied tough penalties to farmers who drain wetlands to plant crops, as well as "sodbuster" provisions to penalize farmers who plow highly erodible land.

Associated Press reported on **July 12, 1985,** that conservationists "are cautiously celebrating a legislative week they call the most significant in for the cause of soil conservation since the 1930s Dust Bowl. . . . The flurry of conservation activity is expected to provide some protest, particularly among farmers philosophically opposed to any federal intervention in private land management."

A threatening oil spill was reported by AP on **Sept. 30, 1985.** More than 400,00 gallons of North Sea crude oil were released when the Panamanian tanker *Grand Eagle* ran aground on the Delaware River on the Pennsylvania border. "Federal officials said the oil could move south at a rate of between eight and 10 miles a day and could reach Delaware's environmentally sensitive wetlands within three days if efforts to contain the oil fail," reported the article, which was datelined Claymont, Del.

A Supreme Court decision in the Michigan wetlands dispute was announced on **Dec. 4, 1985,** in an article headlined, "Court Gives Federal Court Power to Regulate Wetlands." The article reported that the Supreme Court "gave the federal government broad power to regulate, and even protect, development of 'wetlands'—millions of acres of swamps, marshes and bogs. The justices ruled unanimously that the U.S. Army Corps of Engineers may require a Michigan developer to get a permit before adding dirt fill to land about a mile from Lake St. Clair." The decision reversed a 6th U.S. Circuit Court of Appeals ruling that not all wetlands adjacent to navigable bodies of waters and their tributaries are subject to Corps regulation under the Clean Water Act, which requires permits for filling "waters of the United States." Since 1975 the Corps has interpreted the law to apply to all freshwater wetlands adjacent to other water. Writing for the court, Justice Byron R. White described the Corps' interpretations as reasonable "and we therefore conclude that a definition of 'waters of the United States' encompasses all wetlands adjacent to other bodies of water over which the Corps have jurisdiction."

An article released **Dec. 18, 1985,** described the 1985 farm bill as "a massive piece of legislation extending and revising federal programs . . ." The bill was approved by the House in October 1985 and by the Senate the following month. "Historic new conservation programs are created, termed by supporters as the most significant anti-erosion steps in 50 years," the article reports. "The bill establishes 'sodbuster' and 'swampbuster' programs penalizing farmers who plow on new fragile lands or drain wetlands for planting. Farmers who plant on highly erodible land or wetlands would be denied farm program benefits like subsidies, crop insurance and federal loans."

Concerns for wetlands and the environment were referenced in a **Feb. 27, 1985,** Associated Press article: "Environmental problems, particularly the nation's water quality, are generally worsening, according to the National Wildlife Federation's Environmental Quality Index for 1986." The report said that "continuing loss of wetlands, estimated at 350,000 acres a year, has destroyed valuable waterfowl habitat."

Conflicts over proposed development were spotlighted in a **March 5, 1985,** article headlined, "Regional EPA Vetoes Draining Swamp for Mall." Plans for a proposed shopping mall were blocked when federal officials barred developers from draining and filling 32 acres in Attleboro, 30 miles south of Boston, to create the $40 million Newport Avenue Galleria, which would have become the largest mall in Massachusetts. Developer John Bersani called the decision "the culmination of an incredible abuse of the regulatory process" while the Massachusetts Audubon Society applauded the decision.

Associated Press reported on **April 8, 1986,** the renewal for another five years of a federal program "that helps 23 states and five U.S. territories manage their shorelines and coastal resources." The reauthorization of the Coastal Zone Management Act was signed into law by President Reagan—to the expressed surprise of some observers who noted Reagan's previous five budget requests to

Congress had recommended eliminating money for coastal management grants. Strong Congressional support was credited for the executive action.

Datelined Grand Island, Neb., an **April 13, 1986,** article is headlined, "People Flock to River to Watch Spectacle of Sandhill Cranes." The article describes the annual spring migration of sandhill cranes, "winging in by the thousands to dance in the cornfields and doze on the [Platte] River of Life" as they rest on their way from winter homes in Mexico, Texas, and New Mexico to nesting grounds in Siberia, Alaska, and Canada. Some 500,000 of the world's 560,000 sandhill cranes spend an average of 28 days here, resting for their final leg of the migration and foraging in the field's for corn left after the autumn harvest and in adjoining wetlands for insects, worms, and snails. Teacher Bessie Frith comments on the importance of the waterfowl: "I believe that if schools and society can instill in those children a love and appreciation for the river, then they will take on a stewardship for the wild creatures of the world. I believe that if we lose the cranes, mankind loses a sense of beauty and a sound that can never be replaced. We cannot diminish the plant and animal populations without diminishing ourselves."

Restoring the Everglades is the focus of a **May 4, 1986,** article that reports, "The dikes and levees that drained lands and controlled floods, the manure-dropping cattle herds and fertilizer-fed crops, and the canal-front homes and towering condominiums that followed over the next 70 years did more than enable South Florida to become a boom land. They slowly but surely disrupted the delicate, 4,000-year-old Everglades water system."

On **May 6, 1986,** Associated Press reported that environmental groups "proposed $80 billion in tax-law changes to more than offset what they say will be devastating effects on environmental and construction programs from the deficit-reduction law."

Continued development-related conflict is revealed in the headline of a **May 14, 1986,** news article: "EPA Vetoes Shopping Mall; Senators Say Wetlands Questions Remain." The veto by the Environmental Protection Agency of a proposed shopping mall in Attleboro, Mass., "was a win for the environmentalists, but it is far from a total victory in the fight to protect the nation's wetlands, two Senators say." Senators John H. Chafee, R-R.I., and Robert W. Kasten Jr., R-Wis., "said they were pleased with the outcome, but questioned whether the EPA had gone far enough in its ruling to protect wetlands."

The EPA vetoed an Army Corps of Engineers permit for the Pyramid Corp to build the comprehensive mall on the Sweedens Swamp, which officials said would be "too damaging to wildlife and their habitat to allow approval."

Developers said they would appeal the decision to federal courts, while Rep. Barney Frank, D-Mass., commented the area was "just a piece of land. You are basically talking squirrels and sparrows."

Associated Press reported on **May 27, 1986,** the Supreme Court agreed hear an appeal by a Virginia developer to decide whether a person charged with environment law violations by the government in a civil case is entitled to a jury trial. In the case before the court Edward Lunn Tull was charged with illegally filling in federally protected wetlands without a permit and was fined $325,00. The previous July the 4th U.S. Circuit Court of Appeals ruled he did not have a constitutional right to be tried by a jury rather than a federal judge; the appeals court had ruled that the right to a jury trial does not extend to violators of the federal Clean Water Act and the federal Rivers and Harbor Act.

The environmental threat of rising ocean levels was the focus of another article released on **May 27, 1986.** An EPA spokesperson said the world's oceans could rise 2 feet to 11 feet over the next 100 years, contaminating drinking water supplies with salt water and damaging coastlines. "The force behind the increasingly rapid rise in sea level rates is believed to be the so-called greenhouse effect . . ." The news article cited an EPA report entitled *Greenhouse Effect, Sea Level Rise and Salinity in the Delaware Estuary.*

The headline of a **June 25, 1986,** article announces, "USDA Announces Tough New Erosion Penalties." The report describes the interim rules known as the sodbuster provisions and the similar program to protect wetlands in the Food Security Act of 1985 (passed on Dec. 23, 1985) . "New get-tough rules denying federal crop subsidies and other benefits to farmers who ignore conservation goals by raising crops on highly erodible land were announced Wednesday by the Agriculture Department," according to the news story.

The new provisions "will deny federal crops subsidies and other benefits to those who don't climb aboard the conservation wagon," according to a **June 26, 1986,** article.

Wetlands Coverage in 1986-87

Summary Descriptive Statistics:

71 articles mentioned wetlands
822 total Conservation Frame terms, averaging 11.58 occurrences per article
570 total Property-Owner Frame terms, averaging 8.03 occurrences per article

News features released by Associated Press during the period include an **Aug. 3, 1986,** article about the environmental benefits of cattail marshes, which were being started in Pennsylvania, Alabama, Montana, and Colorado to neutralize pollution of mine drainage. "Because of these curative powers, the lowly cattail has become a favored flower of environmentalists and coal operators working to curb the toxic damage of acid drainage from mines," according to the report datelined Distant, Pa.

Another news feature, dated **Sept. 28, 1986,** describes the search in Cathrine Swamp by the director of the natural areas program with the Western Pennsylvania Conservancy to locate "Carex Wiegandii, or Wiegand's sedge, a grass-like plant thought to exist only in two places in the state and one of several hundred rare or threatened plants." Datelined Hazel Hurst, Pa., the article describes conservationists as "racing against the clock" in their efforts to determine the abundance of particular plants and to protect those that are endangered. According to the report, "Once they determine a species is threatened, they may try to lease the property, ask the property owner to protect the plant by establishing his own preserve, or try to buy the land outright. The discovery of a rare or endangered plant on land slated for development also may halt or alter the process, . . . because such plants often live in unusual habitats that cannot be duplicated elsewhere."

Ironically datelined Tranquility, Calif., an **Oct. 1, 1986,** article discusses the problem of selenium in irrigation water draining from Westlands Water District farms that led to the death and deformities among area bird populations. The problem had resulted in a closing in the Spring of 1985 of the Kesterson Reservoir, a 1,200-acre wildlife refuge; no solution was in sight for disposal of the tainted water.

An **Oct. 6, 1986,** article reported the announcement by the Environmental Protection Agency that it would set up a new Office of Wetlands Protection "to educate the public about the value of such land and to help protect it."

Lawrence J. Jensen, EPA assistant administrator, commented on the traditional image of wetlands as useless: "Far from being wastelands, they are among the most fertile and productive ecosystems on earth." The articles notes that wetlands, including 95 million acres of inland marshes and swamps, provide habitat to many of the nation's endangered plants and animals. Jensen said the new office would coordinate research on wetlands and work with federal and local agencies to protect and restore "the most valuable and vulnerable wetlands."

Environmental groups were "jubilant," according to a **Nov. 12, 1986,** article, over the election of members of the 100th Congress. National Audubon Society spokesperson Leslie Dach commented, "The election was good for the environment." Appointments to key legislative committees remained a key concern.

An Associated Press report on **Nov. 23, 1986,** focuses on an article on wetland conversion and farm programs in USDA's *Farmline* magazine. Agricultural economists Ralph Heimlich and Linda Langner were cited in discussing the advantages of wetlands—including flood protection, improvement in water quality, and providing habitat to plants and animals—and how the new swampbuster provisions make farm program policies more "consistent."

The purchase of an 11,502-acre tract on the southern tip of Matagorda Island by The Nature Conservancy is reported in a **Dec. 27, 1986,** article datelined Victoria, Texas. The barrier island between Corpus Christi and Galveston "is one of the nation's most important natural wetlands, providing wintering habitat for part of the last flock of endangered whooping cranes," according to William Blair, president of the Texas Chapter of the organization, quoted in the article.

On **April 28, 1987,** Associated Press reported the Supreme Court ruling on the *Tull vs. U.S.* case, 85-1259, that persons sued by the government for environmental violations are entitled to have a jury decide if they violated federal law. The court therefore granted to Virginia developer Edward Lunn Tull a jury trial for his alleged violations of the Clean Water Act and the Rivers and Harbors Act by filling in wetlands without a permit.

"Bitter" hearings in Washington were reported on **June 12, 1987,** related to a Reagan administration plan to open the coastal plain of the Arctic National Wildlife Refuge to oil rigs. Representatives of the National Audubon Society, the Sierra Club, and the National Wildlife Federation were quoted in opposition to the proposal. Jay Hair, president of the National Wildlife Federation, accused Interior Secretary Donald Hodel of using distortions and omissions to support his call for drilling in the refuge. Gaylord Nelson, counselor to the Wilderness Society, charged the Interior Secretary was exploitive and insensitive to conservation values, suggesting, "The money comes first and the integrity of the environment comes last."

The key goals of conservationists include the protection of habitat and education of the public about environmental threats, according to a **June 13, 1987,** article: "Protection of the land 'has to be the No. 1 priority in conservation,' [C. R.] Gutermuth said. This is particularly true of valuable, productive wetlands. Wetlands 'are constantly and continuously being encroached upon and destroyed by man's activities,' he said. Conservationists must work 'to conserve this habitat that is needed, to constantly and continuously acquire prime land which is needed to offset that which is being lost each year'."

Wetlands Coverage in 1987-88

Summary Descriptive Statistics:

81 articles mentioned wetlands
885 total Conservation Frame terms, averaging 10.93 occurrences per article
450 total Property-Owner Frame terms, averaging 5.56 occurrences per article

In an article released on **July 16, 1987,** Associate Press reported a National Wetlands Policy Forum had convened, "trying to end what its chairman called a crazy patchwork of rules unsuitable to developers, conservationists, and regulators." The article notes, "Environmentally fragile, the marshes,

tidal basins and other wetlands play an important part in groundwater quality, flood control and as plant and animal habitat, experts say."

The approval of final rules for new conservation procedures that farmers "must follow to qualify for federal price supports, loans and other benefits offered by the Agriculture Department" were reported on **Sept. 16, 1987.** Swampbuster rules will apply if naturally occurring wetlands are converted to cropland after Dec. 23, 1985, the date the farm bill was signed into law. According to the news report, "In general, to remain eligible for benefits, a farmer must discontinue production of annually tilled crops on newly converted wetlands."

The third "State of the Environment" report by the Conservation Foundation was reported by AP on **Oct. 1, 1987.** The environmental research organization said conflicts over development would become key environmental issues of the 1990s. Among other issues expected to claim increased attention in the 1990s, "the report singled out indoor air pollution and what it said was increasing recognition that agricultural practices and policies often work at cross purposes with environmental protection, such as conversion of wetlands to farming," the article said.

An **Oct. 23, 1987,** article, datelined Warwick, RI, reported on a weeklong conference organized by the Environmental Protection Agency, bringing together representatives of numerous environmental organizational including the National Audubon Society and Sierra Club. The groups' five broad-based recommendations included "Saving wetlands and other environmentally sensitive areas from development, since wetlands are critical habitats for many forms of wildlife."

News reports in 1987 also included items on the greenhouse effect. An **Oct. 28, 1987,** article quoted James Hansen, director of the Goddard Institute for Space Studies, saying "the greenhouse effect should rise above the level of natural variability by the 1990s." The headline of the article announces, "Climate Expert Says 'Greenhouse' Warming of Earth Could be Noticeable in 1990s."

An article datelined Chicago, released **Jan. 12, 1988,** carries the headline, "EPA Hits Three Real Estate Developers with Fines." Associated Press reported the Environmental Protection Agency "proposed fines of up to $125,000 against three real-estate developers, and said it would aggressively punish those who build illegally or protected wetlands."

Regional EPA administrator Valdas Adamkus was quoted as saying, "Let it be a clear signal to developers throughout the country. . . . The EPA will no longer tolerate the wanton destruction of such a valuable and endangered resource as wetlands." The developers fined included the Kirk Corp., for violations in Streamwood, Ill.; the Hoffman Group, for violations in Hoffman Estates, Ill.; and the Woodland Development Corp., for violations in Anoka County, Minn.

The article notes, "Protected wetlands can be marshes, swamps, bogs, fens, and similar areas between water and dry land. They are considered among the most environmentally beneficial parcels of

land because they help control floods and erosion, and provide recreation and natural water treatment as well as food and a habitat for fish and wildlife."

Enforcement of swampbuster conservation provisions became the focus of attention, according to a **Jan. 26, 1988,** article reporting Senate supporters of a program called for stepped-up action to implement the 2-year-old program designed to preserve the nation's wetlands. To date, according to testimony, only two farmers had been denied payments for violating provisions of the program. Agriculture Department officials testified they would improve enforcement of the program. A spokesperson for the National Farmers Organization suggested there should be *"some compensation paid for taking land out of production"* [italics added].

North Dakota state Rep. Charles Martens concurred, suggesting that farmers were in danger of being penalized for filling in "small depressions that merely trap moisture for brief periods and may drown out crops and cause equipment to get stuck."

The greenhouse effect received attention again **June 13, 1988,** when Associated Press reported scientist Michael Oppenheimer said weather changes could occur rapidly in the next 20 years. By the year 2020 the planet's average temperature could hit a 10,000-year high and the world's oceans could surge inland by 83 feet, the scientist said. According to the article, a report released by the World Meteorological Organization "paints a dismal picture for coastal areas: erosion of beaches, loss of wetlands, more frequent and more severe flooding, damage to port facilities."

Wetlands Coverage in 1988-89

Summary Descriptive Statistics:

144 articles mentioned wetlands
1,230 total Conservation Frame terms, averaging 8.54 occurrences per article
792 total Property-Owner Frame terms, averaging 5.50 occurrences per article

Reagan described his administration as "staunchly pro-environment" in a Washington ceremony reported in AP on **July 26, 1988.** A Sierra Club spokesperson, however, countered that the administration's record ranks as "the worst ever in history" and suggested Reagan's speech was an effort to boost Vice President George Bush's bid for the presidency because the environment has "clearly become a campaign issue."

A Washington article headlined "Agency Says Gas Emissions Threaten Coastal Wetlands," released **Aug. 16, 1988,** reported that the findings of an EPA study suggested the nation "could lose from 30 percent to 80 percent of its coastal wetlands by the end of the next century if emissions of greenhouse gases continue resulting in rising sea levels at present rates."

According to the article, many scientists say the earth is experiencing a warming of temperatures caused by heat trapped in atmospheric accumulation of gases. "Wetlands are vital ecosystems and wildlife areas that provide flood protection and pollutant filtering and contribute to recharge of groundwater supplies," the article reports. "One-half of seafood caught in the United States depend on wetlands for some part of their life cycle, according to the EPA." The agency said that federal and state officials should develop plans for limiting the loss of wetlands.

Presidential hopeful George Bush proclaimed himself a lifelong environmentalist in an article datelined Gibraltar, Mich., released **Aug. 31, 1988.** He called for protection of natural wetlands and measures to reduce acid rain. The candidate is quoted in stating, "I am an environmentalist, always have been, from my earliest days growing up and then as a congressman . . . and I always will be . . . that's not inconsistent with being a businessman nor is it with being a conservative."

Criticisms and challenges from environmentalists and opponents are reported in an article released the following day from Boston. Democratic candidate Michael Dukakis accused Bush of "an election year conversion" while a spokesperson for the Sierra Club said it was a "revelation" if Bush was an environmentalist. Former U. S. Sen. Paul Tsongas likened Bush's self-description as an environmentalist to "Bonnie and Clyde coming out for gun control."

An article released **Sept. 2, 1988,** carries the headline, "Bush, Dukakis Have Mixed Records on Environment." Bush and Dukakis were both "fighting hard to convince voters they are friends of the environment," the article reported. While Bush had backed a goal of "no net loss of wetlands" Dukakis had called for protection of existing wetlands and restoration of "part of the vast endowment of wetlands that America has lost."

A group of environmentalists called Clean Water Action criticized Bush in an article released **Oct. 17, 1988,** for having for eight years "aggressively pursued an agenda which responded to the special interests of polluters and resulted in massive destruction of wetlands throughout the country."

In an article released **Oct. 27, 1988,** the Wilderness Society denounced the degradation of national wildlife refuges and called for prompt action. A society spokesperson said the refuge system "is threatened by poisonous agricultural runoff containing heavy metals, toxic chemicals and pesticides; by wetlands draining and water diversion; by overcrowding and off-road vehicles; by oil drilling and other incompatible activities."

The environmental focus of the 1988 Presidential campaign was described in an AP article dated **Oct. 29, 1988.** "Bush has campaigned as an environmentalist, while Dukakis has campaigned against the environmental record of the Reagan-Bush administration," the article notes.

Environmentalists greeted Bush's election to President with hope that he would propose to Congress "half of what he's promised in the campaign," in the words of Wilderness Society spokesperson Gaylord Nelson, quoted in a **Nov. 14, 1988,** article. In the news report headlined, "Bush on Spot to Make Good on Pro-Environment Claims," Nelson (a former Senator from Wisconsin) said what Bush does about the environment could be "the most important legacy of his presidency." Other environmentalists said while Bush wasn't their first choice, after Reagan it "can't get any worse."

On **Nov. 15, 1988,** AP reported a "major environmental study" released by the National Wetlands Policy Forum "recommended that Congress set a national goal of reversing the centuries-old trend of destroying more wetlands than are created." According to the report from the panel, which was organized by the EPA, existing federal and state protective programs were "too cumbersome and the responsibilities too diffuse" to provide adequate protection of wetlands. The article noted that half of the original 200 million areas of wetlands in the lower 48 states have been lost to agricultural production and residential/commercial development and that only in recent decades was it recognized "that wetlands serve important environmental functions by storing flood water, supporting a third of the nation's endangered species, nursing and spawning 60 percent to 90 percent of commercial fish catches, reducing erosion, recharging groundwater, filtering sediment and controlling pollution."

"Environmentalists Give Bush Wish List, Say They Like His Attitude," announces the headline of an article released **Nov. 30, 1988.** Environmental leaders met with Bush and presented Bush with 700+ recommendations related to protecting the environment, according to the news report.

An AP article released **Dec. 4, 1988,** reports on the reflections of Lee Thomas as he ended four years as administrator of the Environmental Protection Agency. Thomas related the agency's mission to protection of health. "If you don't protect wetlands, you're eventually going to have major problems in water quality—eventually that translates into health issues," he explains. Of the accomplishments he is most proud, he mentions the "little-noticed establishment of a Wetlands Office in EPA and a program focusing the protection of estuaries, the wide mouths of rivers where the tide meets the fresh water."

On **Dec. 22, 1988,** AP reported Bush's choice to head EPA was William Reilly, president of the Conservation Foundation and of the U.S. affiliate of the World Wildlife Fund.

The EPA said it "will try to keep the nation from losing any more swamps, marshes and other wetlands," according to an AP release on **Jan. 19, 1989.** Wetlands restoration or creation should be implemented to offset losses that are unavoidable, officials said. The article notes: "Thought for generations to be nothing more than the breeding grounds of disease, wetlands today are recognized by conservationists as an important cog in nature's machine, playing important roles in water purification and storage; as a habitat for wildlife, including many endangered species, and in the productivity of

marine life, including commercially important species."

The Bush fiscal 1990 budget proposal included more spending for environmental initiatives such as the Superfund program for toxic waste cleanup, clean coal technology, and clean water and wetlands programs, a **Feb. 9, 1989,** article reported.

Another article released on the same date, headlined, "Bush Calls for Action on Acid Rain, Other Environmental Issues," noted the Bush budget also called for "establishment of a 'national goal' to maintain the country's wetlands."

An article datelined Valdez, Alaska, on **April 1, 1989,** reported criminal charges had been filed against Exxon Valdez Capt. Joseph Hazelwood for operating his ship under the influence of alcohol. The related collision of the tanker on a reef resulted in "the nation's worst oil spill," releasing 240,000 barrels of oil into Prince William Sound, tainting 1,000 square miles of water and threatening wetlands and wildlife.

Amidst protects from environmentalists, the Interim Department announced it was renewing long-term water leases to farmers in central California, according to a news article released **April 12, 1989.** The decision "further corrodes the environmental credentials of the Bush campaign," Rep. George Miller, D-Calif., responded. The article notes that critics maintain that as the water "continued to be diverted for both agricultural and urban use, streams will dry up and seasonal wetlands, which support migratory waterfowl, will disappear."

An article headlined, "Boston EPA Official Chosen for White House Advisory Post," released **June 7, 1989,** reports President Bush's announcement he would nominate Michael Deland as chairman of the prestigious Council on Environmental Quality. Environmental groups applauded the selection, but suggested it was "too early" to tell whether the council would regain the influence it enjoyed in the 1970s under President Carter.

A sobering two-part article filed from New Orleans on **June 26** and **27, 1989,** carries the headlines, "A Land of Sinking Sand, Encroaching Salt Water" and "Searching for Ways to Turn the Tide." The articles warn that from the west to the east coasts, "what's left of the nation's wetlands and barrier islands is disappearing. Nowhere is it going faster than in Louisiana, where 30 to 50 square miles of marshy coastline wash away every year."

According to the articles by Austin Wilson, the Alaskan wetlands damaged by the recent devastating worst oil spill remain and eventually would renew themselves, while the Louisiana marshes "are gone, quickly, without drama, without nightly newscasts, without crowds of volunteers." Robert E. Stewart Jr., director of the National Wetlands Research Center, an arm of the U.S. Fish and Wildlife Service, noted the United States has lost 54 percent of its wetlands since settlement. Four decades ago, flood control and navigation were emphasized above environmental impact, and "we

didn't have the ability to forecast the effects," Stewart said.

The article suggests, "A strong young nation tamed its biggest river system with dams and levees, first making it a reliable transportation artery, then keeping it from overflowing. Nobody pondered how the marshes would live without replenishment from silt-laden fresh water."

Stewart sums up the complexity of the issues: "I've been working on this for 10 years, and I'm as upset as anyone. *It is the largest natural resource issue I've ever dealt with, the most complex in terms of the causes of the loss, the number of agencies involved, the series of conflicts, the private sector"* [italics added].

Another spokesperson said the wetlands "can be saved, if there's a strong enough commitment soon enough."

Wetlands Coverage in 1989-90

Summary Descriptive Statistics:

168 articles mentioned wetlands

1,697 total Conservation Frame terms, averaging 10.10 occurrences per article

1,312 total Property-Owner Frame terms, averaging 7.81 occurrences per article

The "wetlands war, North Dakota's most controversial environmental issue," is described in an **Aug. 29, 1989,** article datelined Penn, N.D. as having *"pitted the landowners against the wildlife interests"* [italics added], but the ramifications move the issue closer to urban consumers by affecting the quality of wildlife habitat and water available for outdoor recreation." The article notes, of the state's original 5 million acres of wetlands, only 2 million remained. "Draining the bowl-like indentations dotting the prairie in eastern North Dakota has disrupted the area's hydrology and removed natural storage tanks, increasing the chances of flooding. . . . It also removed natural habitat for ducks and geese."

In 1987 the state legislature adopted a no-net-loss policy requiring replacement of each acre drained. A "breakthrough" in the conflict was seen in the ongoing negotiations of the U.S. Fish and Wildlife Service to pay landowners up to $40 an acre to raise ducks. Of the proposal, state game and fish commissioner Lloyd Jones called it significant that "[the] Wildlife [Service] is able to sit down at the table, not demanding that every wetland be preserved, and agriculture is saying, 'We don't want to drain and are willing to save some'."

An article dated **Sept. 22, 1989,** reported the findings of the second appraisal of the nation's soil and water resources ordered by Congress in the Resource Conservation Act of 1977. Like the first such appraisal completed in 1981 the second "found major problems confronting U. S. soil and water resources: erosion, salinization, range deterioration, pollution, destruction of wetlands and wildlife habitation and acid rain." The report projected that crop yields would be increased in the year 2030: corn at 144 bushels per acre compared to the estimated 112.4 bushels per acre of the 1989 harvest;

sorghum at 127 bushels per acre compared to 62.6 averaged in 1989; wheat at 70 bushels per acre compared to 32.9 averaged in 1989; and soybeans at 69 bushels per acre compared to 32 averaged in 1989. The need for continued agricultural research and extension programs to achieve the increases was noted.

The unique and famous Everglades National Park was the focus of a news report dated **Oct. 28, 1989,** in which National Park Service biologist John Ogden says the environmental damage may have reached a point of no return. At least he argues, "We have come to a now-or-never stage."

According to the article datelined Key Largo, Fla., "The litany of problems seems to grow longer with each new study. Human intervention in the form of urban development, farming, drainage, flood control, firefighting and the introduction of hardy exotic plants has cut the size of the Everglades in half from an estimated 2.5 million acres in 1900, erased 12 native species and stressed what remains."

The shrinking habitat would support only eight to 10 Florida panthers—not enough to allow the species to thrive, according to a new study. "Water policies favoring farmers and urban dwellers have forced wading birds to relocate their colonies and cut the population in the southern Everglades from 300,000 to 15,000."

The headline of a **Nov. 17, 1989,** article announces, "Federal Agencies Agree to New Wetlands Policy." William Reilly, administrator of the Environmental Protection Agency, said the agency and the U.S. Army Corps of Engineers agreed to reduce the loss of wetlands through unified policy rather than the "differences in policy definitions, reflected in different definitions, in different approaches" applied in the past.

On **Dec. 13, 1989,** AP reported President Bush signed the North American Wetlands Conservation Act, which would provide more than $70 million for the purchase and preservation of wetlands, and a bill to expand the Everglades National Park by 110,000 acres. He called the wetlands measure "an excellent first step in reaching our national goal of no net loss of wetlands."

The agreement between the Environmental Protection Agency and the Army Corps of Engineers announced by the EPA head in November 1989 "may be put on hold for 30 days," according to a news article dated **Dec. 14, 1989.** The memorandum of agreement, "which was scheduled to take effect Friday, has sparked an intense struggle within the administration," according to the article. The destiny of the agreement would be a critical test of Bush's commitment to wetlands protection, conservationists said.

An AP article released the following day reported the Environmental Protection Agency announced the agreement between the two agencies would be held up. The agreement had received harsh criticism from the Alaskan oil industry and congressional delegation, as well as the departments

of Energy and Transportation, while it had been supported by the Council on Environmental Quality and the National Oceanic and Atmospheric Administration.

The Conservation Reserve Program had succeeded in signing up farmers to take an additional 3.33 million acres of cropland from production, Agriculture Secretary Clayton Yeutter announced in an article dated **Dec. 19, 1989.**

"Administration Delays Wetlands Agreement," the headline of a **Jan. 12, 1990,** article announces. According to the report, the Bush administration for the second time "put off issuing an interagency agreement Friday aimed at more clearly establishing guidelines for protecting wetlands, prompting criticism from environmentalists. . . . Although Bush repeatedly has said he is committed to a goal of taking actions to halt the decline of wetlands, specifics on how to achieve that goal have yet to be developed."

According to an AP article dated **Jan. 25, 1990,** Bush endorsed bipartisan legislation to create a cabinet-level Department of the Environment. The move would give the EPA more influence in the government, said supporters.

The headline of a **Feb. 7, 1990,** AP article reads, "Environmentalists Say Bush Reneging on Agreement." The article reports environmentalists were charging the Bush administration "with softening a federal interagency agreement on wetlands protection and backing away from a commitment to protect the environmentally sensitive lands." The final approval of a revised memorandum of agreement was reached after three months of negotiation on final wording.

Supporters praised the revised policy for its "flexibility" while critics said it left too much to interpretation. Conservationists criticized the revised policy as casting doubt on Bush's "often-repeated commitment to halt the loss of wetlands."

The National Governors Association accused the Bush administration of "hamstringing the Environmental Protection Agency" in a report announced in a **Feb. 8, 1990,** news article. According to the article, environmentalists charged Bush with "retreating from a pledge to protect the nation's wetlands" by "softening a policy position aimed at assuring that developers who exploit wetlands compensate for any environmental loss." The final version allowed in some cases exploitation of wetlands without compensation for the environmental loss, it was reported.

An AP article dated **March 11, 1990,** reported the results of a survey—on Bush's environmental record—of conservation groups and business/industry organizations featured in the March 19, 1990, issue of *U.S. News & World Report.* Conservation groups gave him a *D* while business groups gave him a *C* overall and on wetlands policies. The conservation groups surveyed included the National Audubon Society, the National Wildlife Federation, The Nature Conservancy,

Sierra Club, and the Wilderness Society. The business and trade groups surveyed included the American Farm Bureau Federation, American Business Conference, and U.S. Chamber of Commerce.

A **March 19, 1990,** headline reports, "Renewed Emphasis on Wetlands Could Hamper Delta Development." The article datelined Little Rock, Ark., says that wetlands protection guidelines "are slowing development" along the lower Mississippi River "and could reverse the economic revival sought by Congress for this poverty-stricken region," according to some officials. Developers complained of the time needed to get a permit—"up to 90 days," and of increases in amount of land defined as wetlands.

The *conservation/property-owner conflict* comes into clear focus in an **April 29, 1990,** article carrying the headline, "Efforts to Save Everglades Threaten Agriculture." According to the new report, filed from Belle Glade, Fla., the "heightening drama" over efforts to save Florida's Everglades "has cast new villains, the farmers and dairymen who work the land around giant Lake Okeechobee."

"I don't think it's fair," commented one fourth-generation producer. "It's our land. We're interested in our home as much as anybody else. But I think we're an easy target."

Environmentalists quoted in the article said agriculture "causes too much pollution" in the Okeechobee, which supplies the Everglades, and farmers said they're "politically expedient scapegoats."

A news article headlined, "Senate Panel Amends Wetlands Law in the New Farm Bill," released **May 3, 1990,** reports the Senate Agriculture Committee adopted wetlands legislation that completes the panel's toughening of conservation programs in the 1990 farm bill. The provisions make "farm programs better not only for the environment, but for the farmer as well," commented committee chair Patrick Leavy, D-Vt. According to the article, the new wetlands policy would ease some burden on farmers; first-time violators who drain and plant wetlands would be fined and required to restore the wetlands or another piece of property rather than lose federal subsidies.

The Council on Environmental Quality released a "generally upbeat" report on the nation's environmental record since 1970, according to a **June 5, 1990,** news article datelined Washington. Improvements in areas such as air quality were noted, while "progress in dealing with pollution in major cities and the protection of wetlands and coastal waters has come slowly."

Wetlands Coverage in 1990-91

Summary Descriptive Statistics:

162 articles mentioned wetlands

1,406 total Conservation Frame terms, averaging 8.68 occurrences per article

2,120 total Property-Owner Frame terms, averaging 13.07 occurrences per article

An article dated **August 17, 1990,** datelined Bismarck, N.D., reveals discontentment among diverse stakeholders in the wetlands policy issues. As the Domestic Policy Council's Wetlands Task Force held public hearings around the country to discuss ways to meet Bush's "no net loss" goal, landowners and others reacted. Farmers "said they should be able to help decide which land should be protected," according to the article.

A spokesperson for the North Dakota Agriculture Coalition gave this observation: "The bitter hostility caused by the total disregard of the landowners' wishes and constitutional rights has resulted in *"a wetlands war in which wildlife has been caught in the crossfire, and nobody wins"* [italics added].

Environmentalists, also, expressed dissatisfaction. A spokesperson for the National Wildlife Federation said an estimated 600,000 acres of wetlands had been lost since Bush proposed the no net loss goal.

"Loss of Privately-Owned Wetlands Dropped in Mid-1980s," according to the headline of an article released **Oct. 4, 1990.** Announced is an Agriculture Department report that nationwide the loss of wetlands on private lands "slowed significantly during the mid-1980s."

On **Oct. 16, 1990,** AP reported approval by a House-Senate conference committee of a farm bill that Sen. Richard Lugar, R-Ind., called "an excellent marriage" of environmental and business concerns. "It gives the American farmer a great deal of flexibility and freedom to plant," he said.

The bill strengthened penalties again draining wetlands for crop production and established procedures "by which farmers could drain wetlands in the middle of their planting area if they create new wetlands on easements [that can be converted to wetlands] on their property," according to the news report.

The farm bill was approved by the Senate and sent to the president, reports an **Oct. 25, 1990,** article.

The headline of a **Nov. 14, 1990,** news article reports, "Clean Air Bill Signing Nears; Criticism Remains." Scheduled to sign the Clean Air Act of 1990 later in the week, Bush was the target of criticism from environmentalists for his lack of progress on "many other issues, from global warming to protecting wetlands."

According to the article the president had expressed irritation with environmentalists and their "absurd" grading system, and asked by reporters in Houston about their criticism he had snapped, "I

didn't rely heavily on them for support in getting elected . . . and I'm not going to be persuaded that I can get some brownie points by appealing to (them)." The hostile remarks exposed his true position, a Sierra Club spokesperson suggested.

A National Wildlife Federation officer listed several issues on which Bush had disappointed environmentalists: his "strong support for opening the Arctic National Wildlife Refuge in Alaska to oil exploration, a lack of progress in developing a formal policy to protect wetlands nearly two years after promising to do so and hints of wanting to reexamine the Endangered Species Act to more heavily take into account economic considerations—an issue spotlighted by the debate over the spotted owl in the Northwest."

The brewing of a "modern-day range war" is reported in an article datelined Cheyenne, Wyo., released on **Nov. 26, 1990.** Ranchers, miners, loggers, and local government officials were set to meet to discuss their concerns over "losing control over their own land and losing access to natural resources on public lands."

The Associated Press reported on **Nov. 28, 1990,** that Bush had signed a five-year, $170 billion farm bill, which he described as "a market oriented bill that lets farmers make more of their own production decisions based on the market . . . "

The bill "creates a wetlands reserve and bolsters an existing Conservation Reserve Program that pays farmers to plant trees on highly erodible cropland." Bush commented that the bill "will help farmers protect water quality and wildlife habitat, and its greater flexibility will boost crop rotation, in turn helping to control weeds and pests and erosion," according to the news article.

A news article on **Nov. 29, 1990,** reports President Bush signed a $2.5 billion bill authorizing new water projects related to flood control and port development. The bill "contains provisions for wetlands restoration and protection, especially in Louisiana, and fish and wildlife conservation in the Great Lakes," according to the report.

Officials in the Agriculture Department discuss the changes of new regulations governing the use of wetlands in an article dated **Dec. 10, 1990.** "Under the new law, alteration of a wetland may trigger swampbuster penalties for current and subsequent crop years, whereas under the old law planting of an annual crop on a converted wetland was the only trigger for penalties," according to Keith Bjerke, head of the Agricultural Stabilization and Conservation Service, which administers commodity programs.

On **Feb. 4, 1991,** AP reported the text of President Bush's budget message, in which wetlands are mentioned: "The budget includes increased funds for the expansion and improvement of America's treasury of parks, forests, wildlife refuges, and other public lands; for the implementation of the

Clean Air Act and other key environmental statutes, for the cleanup of pollution at various federal facilities and at Superfund sites; and for protection and enhancement of coastal areas and wetlands."

An article headlined, "Florida Pushes to Toughen Wetlands Protection Regulations" is datelined Fort Lauderdale, Fla., and discusses the complex challenges of artificial wetlands construction. "No mitigation can replace up to 4,000 years of soil formation," said botanist Ted Hendrickson in the **March 5, 1991,** news report. "They have to destroy these soils to build on them, and nothing man creates can bring them back." He was commenting on a luxury residential development under way, for which builders had received permits to drain and fill 1,652 acres in exchange for building 348 acres of wetlands and converting 265 acres of farmland into water habitat.

The report identifies Hendrickson as "one of a growing number of scientists and state officials who say that state laws that let developers destroy sensitive ecological areas as long as they promise to 'mitigate' the damage by building of preserving other wetlands have failed to protect Florida's fragile environmental habitats."

A study by the state's environmental regulation department indicated "fewer than one-fifth of the state's manmade wetlands function as well as the natural systems they replace. And a third of the time, developers don't follow through on promises to replace destroyed wetlands," the article notes.

Manmade wetlands can provide habitat for native flora and fauna though "the range and species that once lived in Florida marshes and streams probably won't return," according to environmentalists.

A Dade County planner said manmade wetlands can become stagnant and useless if neglected or improperly built. "It's an arrogant concept," said Jean Evoy. "It presupposes that you know what you're destroying and that you have some godlike ability to create something as good."

"God creates, man constructs, and man constructs poorly," said Chuck Schrepl, a Miami supervisor in the Army Corps of Engineers. "There isn't any way that man can construct an organic muck layer."

Discussion of the Clean Water Act was the focus of an **April 18, 1991,** article headlined, "President Says He'll Ask 'Market-Oriented' Changes to Clean Water Act." The act was coming up for reauthorization. According to the article, "The wetlands section of the Clean Water Act has drawn *criticism both from environmentalists,* who say it is too weak to protect vital areas, *and from land owners* [italics added], who contend it prevents useful development of property that shouldn't really be considered wetlands."

Landowners unhappy about wetlands definition are cited in a **May 6, 1991,** article datelined Cambridge, Md. Founder of the Fairness to Landowners Committee, Peggy Reigle said the federal wetlands regulations were unreasonable, "crazy," and "out of whack."

According to the article, "oil companies, timber companies, and developers also have been lobbying the White House and Congress, trying to scale back controls over what might be called dry

wetlands." Environmentalists said the solution is not in redefining "wetlands out of existence."

The current definition for wetlands includes the criteria of hydric soil, support of characteristic vegetation, and water must come within 18 inches of the surface at least seven days per year, the article notes. The "definition dispute" would probably involve increasing the number of days for water under the surface, according to the news report.

A **May 14, 1991,** article reports the Bush administration was considering a revision of the government's official definition of wetlands, a definition "that environmentalists change would eliminate protection for millions of acres of vulnerable wildlife habitat." A new document said the previous definition—which was contained in an inter-agency manual taking effect in March 1990—was "grossly exaggerated." The definition "upset landowners and developers who found they needed government permits to build on land they did not consider wet," according to the article.

The proposed new definition would require that land, to be classified a wetland, must be saturated to the surface for 14 consecutive days in a growing season. A conservation group spokesperson suggested a scientifically-based definition "is being thrown out and ignored for political reasons."

Wetlands Coverage in 1991-92

Summary Descriptive Statistics:

220 articles mentioned wetlands

1,554 total Conservation Frame terms, averaging 7.06 occurrences per article

1,910 total Property-Owner Frame terms, averaging 8.68 occurrences per article

An article dated **July 8, 1991,** reports that President Bush and a 22-member commission set up by Housing Secretary Jack Kemp recommended "relaxing wetlands and endangered species regulations." According to the article, the president and the commission agreed "with what many would-be homeowners have long believed: cut the red tape and buying a house will become easier and cheaper."

"EPA Proposes New Wetlands Rules," the headline of a **July 10, 1991,** article announces. The agency released its draft of "tighter rules for identifying protected wetlands, trying to calm controversy about what critics say is overzealous regulation of fields, farms and front yards." The changes "would mean some landowners would no longer need federal permits to develop their property." According to the article, the provisions had been held up for months in inter-agency discussions, and proposed changes, which "environmentalists say would gut wetlands protection," had been gaining support in Congress.

Officials from EPA and other federal agencies had been working for months on the new provisions that would revise the delineation manual released in January 1989. "Farm groups,

developers, oil companies and mining interests have been urging Congress to relax wetlands regulations, while environmentalists say tighter enforcement is needed to stop the conversion of ecologically valuable land."

A spokesperson for the National Wildlife Federation commented on the "internal debate between the Greens and the Browns in the administration," referring to the "Browns" as opposing most environmental regulation.

On **July 17, 1991,** AP reported the American Farm Bureau Federation asked President Bush "to halt environmental initiatives the group says threatens the property rights of private citizens," suggesting this amounts to "environmental overkill." According to the article, the "immediate target" of the federation is the "regulatory confusion" over wetlands protection. Bush was asked "to stop all federal environmental initiatives that undermine private property rights until your administration establishes some common sense solutions." The Fram Bureau was supporting a bill introduced in March by Reps. James Hayes, D-La., and Thomas Ridge, R-Pa.

The headline of an **Aug. 2, 1991,** article announces, "Administration Agrees on New Wetlands Criteria, Angering Environmentalists."

According to the article, the Bush administration "settled a long interval dispute over the rules defining a 'wetland,' reaching a compromise that would remove millions of acres from federal protection." The issue had been referred to Vice President Dan Quayle's Council on Competitiveness. While a memorandum from Quayle's staff described the new criteria as "strict and fair," a spokesperson for the National Wildlife Federation said the Bush administration was "bowing to pressure from special interest groups, like the oil and gas industry, real estate agents, and the farm bureau."

While the previous regulatory definition of wetlands required saturation within 18 inches of the surface for seven consecutive days in a growing season, "the agreement reached this week says a wetland must have standing water for 15 days or be saturated to the surface for 21 consecutive days."

An **Aug. 9, 1991,** headline reads, "Bush Sets New Policy: 'Not Every Puddle a Wetland'." The article reports, "Bush, who campaigned on a promise that he would allow 'no net loss of wetlands' throughout the nation, now is 'defining wetlands in a common sense way that preserves the nation's wetlands but makes good sense' [presidential press secretary Marlin] Fitzwater said."

Fitzwater is quoted in commenting that "pressure to serve other valid human needs often comes into conflict with conservation. A coordinated wetlands policy requires balancing all these interests."

A spokesperson for the National Wildlife Federation said the new policy represented a death sentence for millions of acres of the critical American wetlands.

Another article dated **Aug. 9, 1991,** headlined, "Bush Proposes New Wetlands Policy, Balancing Protection and Development," notes that regulations "intended to protect wetlands have infuriated farmers, developers, small landowners, oil and gas companies and others who found they might be prohibited from building on their land."

Dan Kleckner, president of the American Farm Bureau Federation, is quoted in the article commenting, "The administration's decision is welcome news. We have argued all along that lands classified as wetlands should be truly wet."

Agriculture Secretary Edward Madigan said the plan was "good news for America's farmers."

Bush said the plan "seeks to balance two important objectives—the protection, restoration and creation of wetlands—and the need for sustained economic growth and development."

A wetlands specialist with the National Wildlife Federation said the administration's reliance on mitigation banking—or requiring developers to create new wetlands to replace ones that are destroyed—was "wishful thinking intended to ease the guilty consciences of politicians."

According to a news report dated **Aug. 10, 1991,** President Bush's new wetlands policy "is being called a disaster by environmentalists, but praised by farm leaders and home builders as a common sense approach." Spokespersons for the American Farm Bureau Federation and the National Association of Homebuilders spoke positively of the new policy, while a spokesperson for the National Wildlife Federation criticized it.

According to an article released on **Sept. 12, 1991,** while details of Bush's new wetlands policy were being worked out Congress was considering proposals for even more sweeping provisions governing wetlands protection and development. "Once seen as worthless bogs, swamps and marches, *the nation's wetlands have turned into one of the hottest environmental issues"* [italics added].

The article notes that developers, farmers, builders, and oil companies had argued that federal regulations "keep them from making the best use of their property," while environmentalists counter that "the laws have not been tough enough to prevent a steady loss of wetlands throughout the country, with the recent pace of conversion estimated at 300,000 acres a year."

As a result of the new definition of wetlands, according to the news report, "it seems likely that millions of acres recently defined as wetlands will no longer be covered by the law, although experts on both sides of the debate say it will be several months before they know for sure."

President Bush's environmental record is the topic of an article datelined Grand Canyon Village, Ariz., released by AP on **Sept. 22, 1991.** Bush was visiting the Grand Canyon to announce a plan to reduce pollution. On the eve of his trip, the League of Conservation Voters gave him a "D" for environmental performance while the Wilderness Society gave him a "D+," with a spokesperson commenting that he had acted for the oil, timber, and mining industries. "Even within his administration there is a sentiment that Bush should avoid repetition of his 1988 campaign pledge to be the environmental president because it could open him to allegations of hypocrisy," the article says.

Actions for which he was criticized included the "decision to drop millions of acres from wetlands protection. It followed an internal battle that saw a more restrictive EPA recommendation rejected in favor of the looser definition developed by the Competitiveness Council, an interagency panel chaired by Vice President Dan Quayle and including Sununu and other officials."

An AP article released on **Oct. 8, 1991,** carries the headline, "Scientists Say Bush Proposal Could Drop Protection for Half of Wetlands." According to a panel of scientists quoted in the news report, up to half of the nation's wetlands might lose federal protection under the new policy proposed by President Bush. The new rules "would not even recognize the Great Dismal Swamp in Virginia or portions of the Florida Everglades as wetlands," said Joseph Larson, chair of the National Wetlands Technical Council. The council and 13 independent scientists urged a review by the National Academy of Sciences before the proposed wetlands policies were implemented.

A former president of the Society of Wetlands Scientists commented that the proposed manual "blatantly ignored and avoided any science" in defining wetlands.

Another article dated **Oct. 8, 1991,** reports the House approved legislation providing $46.4 million in fiscal 1992 for the new Wetlands Reserve Program, "which will pay farmers to put their wetlands under federal protection for at least 30 years, instead of draining it of farming on it."

On **Oct. 16, 1991,** AP reported the Senate approved the $52.5 billion agriculture spending bill, which included $46.4 million for the new Wetlands Reserve Program.

In an article dated **Oct. 22, 1991,** Vice President Dan Quayle defended his Council on Competitiveness, describing its critics as "extremists" who "would strangle the free market with red tape."

On **Oct. 29, 1991,** an article cited the consensus of environmentalists and government wildlife experts that many of the wetlands in which the nation's wild ducks are hatched could lose their federal protection. "The National Wildlife Federation predicts that 2 million areas of 'prairie potholes'—36 percent of the glacier-scraped depressions that dot the plains from Minnesota to Montana—could be opened to farming and development," according to the article. A spokesperson for the National Audubon Society called the new policy "a complete abandonment . . . of valid scientific principles."

Farmers had protested the provisions when prairie potholes were more likely to be defined as wetlands falling under regulatory control. "We see it essentially as a *taking of private property,"* [talics added] said a spokesperson for the American Farm Bureau Federation.

"Administration At Odds Over Release of Wetlands Data," reports the headline of a **Nov. 16, 1991,** news article reporting that the Environmental Protection Agency was withholding, at the urging of the White House, "conclusions showing that vast stretches of the nation's federal wetlands would

lose protection under new guidelines proposed by the Bush administration." An agency official, speaking on condition of anonymity, said staff members at EPA were "livid" about Write House pressure to suppress conclusions of 52 teams' evaluations of 450 sites around the country "to assess the effects of the Bush proposal."

On **Nov. 21, 1991,** Associated Press reported it had obtained document summaries, "which the White House has banned from release," showing that government wetlands experts "have concluded that the Bush administration's proposed definition of the term is unworkable, unscientific, and would leave 'many obvious wetlands' unprotected."

According to the article, after the recent nationwide field test of the new definition, "members of agencies involved in regulating wetlands have universally chastised the policy in documents summarizing the test program."

The article reports that an assessment of six Southeast states suggested the definition "does little, if anything, to improve upon (the current policy) and actually deviates from accepted wetland science." The new definition was proposed by the Bush administration "as an attempt to ease concerns among business interests and some landowners that the federal government's interpretation of a wetland has been too broad," according to the article.

On **Nov. 22, 1991,** AP reported the Bush administration was rethinking the proposal to redefine the wetlands classification after governmental officials assessed the plan as "unworkable" and "unscientific."

A news article released the next day reported EPA head William Reilly said the Bush administration "will have to redo proposed new definitions of wetlands" which were "too restrictive." He told The Associated Press, "The field testing data makes clear we've got to go back to the drawing board."

EPA officials speaking "on condition of anonymity" said the Council on Competitiveness will make sure that the regulations are developed to be "as least burdensome to private property rights as possible."

According to the article, "The new guidelines were proposed, after much internal wrangling within the administration, in an effort to narrow the wetlands definition because business and private property owners complained that they were being restricted in what they would do with their property."

Reilly said that the field tests showed that some of the water-saturated areas of the Everglades did not meet the new provisions requirements for certain unique vegetation and soil content. "That tells you you've got a serious problem" [with the manual], he commented.

A call by a National Academy of Sciences panel for large-scale restoration of the nation's environmentally degraded lakes, rivers, and wetlands is reported in a **Dec. 11, 1991,** news article. The quality of life for present and future generations depends on "an active and ambitious restoration program," according to the study. The panel said that restoration would affect large tracts of land but

would not threaten agriculture or urban centers. "Even if we were to restore about 50 percent of the lost wetlands"—an estimated 57 million acres—"it would affect less than 3 percent of the land used for agriculture, forestry and urban settlement," the report said.

A **Feb. 26, 1992,** article reported a House panel was told that federally protected acres such as New Jersey's Pinelands and Florida's Everglades would be hurt by reduced federal regulation of wetlands. The House Interior Committee was assessing how the wetlands redefinition proposed by the Bush administration would affect public parks and other property. Carol M. Browner of the Florida Department of Environmental Protection told committee members, "This manual will go a long way toward destroying the Everglades. . . . The proposed revisions only serve to foster the 'wetter is better' mentality and the belief that areas which are not wet over extended periods are serving no useful environmental purpose." She said the primary criteria for classification should be vegetation and soil types rather than moisture, because the Everglades go through wet and dry rainfall periods.

In a **March 31, 1992,** article filed in Charlotte, N.C., varied stakeholders discussed the proposed new guidelines at a conference on National Wildlife and Natural Resources. While the president of the National Wildlife Federation said wetlands conservation was "under the greatest attack in history," U. S. Rep. Jimmy Hayes, D-La., said that property owners were equally concerned.

He warned that if landowners continued to be prevented from using their property, "there will be an environmental backlash like you've never seen."

An EPA spokesperson said the proposed new manual was not yet official policy. William Reilly, head of the EPA, "has made it clear in his view, and in the view of our agency, the 1991 (wetlands) delineation manual proposal is fundamentally flawed," said LuJuana Wilcher, an EPA assistant administrator.

"The 1991 manual is not the manual we want to work with," agreed Maj. Gen. Arthur Williams of the U.S. Corps of Engineers, which controls permits for use of wetlands under Section 404 of the Clean Water Act.

Wetlands Coverage in 1992-93

Summary Descriptive Statistics:

134 articles mentioned wetlands

1,106 total Conservation Frame terms, averaging 8.25 occurrences per article

1,086 total Property-Owner Frame terms, averaging 8.10 occurrences per article

Farmers and ranchers "are interested in restoring and permanently protecting 466,000 acres of wetlands," a **July 7, 1992,** article citing Agriculture Secretary Edward Madigan reports. Congress, however, had limited enrollment in the Wetlands Reserve Program to 50,000 acres for the year. Under the program, "USDA will pay landowners easement costs for acreage accepted into the program, plus

75 percent of the costs to work to restore the land to a healthy wetland condition." Enrolled acreage would be kept as wetlands permanently. Financing for the program was in question following a recent decision by the House to reduce spending in fiscal 1993.

An article dated **July 27, 1992,** said environmentalists were asking the Senate to restore funding for the programs, which "farmers themselves have expressed an unprecedented interest in," according to Ken Cook at the Center for Resource Economics, an environmental research organization. "Congress is turning a rare win-win opportunity on wetlands into a lose-lose disaster," said Cook.

A **July 28, 1992,** article reports the Senate voted to "restore money for the program to help farmers preserve and restore wetlands that had been turned into cropland." Senate Agriculture Committee chair Patrick Leahy, D-Vt., said the action was a victory for the environment and "gives the farmers the tools they need to protect fragile wetlands for generations to come."

As the 1992 Presidential campaign was entering its final weeks, AP described Bush in an **Oct. 21, 1992,** article as a candidate whose environmental record included the proposal to "redefine wetlands in a way that would eliminate protection of some 20 million to 40 million acres in the continental United States."

An article released the previous day said the business community was not complaining about the White House occupant—that Bush "came into office pledging to be an environmental president but has gradually given more weight to business concerns."

On **Oct. 30, 1992,** AP reported the Bush administration proposed to exempt Alaska "from the general rule under the Clean Water Act that developers restore or create new wetlands to compensate for any that have been damaged or lost." Environmentalists criticized the action while "Alaska's three members of Congress, all Republicans, welcomed the proposal."

Sen. Frank Murkowski described the plan as "a common sense solution that is vital to property owners." Less than one percent of the wetlands in the state are filled in; Alaska would be returned to the general rules applying to others states once one percent of its wetlands were developed.

The headline of a **Nov. 6, 1992,** article suggests, "There's Plenty for Bush to Do Before He Leaves Office." According to the news report, "Lame duck or no, President Bush still has a deskful of unfinished business, from approving a new definition of wetlands to deciding whether to let British Airways buy a major chunk of USAir." A senior White House official quoted in the article said there was a reasonable chance the final wetlands rule would be released in December after delays of more than a year.

Two weeks later, Associated Press reported the Bush administration had asked the National Academy of Sciences "to review the controversial wetlands rules and issue a report next year." In a

Nov. 21, 1992, article, Michael Deland, chairman of the White House Council on Environmental Quality, said the administration had hoped to reach a decision on the rule change, but that had "proved impossible."

On **March 28, 1993,** AP reported the federal government "may be paying millions of dollars to farmers who falsely claim they weren't farming wetlands." According to an auditor's report on the Office of the Inspector General, six of 19 farmers audited collected $1.2 million in benefits from 1987 to 1990 that should have been denied. Farmers had provided incorrect information related to their compliance with wetland conservation provisions. The reports faulted the Soil Conservation Service and the Agricultural Stabilization and Conservation Service "for not sharing information that would have prevented such violations."

The Clinton administration proposed a $63 billion budget for the Agriculture Department, AP reported on **April 8, 1993.** The proposal was 5.8 percent lower than the current year's spending level, but included "spending authority to enroll 450,000 acres in the Wetlands Reserve Program, under which farmers are paid to keep wetlands out of cultivation."

Plans for a $179.4 million National Biological Survey were announced by the Clinton administration in an **April 26, 1993,** news article. Interior Secretary Bruce Babbitt said the program "will provide a map to help us avoid environmental and economic conflicts. What we're doing is strengthening the credibility of science."

Babbitt said the survey would be modeled after the U.S. Geological Survey which represents a partnership of the Interior Department, the National Academy of Sciences, and the Smithsonian Institution. The biological survey would provide "a coordinated biological science capability" and would involve the U.S. Fish and Wildlife Service, the National Park Service, and the Bureau of Land Management.

In an article released the following day, Babbitt said by finding a way to preserve habitat of species before they near extinction he hoped to help "avoid litigation resulting from disagreements among property owners, government agencies and environmentalists over the protection of natural resources."

The Environmental Protection Agency "has a good chance of becoming the government's 15th Cabinet department if a Clinton administration bill before Congress can stay free of entangling amendments," an AP article reported **May 4, 1993.** The bill "would create a Department of the Environment while at the same time disbanding the much-criticized White House Council on Environmental Quality." The Senate voted 79-15 for the proposal, according to another article released later on the same day. The bill would then go to the House, "where creation of a department to protect the nation's air and water faces a less-certain future."

A spending bill approved by a House subcommittee "reduces spending for the Wetlands Reserve Program," AP reported on **June 15, 1993.**

A follow-up article released **June 30, 1993,** notes that the bill "includes less funding than sought by the administration for two programs that pay farmers to take erodible land and wetlands out of production."

Wetlands Coverage in 1993-94

Summary Descriptive Statistics:

199 articles mentioned wetlands

1,850 total Conservation Frame terms, averaging 9.30 occurrences per article

1,835 total Property-Owner Frame terms, averaging 9.22 occurrences per article

Loss of wetlands was blamed by some for the widespread flooding of the Mississippi River in 1993. In a **July 15, 1993,** article, a spokesperson for the Sierra Club suggests, "Sadly, the states that are having the worst flooding have lost the most wetlands."

Wetlands act as "natural sponges to absorb some of the fury of the floodwaters," according to the AP article.

The impact of the flood on wildlife is emphasized in an article datelined Hannibal, MO, released on **July 20, 1993.** Wild animals and birds were "chased from their homes and deprived of food sources by runaway rivers." A wildlife management biologist at the Ted Shanks Wildlife Area suggested the flooding was a "natural disaster made worse by man" by construction of dams and levees and destruction of "90 percent of the wetlands in Iowa, Illinois and Missouri" to "construction of shopping malls, farms and housing development."

On **July 27, 1993,** AP reported the Senate passed a $71 billion Agriculture Department spending bill which "drastically cuts the administration's request for the new Wetlands Reserve Program, in which the government rents environmentally fragile land from farmers. The Senate approved $22.5 million to put 25,000 acres in the program. The administration had sought $370 million. Senators said rental payments to farmers have been excessive."

Some $5.8 billion in flood disaster relief was approved by the Senate, The Associated Press reported on **Aug. 4, 1993.** The relief provisions included $102 million "for emergency conservation programs, watershed repair, enrollment of some land in the Wetlands Reserve Program . . . "

Conservationists argued against rebuilding failed levees along the flooded Mississippi River in an **Aug. 11, 1993,** article. They only create a "source of false security," suggested Kevin Coyle, president of American Rivers. According to the article, "The conservation group urged the Clinton administration to replace the patchwork of levees along the upper Mississippi and its tributaries with natural flood-controlling alternatives like wetlands and flood plains that would temporarily absorb flood waters."

Wetlands policy should be simplified, Agriculture Secretary Mike Espy said in a speech in Stuttgart, Ark., according to an **Aug. 20, 1993,** article. A federal task force "will recommend simplified wetlands regulations for farmers, making it easier for them to know when they are obeying the law," he said.

The changes would be announced officially the following week, according to the article. "The wetlands policy has been particularly vexing for farmers, who complain they must deal with the Army Corps of Engineers, the Environmental Protection Agency, Soil Conservation Service and other agencies when deciding whether to plant, build on, or fill in land."

On **Aug. 23, 1993,** AP reported President Clinton will reimpose Alaska wetlands protections while exempting many farmers from the new regulations. Former wetlands that had been drained and converted to farm uses before 1985 would be exempted from regulation. According to the article, the Clinton administration was "tackling one of the thorniest environmental issues left from the Bush era."

Reactions to the plan were mixed. A spokesperson for the National Wildlife Federation criticized the plan's provision to allow mitigation banking or creation of new wetlands, which "environmentalists say cannot duplicate the value of natural wetlands."

A spokesperson for the National Wetlands Coalition, "a group of about 70 farming and other landowning organizations, said the plan appeared to have 'acknowledged some of our problems'."

Clinton "is trying to diffuse longstanding conflicts over preserving the nation's wetlands by offering new protections, but also *giving landowners some flexibility* [italics added] they have long sought," an **Aug. 24, 1993,** article said. The policy did not attempt to specify the definition of a wetland. "Clinton is leaving the task of crafting a better definition to the National Academy of Sciences." The recommendations of the National Academy of Sciences related to wetlands definition were expected in September 1994.

The new policy announced that day would negate a rule set up by the Bush administration that would have lifted federal protection from 1.7 million acres of wetlands in Alaska, but it retained another Bush approach to wetlands in mitigation banking, providing that a wetland can be created to replace one lost by development.

Sen. Max Baucus, D-Mont., of the Senate Environment and Public Works Committee, said the plan "addresses the legitimate concerns of both those who work our lands and those who care about them."

A lawsuit was filed in U.S. District Court by developers and the mining industry challenging the Clinton administration's "plans to stem the loss of wetlands by closing loopholes and making regulations easier to obey," AP reported in another article dated **Aug. 24, 1993.** Regulators must get congressional approval for policy changes, it was argued in the suit filed by the National Association of Homebuilders, the American Mining Congress, the American Road and Transportation Builders Association and the National Aggregates Association.

With the Midwest flood receding, the White House issued a memorandum to federal agencies "to consider expanding wetlands and the other flood-control alternatives to rebuilding all damaged river levees," a news article reported on **Aug. 25, 1993.** Of 497 built by the federal government, 203 had failed, along with 897 of the 1,079 private levees constructed to curtail the waters.

The House approved a $71 billion Agriculture Department spending bill and made minor changes that would be sent back to the Senate for consideration, AP reported on **Sept. 30, 1993.** Although falling short of what the Clinton administration sought, the bill added 75,000 million acres in 20 states to the Wetlands Reserve Program "to protect those environmentally sensitive lands."

Proposals for the National Biologic Survey received criticisms from landowners in an article dated **Oct. 6, 1993.** Although inspectors would need permission to go onto private property, "the proposed inventory has left some landowners fearful of the economic impact of a discovery feeling they'd be better off not knowing what dwells on their land." A private landowner organization representative said the survey could be used "to stop timber sales, curtail grazing permits, block mining permits and eliminate oil and gas leasing." The House was scheduled to consider funding for the $163 million survey.

The Agriculture Department's Soil Conservation Service "will become the lead federal agency in defining which agricultural lands are wetlands," according to an agreement among four federal agencies, AP reported on **Jan. 6, 1994.** The agreement implements one of the recommendations made in August by a Clinton administration task force on coordinating related policies of several federal agencies. Earlier, farmers had to deal with the Soil Conservation Service for wetlands decisions to comply with swampbuster provisions and with the Army Corps of Engineers or the Environmental Protection Agency to meet guidelines of the Clean Water Act.

The Agriculture Department budget for 1995 was approved at $60.3 billion, some 7 percent below the 1994 budget, AP reported on **Feb. 7, 1994.** According to the article, "some $78.6 million would be spent to bring 300,000 more acres of farmed or cultivated wetlands out of production by paying easements to farmers. The administration had sought to enroll some 450,000 acres in 1994. But Congress paid for only 75,000 acres."

Environmentalists commented positively on Clinton's fiscal 1995 proposal budget, AP reported on **Feb. 8, 1994.** The budget included more funding to protect wetlands, rivers, and lakes. Peter Berle, president of the National Audubon Society, described the budget as "refreshing." The budget called for "looking at the big picture" with broad ecosystem protection programs including $521 million to protect the ancient forests in the Northwest, the Everglades in Florida, and the oil-fouled coastline of Prince William Sound in Alaska. The proposal included nearly $1 billion—an increase of 41 percent—on wetlands programs. Funds for agricultural wetlands set-asides were raised from $67 million to $283 million.

An estimated 25,000 acres of Midwestern crop land will be returned to wetlands under the Emergency Wetlands Reserve Program, the Agriculture Department said in an article dated **Feb. 10, 1994.** A spokesperson for the Soil Conservation Service said the $15 million allocation would buy easements from landowners who agree to restore farmed, converted, or protected wetlands in eight states. "We'll be enhancing the environment, increasing the water-holding capacity of flood plains, and giving Midwestern landowners an opportunity to recoup some of their losses from the disastrous floods," said the agency chief. The wetlands program is a voluntary program allowing landowners in the flooded Midwest the opportunity to restore wetlands on their property through permanent easements.

The pollution of the nation's water systems including wetlands was assessed in a report to the Environmental Protection Agency discussed in an **April 20, 1994,** news article. "Barely half of the nation's rivers, lakes and wetlands contain water suitable for all uses by humans and nature," EPA said after evaluating 1992 data that "measured how many bodies of water supported fish that were safe to eat, provided clean drinking water, were safe for swimming and recreation, supported aquatic wildlife and contained shellfish free of toxic substances."

Of the 642,900 miles of water making up 18 percent of the nation's water systems evaluated, only 56 percent were able to support all uses. Some 28 percent were found to be fair or poor in water quality, and 6 percent were rated as threatened. The federal agency said silt from agricultural runoff was a major problem, as was fertilizer nutrients such as phosphorous.

Wetlands in the United States continued "to be lost at a rate of 290,000 acres a year from the mid-1970s to the mid-1980s, mostly for agriculture, residential development, highways and mining. . . . Sediment was the biggest problem faced by wetlands, with agriculture and development the two biggest sources," according to the article.

A revised $67.9 billion Agriculture Department spending bill for the 1995 budget year was approved by the House, AP reported on **June 17, 1994.** "The bill gives $93.2 million for the Wetlands Reserve Program, which pays landowners for easements to protect environmentally sensitive wetlands. The money will allow the addition of 100,000 acres. The dollar amount is higher than last year but

$147.7 million below the administration budget," the article reports.

A private property bill sponsored by Senate Republican Leader Bob Dole was criticized by Senate Agriculture Committee Chairman Patrick Leahy in a **June 17, 1994,** news article. The bill would limit government actions that could reduce the value of private property, which "could cost taxpayers $150 million and jeopardize popular farm programs" and "could spark an endless tide of lawsuits," Leahy said.

According to the article Leahy, in a letter to farm organizations across the country, said the Constitution "already provides protection for individual property owners." Dole attached the bill as an amendment to a safe-drinking-water bill passed by the Senate in May. Leahy argued the provisions could disrupt farm programs including disaster assistance, marketing orders, the Conservation Reserve Program, and commodity support payments.

Wetlands Coverage in 1994-95

Summary Descriptive Statistics:

169 articles mentioned wetlands

1,323 total Conservation Frame terms, averaging 7.83 occurrences per article

2,526 total Property-Owner Frame terms, averaging 14.94 occurrences per article

The Agriculture Department reported the loss of soil to erosion and wetlands to farming has slowed considerably in the past decade, according to a **July 13, 1994,** article. The most recent inventory of non-federal land "also shows suburban sprawl and other developments claiming some of the nation's best farmland," officials said. The National Resources Inventory showed erosion claimed 2.1 billion tons of soil in 1992, compared to 3.1 billion tons in 1982. The improvement was credited to improved conservation practices and taking highly erodible land out of production.

Senate amendments to the $68 billion 1995 spending bill for the Agriculture Department were passed and would face reconciliation with the House-passed version, AP reported on **July 20, 1994.** Among other provisions the bill "removed the 100,000-acre cap on the amount of new wetlands put in the Wetlands Reserve Program, which pays farmers to restore those vulnerable lands."

A compromise spending bill cleared the House by a 287-107 vote, according to a news article dated **September 23, 1994.** The measure awaiting final action in the Senate gave the Wetlands Reserve Program $93 million, "nearly 40 percent more than this year."

Conservation groups were concerned over the legislative prospects of the Republican-dominated 104th Congress, said a **Jan. 8, 1995,** news report. Organizations such as National Audubon Society, the Sierra Club, and the Wilderness Society were "expecting a battle. They're worried about

Republicans arriving on Capitol Hill with their Contract With America, a pro-business tilt and a determination to rein in government regulators," AP reported.

The article suggested that much of the legislation left stranded by the 103rd Congress—"often by GOP filibusters"—was likely to emerge, "but with a more pro-business, anti-regulatory tone, lawmakers and lobbyists agree." For example, "a requirement to compensate land owners if a government action reduces property values and cumbersome cost vs. benefit and risk reviews could hamstring environmental regulations and their enforcement, critics fear."

A **Feb. 10, 1995** article reported on House testimony related to "a Republican bill to compensate landowners for property devalued by federal regulation." Opponents to the provisions, referred to as "takings" legislation, included the Clinton administration, which argued it would amount to "an entitlement program for the wealthy." The bill would require compensation to property owners when land is devalued by government action more than 10 percent.

The House Judiciary Committee approved legislation requiring the government "to compensate private property owners for financial losses as a result of federal health, safety or environmental regulations," the Associated Press reported on **Feb. 16, 1995.** Part of the Republican's Contract With America, the measure was expected to be voted on by the full House the following week. EPA head Carol Browner said the legislation would mean "that polluters would be paid by the government and taxpayers not to pollute." Supporters of the legislation countered that federal regulations such as wetlands designations can amount to unfair "taking" of private property by the government.

After two days of debate, the House by a vote of 286-141 passed legislation "requiring federal agencies to calculate the costs to business before issuing regulations and standards," according to a news report dated **Feb. 28, 1995.** "House Republicans argued that the legislation is a response to demands that Congress 'end the regulatory madness' that has seen the number of federal rules and regulations soar at a cost of billions of dollars to business and consumers," according to the article. "Examples of alleged over-regulation were cited during the debate, including the government's sometimes costly and controversial attempts over the years to protect endangered species, forests, and wetlands and clean up asbestos and toxic wastes."

The House was scheduled to begin debate on **March 2, 1995,** on the bill to compensate landowners for losses, according to an article released on that date. The Clinton administration was voicing strong opposition to the proposal because it "could hamstring the Environmental Protection Agency's ability to enforce a range of laws, including clean air and water standards." Supporters of the bill said it would help rectify "injustices to small landowners such as those who have property values reduced because part of their land is declared a wetland or is no longer commercially viable because of the discovery of an endangered species."

A leader in property rights legislation, Rep. Bill Tauzin, D-La., suggested, "It's time for property owners to fight back."

The House approval of the compensation legislation, by a vote of 277-148, was reported **March 3, 1995.** Democrats denounced "as a threat to environmental protection" the legislation "requiring federal agencies to compensate landowners for restrictions that protect wetlands and endangered species." The Private Property Protection Act then faced consideration by the Senate. According to the news report, "For the first time, a law would specifically declare the 'taking' of a property as a result of enforcement of environmental protection laws: the Endangered Species Act, wetlands protection laws and regulations involving federal water rights, something critical to western ranchers."

Supporters described the bill as "long-awaited relief for landowners."

The Agriculture Department declared a moratorium on designating new wetlands on farm property, a news article reported on **April 6, 1995.** The announcement cited a Clinton administration commitment to regulatory relief and was "aimed at farmers who complain that so-called 'prairie potholes,' or low-lying wet spots have been wrongfully called wetlands and off-limits to farming."

Agriculture Secretary Dan Glickman said new delineations would be discontinued "until Congress decided what to do about wetlands in the 1995 farm bill. The department also wants to review the results of a report on wetlands expected this summer from the independent National Academy of Sciences," according to the article.

In another article dated **April 6, 1995,** Associated Press reported a House Committee had approved legislation to revise the 1972 Clean Water Act and "ease water pollution controls on industry and local sewer agencies, while dramatically reducing the protection of wetlands." The bill would then go to the House floor and from there to the Senate. Opponents of the legislation included the Clinton administration and described the bill as "a frontal assault on protecting lakes and streams from pollution."

President Clinton pledged to veto any takings bills passed by Congress "that would force taxpayers to reimburse private land owners restricted by environmental regulations," a news article reported on **April 21, 1995.** Former Sen. Paul Tsongas, D-Mass., described the various takings bills as "budget busters." The legislation was co-sponsored by Senate Republican Leader Bob Dole and Sen. Phil Gramm, R-Texas.

The "long-awaited study" by the National Academy of Sciences was released to challenge "many scientific assumptions at the core of a proposal in Congress to overhaul the nation's wetlands protection law," AP reported **May 9, 1995.** The panel concluded that defining a wetland should be

made "more efficient, more uniform, more credible . . . and more accurate in a technical and scientific sense."

The study challenged the scientific credibility of relying for the definition on a single criterion "such as a specific number of days in which surface land is flooded," according to the news article. "Such a definition is at the heart of the bill before the House that would rewrite much of the Clean Water Act. It would require land to have 21 days of consecutive surface water during the growing season to be protected as a wetland." Federal agencies estimated the strict single criterion would reduce the nation's protected wetlands by 50 to 80 percent. "Wetlands, which are areas that lie between being dry land and permanently under water, play a crucial role in providing habitat for wildlife, filtering polluted water and absorbing flood waters," according to the article.

The Agriculture Department announced a third sign-up under the Wetlands Reserve Program for May 30 through June 30, a news article reported on **May 10, 1995.** The program, in which the government pays landowners for the agricultural value of wetlands that previously were drained and used for cropland, was funded at $92 million. About 118,000 acres were expected to be enrolled.

The previous year the program "proved far more popular than its budget could accommodate, as landowners sought to enroll 590,000 acres," according to the article.

In another article dated **May 10, 1995,** AP reported that "Lawmakers, facing growing complaints about property rights, are heading toward a clash with a group of eminent scientists over a major environmental issue facing the Congress: How to define a wetland." At stake, according to the article, "may be the future of America's dwindling wetlands—bogs, marshes, river bottomland and even some prairie grasses that provide habitats for wildlife, protect against flooding and serve as natural filters for pollution."

The House was scheduled to begin debate on legislation that would redefine wetlands using "narrower criteria, some of which are being challenged by the scientific community" in the 268-page report just released by the National Academy of Sciences. According to the news article, the study suggested that "determining a wetland is complex, and should take into account regional variations and is not necessarily related to whether land actually has long periods of surface saturation."

The House proposal, which would revise the 1972 Clean Water Act, and would require surface water for 21 consecutive days for land to be protected as a wetland. The bill was described by its sponsor, Rep. Bud Shuster, R-Pa., as a "common-sense approach." The Clinton administration argued it was "scientifically flawed."

The House opened debate "on revamping federal water pollution controls, considering some changes strongly favored by industry but criticized by some lawmakers as gutting one of the most successful environmental laws," reported another article dated **May 10, 1995.** According to the report, the legislation "would narrow the definition of wetlands, ease requirements on controlling industrial and urban runoff, and abandon national efforts to curb agricultural pollution of lakes and streams." Critics

of the bill suggested that "lobbyists representing chemical companies, the timber industry, and agriculture were influential in writing it," while supporters defended the flexibility that the bill would provide.

The bill's provision to "dramatically narrow federal control over wetlands" was one of its "most controversial," according to the article. *"The bill has pitted property rights advocates against environmentalists"* [italics added].

The debate to overhaul the 1972 Clean Water Act is "not only about water quality, but also big government and property rights," suggested a news article released **May 11, 1995.**

On **May 16, 1995,** AP reported the House "approved a sweeping overhaul of federal water pollution policy Tuesday, including easing wetlands protection and giving industry greater flexibility in complying with water quality standards." During five days of floor debate, "moderate Republicans and Democrats failed in their attempt to scale back the scope of the bill, especially as it applies to wetlands," the article reports.

The revisions passed by a vote of 240-185 over protests of the Clinton administration, which argued the bill "reversed two decades of improving the quality of the nation's lakes and rivers."

Rep. Billy Tauzin, D-La., described the outcome of the bill as a *"showdown on property rights* [italics added] because the bill would require the federal government to reimburse landowners for financial losses if land is declared a wetland." The bill then faced consideration in the Senate. President Clinton had mentioned vetoing the bill, the article reports.

"Of all the House bill's provisions, the section on wetlands attracted the most controversy and most heated debate," reported an article released **May 17, 1995.** Moderates in the Senate were "expected to balk at its rollback of wetlands protection and easing of pollution controls on industry," according to the article.

President Clinton pledged to veto the Republican overhaul of federal pollution policy, calling it the "Dirty Water Act," AP reported on **May 30, 1995.** "The bill would let polluted water back into our lives," he said.

According to the news report, "complaints from farmers and landowners over the impact of wetlands protection prompted 45 House Democrats to join 195 Republicans in passing the bill." The bill "would narrow the definition of a wetland, requiring that surface water be found on the land for 21 consecutive days before it can qualify for protection. The National Academy of Sciences has said that definition has no basis and would leave many legitimate wetlands unprotected," it was reported. "The bill would also require the government to compensate landowners if a wetland reduces property values."

APPENDIX F

CONSERVATION FRAME INDEX

Scores in the *Conservation Frame Index* (column 2) reflect the frequencies of terms in the *Conservation Frame*. Column 1 lists the four-digit Case Identification Number for AP news articles. Articles are rank ordered by score in the *Conservation Frame Index*. Some 109 articles in the study contained no *Conservation Frame* terms and therefore are not listed in this index. Descriptive statistics for scores in the index are as follows:

Mean	=	9.625
Mode	=	1.000
Median	=	7.000
n	=	1,356
Sum	=	13,052

1. #1494	65.00	41. #1149	28.00	81. #0616	23.00
2. #1502	56.00	42. #1489	28.00	82. #1071	23.00
3. #0904	53.00	43. #0192	27.00	83. #1072	23.00
4. #1118	46.00	44. #0193	27.00	84. #1073	23.00
5. #0605	45.00	45. #0194	27.00	85. #1477	23.00
6. #0197	43.00	46. #0245	27.00	86. #1478	23.00
7. #0606	42.00	47. #0246	27.00	87. #1531	23.00
8. #0196	41.00	48. #0350	27.00	88. #1568	23.00
9. #0419	41.00	49. #0351	27.00	89. #0018	22.00
10. #1482	40.00	50. #0609	27.00	90. #0200	22.00
11. #0146	38.00	51. #0610	27.00	91. #0201	22.00
12. #1023	38.00	52. #0824	27.00	92. #0227	22.00
13. #1369	38.00	53. #1027	27.00	93. #0240	22.00
14. #1370	38.00	54. #1028	27.00	94. #0300	22.00
15. #0974	37.00	55. #1029	27.00	95. #0421	22.00
16. #1499	37.00	56. #1416	27.00	96. #0457	22.00
17. #0373	36.00	57. #1493	27.00	97. #0459	22.00
18. #0407	36.00	58. #0191	26.00	98. #0466	22.00
19. #0408	35.00	59. #0847	26.00	99. #0631	22.00
20. #0668	34.00	60. #0849	26.00	100. #0818	22.00
21. #1104	34.00	61. #0975	26.00	101. #0819	22.00
22. #1190	34.00	62. #0976	26.00	102. #0848	22.00
23. #0683	32.00	63. #1079	26.00	103. #0852	22.00
24. #1229	32.00	64. #1080	26.00	104. #0853	22.00
25. #0098	31.00	65. #1423	26.00	105. #1002	22.00
26. #1272	31.00	66. #1510	26.00	106. #1288	22.00
27. #1456	31.00	67. #0180	25.00	107. #1362	22.00
28. #0424	30.00	68. #0672	25.00	108. #1506	22.00
29. #0020	29.00	69. #0673	25.00	109. #1507	22.00
30. #1105	29.00	70. #1380	25.00	110. #0119	21.00
31. #1236	29.00	71. #1381	25.00	111. #0241	21.00
32. #1238	29.00	72. #1504	25.00	112. #0382	21.00
33. #1245	29.00	73. #0064	24.00	113. #0383	21.00
34. #1396	29.00	74. #0309	24.00	114. #0897	21.00
35. #1454	29.00	75. #1074	24.00	115. #0920	21.00
36. #0850	28.00	76. #1448	24.00	116. #0921	21.00
37. #1042	28.00	77. #1450	24.00	117. #0923	21.00
38. #1146	28.00	78. #0061	23.00	118. #0924	21.00
39. #1147	28.00	79. #0299	23.00	119. #1168	21.00
40. #1148	28.00	80. #0613	23.00	120. #1226	21.00

121. #1227	21.00	171. #0882	19.00	221. #0006	16.00
122. #1246	21.00	172. #0916	19.00	222. #0015	16.00
123. #1315	21.00	173. #0926	19.00	223. #0072	16.00
124. #1325	21.00	174. #0928	19.00	224. #0073	16.00
125. #1326	21.00	175. #1106	19.00	225. #0074	16.00
126. #1361	21.00	176. #1280	19.00	226. #0075	16.00
127. #1447	21.00	177. #1343	19.00	227. #0139	16.00
128. #1521	21.00	178. #1372	19.00	228. #0140	16.00
129. #0048	20.00	179. #1419	19.00	229. #0141	16.00
130. #0077	20.00	180. #1420	19.00	230. #0314	16.00
131. #0078	20.00	181. #0068	18.00	231. #0324	16.00
132. #0158	20.00	182. #0069	18.00	232. #0325	16.00
133. #0159	20.00	183. #0070	18.00	233. #0326	16.00
134. #0160	20.00	184. #0374	18.00	234. #0327	16.00
135. #0161	20.00	185. #0376	18.00	235. #0490	16.00
136. #0162	20.00	186. #0544	18.00	236. #0492	16.00
137. #0163	20.00	187. #0856	18.00	237. #0495	16.00
138. #0164	20.00	188. #0925	18.00	238. #0536	16.00
139. #0220	20.00	189. #0927	18.00	239. #0686	16.00
140. #0221	20.00	190. #0990	18.00	240. #0739	16.00
141. #0222	20.00	191. #0991	18.00	241. #0740	16.00
142. #0420	20.00	192. #1036	18.00	242. #0967	16.00
143. #0522	20.00	193. #1102	18.00	243. #0989	16.00
144. #0523	20.00	194. #1367	18.00	244. #0992	16.00
145. #0524	20.00	195. #1368	18.00	245. #0993	16.00
146. #0525	20.00	196. #1438	18.00	246. #1046	16.00
147. #0526	20.00	197. #1553	18.00	247. #1166	16.00
148. #0541	20.00	198. #1587	18.00	248. #1167	16.00
149. #0787	20.00	199. #1599	18.00	249. #1254	16.00
150. #1119	20.00	200. #2049	18.00	250. #1255	16.00
151. #1124	20.00	201. #2050	18.00	251. #1312	16.00
152. #1176	20.00	202. #0154	17.00	252. #1435	16.00
153. #1283	20.00	203. #0377	17.00	253. #1445	16.00
154. #1299	20.00	204. #0381	17.00	254. #1446	16.00
155. #1300	20.00	205. #0499	17.00	255. #1555	16.00
156. #1304	20.00	206. #0501	17.00	256. #1578	16.00
157. #1501	20.00	207. #0734	17.00	257. #1580	16.00
158. #1505	20.00	208. #0788	17.00	258. #0063	15.00
159. #2048	20.00	209. #1103	17.00	259. #0079	15.00
160. #0114	19.00	210. #1202	17.00	260. #0080	15.00
161. #0214	19.00	211. #1386	17.00	261. #0081	15.00
162. #0354	19.00	212. #1388	17.00	262. #0082	15.00
163. #0375	19.00	213. #1389	17.00	263. #0176	15.00
164. #0426	19.00	214. #1421	17.00	264. #0182	15.00
165. #0439	19.00	215. #1422	17.00	265. #0183	15.00
166. #0566	19.00	216. #1479	17.00	266. #0184	15.00
167. #0821	19.00	217. #1480	17.00	267. #0207	15.00
168. #0822	19.00	218. #1481	17.00	268. #0291	15.00
169. #0859	19.00	219. #0003	16.00	269. #0378	15.00
170. #0881	19.00	220. #0004	16.00	270. #0762	15.00

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420. #0685 11.00

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422. #0726	11.00	472. #0147	10.00	522. #1130	10.00
423. #0761	11.00	473. #0215	10.00	523. #1156	10.00
424. #0769	11.00	474. #0217	10.00	524. #1157	10.00
425. #0804	11.00	475. #0218	10.00	525. #1181	10.00
426. #0813	11.00	476. #0260	10.00	526. #1216	10.00
427. #0887	11.00	477. #0261	10.00	527. #1217	10.00
428. #0896	11.00	478. #0268	10.00	528. #1237	10.00
429. #0908	11.00	479. #0288	10.00	529. #1242	10.00
430. #0909	11.00	480. #0318	10.00	530. #1289	10.00
431. #0910	11.00	481. #0319	10.00	531. #1290	10.00
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433. #0912	11.00	483. #0340	10.00	533. #1319	10.00
434. #0999	11.00	484. #0341	10.00	534. #1320	10.00
435. #1014	11.00	485. #0379	10.00	535. #1331	10.00
436. #1015	11.00	486. #0380	10.00	536. #1332	10.00
437. #1039	11.00	487. #0432	10.00	537. #1340	10.00
438. #1059	11.00	488. #0438	10.00	538. #1350	10.00
439. #1126	11.00	489. #0464	10.00	539. #1352	10.00
440. #1127	11.00	490. #0487	10.00	540. #1353	10.00
441. #1131	11.00	491. #0519	10.00	541. #1365	10.00
442. #1132	11.00	492. #0520	10.00	542. #1366	10.00
443. #1133	11.00	493. #0521	10.00	543. #1484	10.00
444. #1134	11.00	494. #0557	10.00	544. #1490	10.00
445. #1186	11.00	495. #0558	10.00	545. #1557	10.00
446. #1204	11.00	496. #0601	10.00	546. #1597	10.00
447. #1251	11.00	497. #0611	10.00	547. #1600	10.00
448. #1252	11.00	498. #0612	10.00	548. #1612	10.00
449. #1264	11.00	499. #0617	10.00	549. #0195	9.00
450. #1310	11.00	500. #0618	10.00	550. #0216	9.00
451. #1313	11.00	501. #0619	10.00	551. #0244	9.00
452. #1314	11.00	502. #0645	10.00	552. #0312	9.00
453. #1338	11.00	503. #0700	10.00	553. #0316	9.00
454. #1341	11.00	504. #0752	10.00	554. #0320	9.00
455. #1400	11.00	505. #0765	10.00	555. #0321	9.00
456. #1414	11.00	506. #0877	10.00	556. #0385	9.00
457. #1415	11.00	507. #0878	10.00	557. #0386	9.00
458. #1465	11.00	508. #0879	10.00	558. #0402	9.00
459. #1466	11.00	509. #0934	10.00	559. #0511	9.00
460. #1472	11.00	510. #0935	10.00	560. #0527	9.00
461. #1474	11.00	511. #0945	10.00	561. #0538	9.00
462. #1547	11.00	512. #0946	10.00	562. #0539	9.00
463. #1561	11.00	513. #0947	10.00	563. #0540	9.00
464. #1565	11.00	514. #0949	10.00	564. #0567	9.00
465. #1598	11.00	515. #0980	10.00	565. #0568	9.00
466. #1616	11.00	516. #0981	10.00	566. #0584	9.00
467. #1617	11.00	517. #1017	10.00	567. #0602	9.00
468. #2033	11.00	518. #1034	10.00	568. #0621	9.00
469. #0043	10.00	519. #1057	10.00	569. #0622	9.00
470. #0083	10.00	520. #1098	10.00	570. #0657	9.00

571. #0658	9.00	621. #0562	8.00	671. #1606	8.00
572. #0767	9.00	622. #0565	8.00	672. #1611	8.00
573. #0770	9.00	623. #0585	8.00	673. #2060	8.00
574. #0789	9.00	624. #0586	8.00	674. #2061	8.00
575. #0803	9.00	625. #0620	8.00	675. #0005	7.00
576. #0805	9.00	626. #0623	8.00	676. #0007	7.00
577. #0942	9.00	627. #0628	8.00	677. #0019	7.00
578. #0944	9.00	628. #0629	8.00	678. #0031	7.00
579. #0977	9.00	629. #0630	8.00	679. #0113	7.00
580. #0996	9.00	630. #0647	8.00	680. #0185	7.00
581. #0997	9.00	631. #0655	8.00	681. #0186	7.00
582. #1054	9.00	632. #0656	8.00	682. #0187	7.00
583. #1056	9.00	633. #0768	8.00	683. #0247	7.00
584. #1068	9.00	634. #0780	8.00	684. #0248	7.00
585. #1096	9.00	635. #0792	8.00	685. #0267	7.00
586. #1097	9.00	636. #0793	8.00	686. #0310	7.00
587. #1182	9.00	637. #0827	8.00	687. #0364	7.00
588. #1240	9.00	638. #0835	8.00	688. #0365	7.00
589. #1241	9.00	639. #0836	8.00	689. #0394	7.00
590. #1248	9.00	640. #0861	8.00	690. #0395	7.00
591. #1318	9.00	641. #1012	8.00	691. #0430	7.00
592. #1328	9.00	642. #1022	8.00	692. #0431	7.00
593. #1334	9.00	643. #1035	8.00	693. #0458	7.00
594. #1335	9.00	644. #1053	8.00	694. #0488	7.00
595. #1348	9.00	645. #1093	8.00	695. #0542	7.00
596. #1436	9.00	646. #1094	8.00	696. #0582	7.00
597. #1485	9.00	647. #1095	8.00	697. #0583	7.00
598. #1487	9.00	648. #1151	8.00	698. #0614	7.00
599. #1513	9.00	649. #1189	8.00	699. #0615	7.00
600. #1562	9.00	650. #1210	8.00	700. #0624	7.00
601. #1588	9.00	651. #1244	8.00	701. #0634	7.00
602. #1593	9.00	652. #1327	8.00	702. #0635	7.00
603. #1594	9.00	653. #1333	8.00	703. #0637	7.00
604. #1596	9.00	654. #1345	8.00	704. #0681	7.00
605. #0049	8.00	655. #1347	8.00	705. #0695	7.00
606. #0084	8.00	656. #1382	8.00	706. #0696	7.00
607. #0099	8.00	657. #1383	8.00	707. #0702	7.00
608. #0156	8.00	658. #1440	8.00	708. #0737	7.00
609. #0199	8.00	659. #1476	8.00	709. #0748	7.00
610. #0213	8.00	660. #1491	8.00	710. #0777	7.00
611. #0303	8.00	661. #1492	8.00	711. #0779	7.00
612. #0317	8.00	662. #1514	8.00	712. #0814	7.00
613. #0343	8.00	663. #1527	8.00	713. #0837	7.00
614. #0344	8.00	664. #1528	8.00	714. #0838	7.00
615. #0353	8.00	665. #1529	8.00	715. #0854	7.00
616. #0396	8.00	666. #1530	8.00	716. #0872	7.00
617. #0397	8.00	667. #1532	8.00	717. #0873	7.00
618. #0398	8.00	668. #1545	8.00	718. #0874	7.00
619. #0399	8.00	669. #1550	8.00	719. #0875	7.00
620. #0422	8.00	670. #1552	8.00	720. #0876	7.00

721. #0888	7.00	771. #0085	6.00	821. #0885	6.00
722. #0892	7.00	772. #0086	6.00	822. #0886	6.00
723. #0893	7.00	773. #0115	6.00	823. #0979	6.00
724. #0894	7.00	774. #0118	6.00	824. #1011	6.00
725. #0895	7.00	775. #0122	6.00	825. #1040	6.00
726. #0906	7.00	776. #0124	6.00	826. #1049	6.00
727. #0907	7.00	777. #0166	6.00	827. #1064	6.00
728. #0936	7.00	778. #0170	6.00	828. #1077	6.00
729. #0937	7.00	779. #0188	6.00	829. #1082	6.00
730. #0938	7.00	780. #0224	6.00	830. #1083	6.00
731. #0939	7.00	781. #0225	6.00	831. #1086	6.00
732. #0943	7.00	782. #0232	6.00	832. #1088	6.00
733. #0982	7.00	783. #0234	6.00	833. #1112	6.00
734. #0988	7.00	784. #0237	6.00	834. #1113	6.00
735. #0994	7.00	785. #0266	6.00	835. #1160	6.00
736. #0995	7.00	786. #0281	6.00	836. #1198	6.00
737. #1001	7.00	787. #0355	6.00	837. #1199	6.00
738. #1044	7.00	788. #0358	6.00	838. #1200	6.00
739. #1045	7.00	789. #0359	6.00	839. #1247	6.00
740. #1051	7.00	790. #0360	6.00	840. #1265	6.00
741. #1052	7.00	791. #0409	6.00	841. #1273	6.00
742. #1065	7.00	792. #0425	6.00	842. #1274	6.00
743. #1091	7.00	793. #0427	6.00	843. #1276	6.00
744. #1100	7.00	794. #0446	6.00	844. #1277	6.00
745. #1114	7.00	795. #0460	6.00	845. #1305	6.00
746. #1115	7.00	796. #0480	6.00	846. #1306	6.00
747. #1152	7.00	797. #0496	6.00	847. #1309	6.00
748. #1178	7.00	798. #0498	6.00	848. #1339	6.00
749. #1209	7.00	799. #0507	6.00	849. #1356	6.00
750. #1218	7.00	800. #0512	6.00	850. #1364	6.00
751. #1219	7.00	801. #0547	6.00	851. #1376	6.00
752. #1234	7.00	802. #0548	6.00	852. #1377	6.00
753. #1293	7.00	803. #0549	6.00	853. #1384	6.00
754. #1294	7.00	804. #0587	6.00	854. #1431	6.00
755. #1346	7.00	805. #0588	6.00	855. #1455	6.00
756. #1349	7.00	806. #0625	6.00	856. #1503	6.00
757. #1393	7.00	807. #0679	6.00	857. #1526	6.00
758. #1398	7.00	808. #0722	6.00	858. #1539	6.00
759. #1402	7.00	809. #0723	6.00	859. #1551	6.00
760. #1432	7.00	810. #0724	6.00	860. #1558	6.00
761. #1524	7.00	811. #0778	6.00	861. #1559	6.00
762. #1544	7.00	812. #0781	6.00	862. #1563	6.00
763. #1546	7.00	813. #0782	6.00	863. #1564	6.00
764. #1605	7.00	814. #0802	6.00	864. #0009	5.00
765. #1610	7.00	815. #0839	6.00	865. #0012	5.00
766. #0010	6.00	816. #0840	6.00	866. #0026	5.00
767. #0011	6.00	817. #0841	6.00	867. #0030	5.00
768. #0047	6.00	818. #0860	6.00	868. #0038	5.00
769. #0058	6.00	819. #0883	6.00	869. #0050	5.00
770. #0059	6.00	820. #0884	6.00	870. #0076	5.00

871. #0105	5.00	921. #0952	5.00	971. #0094	4.00
872. #0106	5.00	922. #0978	5.00	972. #0120	4.00
873. #0112	5.00	923. #0985	5.00	973. #0152	4.00
874. #0121	5.00	924. #1004	5.00	974. #0178	4.00
875. #0129	5.00	925. #1005	5.00	975. #0179	4.00
876. #0130	5.00	926. #1006	5.00	976. #0181	4.00
877. #0174	5.00	927. #1009	5.00	977. #0226	4.00
878. #0206	5.00	928. #1026	5.00	978. #0228	4.00
879. #0313	5.00	929. #1037	5.00	979. #0259	4.00
880. #0315	5.00	930. #1081	5.00	980. #0331	4.00
881. #0352	5.00	931. #1087	5.00	981. #0333	4.00
882. #0356	5.00	932. #1110	5.00	982. #0336	4.00
883. #0357	5.00	933. #1111	5.00	983. #0345	4.00
884. #0361	5.00	934. #1164	5.00	984. #0346	4.00
885. #0362	5.00	935. #1177	5.00	985. #0347	4.00
886. #0363	5.00	936. #1214	5.00	986. #0348	4.00
887. #0387	5.00	937. #1221	5.00	987. #0349	4.00
888. #0412	5.00	938. #1222	5.00	988. #0384	4.00
889. #0440	5.00	939. #1230	5.00	989. #0410	4.00
890. #0441	5.00	940. #1231	5.00	990. #0452	4.00
891. #0445	5.00	941. #1232	5.00	991. #0453	4.00
892. #0469	5.00	942. #1233	5.00	992. #0455	4.00
893. #0472	5.00	943. #1256	5.00	993. #0456	4.00
894. #0474	5.00	944. #1258	5.00	994. #0478	4.00
895. #0475	5.00	945. #1307	5.00	995. #0504	4.00
896. #0506	5.00	946. #1363	5.00	996. #0687	4.00
897. #0508	5.00	947. #1394	5.00	997. #0689	4.00
898. #0509	5.00	948. #1395	5.00	998. #0690	4.00
899. #0626	5.00	949. #1460	5.00	999. #0691	4.00
900. #0650	5.00	950. #1469	5.00	1000. #0693	4.00
901. #0651	5.00	951. #1536	5.00	1001. #0694	4.00
902. #0652	5.00	952. #1537	5.00	1002. #0710	4.00
903. #0653	5.00	953. #1538	5.00	1003. #0712	4.00
904. #0703	5.00	954. #1542	5.00	1004. #0719	4.00
905. #0725	5.00	955. #1543	5.00	1005. #0742	4.00
906. #0729	5.00	956. #1560	5.00	1006. #0743	4.00
907. #0731	5.00	957. #1566	5.00	1007. #0744	4.00
908. #0732	5.00	958. #1582	5.00	1008. #0753	4.00
909. #0733	5.00	959. #1607	5.00	1009. #0755	4.00
910. #0738	5.00	960. #1609	5.00	1010. #0756	4.00
911. #0783	5.00	961. #1613	5.00	1011. #0759	4.00
912. #0784	5.00	962. #2043	5.00	1012. #0794	4.00
913. #0785	5.00	963. #2056	5.00	1013. #0795	4.00
914. #0830	5.00	964. #0045	4.00	1014. #0799	4.00
915. #0831	5.00	965. #0046	4.00	1015. #0832	4.00
916. #0890	5.00	966. #0065	4.00	1016. #0858	4.00
917. #0891	5.00	967. #0067	4.00	1017. #0899	4.00
918. #0948	5.00	968. #0091	4.00	1018. #0905	4.00
919. #0950	5.00	969. #0092	4.00	1019. #0968	4.00
920. #0951	5.00	970. #0093	4.00	1020. #1030	4.00

1021. #1031	4.00	1071. #0251	3.00	1121. #1174	3.00
1022. #1032	4.00	1072. #0279	3.00	1122. #1175	3.00
1023. #1047	4.00	1073. #0280	3.00	1123. #1267	3.00
1024. #1048	4.00	1074. #0282	3.00	1124. #1268	3.00
1025. #1063	4.00	1075. #0286	3.00	1125. #1269	3.00
1026. #1069	4.00	1076. #0304	3.00	1126. #1275	3.00
1027. #1070	4.00	1077. #0305	3.00	1127. #1303	3.00
1028. #1078	4.00	1078. #0306	3.00	1128. #1329	3.00
1029. #1120	4.00	1079. #0307	3.00	1129. #1425	3.00
1030. #1123	4.00	1080. #0403	3.00	1130. #1430	3.00
1031. #1138	4.00	1081. #0405	3.00	1131. #1451	3.00
1032. #1139	4.00	1082. #0442	3.00	1132. #1452	3.00
1033. #1154	4.00	1083. #0481	3.00	1133. #1453	3.00
1034. #1180	4.00	1084. #0482	3.00	1134. #1508	3.00
1035. #1243	4.00	1085. #0515	3.00	1135. #1509	3.00
1036. #1270	4.00	1086. #0516	3.00	1136. #1522	3.00
1037. #1271	4.00	1087. #0517	3.00	1137. #1523	3.00
1038. #1284	4.00	1088. #0518	3.00	1138. #1573	3.00
1039. #1302	4.00	1089. #0545	3.00	1139. #1575	3.00
1040. #1375	4.00	1090. #0546	3.00	1140. #1576	3.00
1041. #1401	4.00	1091. #0599	3.00	1141. #1591	3.00
1042. #1429	4.00	1092. #0604	3.00	1142. #1601	3.00
1043. #1441	4.00	1093. #0660	3.00	1143. #1603	3.00
1044. #1442	4.00	1094. #0661	3.00	1144. #2040	3.00
1045. #1462	4.00	1095. #0698	3.00	1145. #2041	3.00
1046. #1488	4.00	1096. #0699	3.00	1146. #2042	3.00
1047. #1549	4.00	1097. #0718	3.00	1147. #2044	3.00
1048. #1572	4.00	1098. #0741	3.00	1148. #0001	2.00
1049. #1577	4.00	1099. #0745	3.00	1149. #0002	2.00
1050. #1604	4.00	1100.#0746	3.00	1150. #0066	2.00
1051. #0014	3.00	1101. #0828	3.00	1151. #0103	2.00
1052. #0032	3.00	1102. #0833	3.00	1152. #0123	2.00
1053. #0041	3.00	1103. #0900	3.00	1153. #0149	2.00
1054. #0042	3.00	1104. #0901	3.00	1154. #0171	2.00
1055. #0044	3.00	1105. #0902	3.00	1155.#0252	2.00
1056. #0062	3.00	1106. #0903	3.00	1156. #0256	2.00
1057. #0071	3.00	1107. #0915	3.00	1157. #0257	2.00
1058. #0101	3.00	1108. #0953	3.00	1158. #0258	2.00
1059. #0102	3.00	1109. #0960	3.00	1159. #0278	2.00
1060. #0108	3.00	1110. #0963	3.00	1160. #0328	2.00
1061. #0148	3.00	1111. #0966	3.00	1161. #0330	2.00
1062. #0150	3.00	1112. #1020	3.00	1162. #0388	2.00
1063. #0157	3.00	1113. #1055	3.00	1163. #0389	2.00
1064. #0167	3.00	1114. #1066	3.00	1164. #0390	2.00
1065. #0168	3.00	1115. #1089	3.00	1165. #0434	2.00
1066. #0169	3.00	1116. #1117	3.00	1166. #0470	2.00
1067. #0173	3.00	1117. #1142	3.00	1167. #0471	2.00
1068. #0209	3.00	1118. #1158	3.00	1168. #0503	2.00
1069. #0210	3.00	1119. #1159	3.00	1169. #0514	2.00
1070. #0235	3.00	1120. #1170	3.00	1170. #0551	2.00

1171. #0552	2.00	1221. #1301	2.00	1271. #0416	1.00
1172. #0553	2.00	1222. #1322	2.00	1272. #0417	1.00
1173. #0554	2.00	1223. #1323	2.00	1273. #0418	1.00
1174. #0555	2.00	1224. #1330	2.00	1274. #0435	1.00
1175. #0556	2.00	1225. #1433	2.00	1275. #0443	1.00
1176. #0578	2.00	1226. #1434	2.00	1276. #0449	1.00
1177. #0581	2.00	1227. #1468	2.00	1277. #0476	1.00
1178. #0608	2.00	1228. #1495	2.00	1278. #0513	1.00
1179. #0639	2.00	1229. #1534	2.00	1279. #0589	1.00
1180. #0641	2.00	1230. #1535	2.00	1280. #0594	1.00
1181. #0646	2.00	1231. #1540	2.00	1281. #0598	1.00
1182. #0648	2.00	1232. #1548	2.00	1282. #0632	1.00
1183. #0671	2.00	1233.#1570	2.00	1283. #0633	1.00
1184. #0688	2.00	1234. #1590	2.00	1284. #0636	1.00
1185. #0692	2.00	1235. #1602	2.00	1285. #0638	1.00
1186. #0709	2.00	1236. #2058	2.00	1286. #0642	1.00
1187. #0711	2.00	1237. #2059	2.00	1287. #0682	1.00
1188. #0720	2.00	1238. #0025	1.00	1288. #0697	1.00
1189. #0721	2.00	1239. #0034	1.00	1289. #0716	1.00
1190. #0728	2.00	1240. #0035	1.00	1290. #0717	1.00
1191. #0757	2.00	1241. #0036	1.00	1291. #0727	1.00
1192. #0758	2.00	1242. #0037	1.00	1292. #0730	1.00
1193. #0801	2.00	1243. #0057	1.00	1293. #0760	1.00
1194. #0834	2.00	1244. #0125	1.00	1294. #0771	1.00
1195. #0889	2.00	1245. #0126	1.00	1295. #0796	1.00
1196. #0918	2.00	1246. #0127	1.00	1296. #0800	1.00
1197. #0961	2.00	1247. #0133	1.00	1297. #0806	1.00
1198. #0962	2.00	1248. #0172	1.00	1298. #0807	1.00
1199. #1013	2.00	1249. #0198	1.00	1299. #0808	1.00
1200. #1043	2.00	1250. #0211	1.00	1300. #0809	1.00
1201. #1075	2.00	1251. #0239	1.00	1301. #0810	1.00
1202. #1084	2.00	1252. #0263	1.00	1302. #0811	1.00
1203. #1090	2.00	1253. #0264	1.00	1303. #0812	1.00
1204. #1109	2.00	1254. #0272	1.00	1304. #0862	1.00
1205. #1125	2.00	1255. #0273	1.00	1305. #0863	1.00
1206. #1128	2.00	1256. #0274	1.00	1306. #0864	1.00
1207. #1153	2.00	1257. #0292	1.00	1307. #0919	1.00
1208. #1155	2.00	1258. #0294	1.00	1308. #0922	1.00
1209. #1179	2.00	1259. #0295	1.00	1309. #0954	1.00
1210. #1183	2.00	1260. #0296	1.00	1310. #0955	1.00
1211. #1191	2.00	1261. #0297	1.00	1311. #0956	1.00
1212. #1197	2.00	1262. #0298	1.00	1312. #0964	1.00
1213. #1208	2.00	1263. #0335	1.00	1313. #0965	1.00
1214. #1215	2.00	1264. #0366	1.00	1314. #0969	1.00
1215. #1220	2.00	1265. #0367	1.00	1315. #0970	1.00
1216. #1266	2.00	1266. #0368	1.00	1316. #0971	1.00
1217. #1278	2.00	1267. #0369	1.00	1317. #0973	1.00
1218. #1287	2.00	1268. #0371	1.00	1318. #0987	1.00
1219. #1296	2.00	1269. #0401	1.00	1319. #1107	1.00
1220. #1298	2.00	1270. #0415	1.00	1320. #1116	1.00

1321. #1122	1.00
1322. #1140	1.00
1323. #1141	1.00
1324. #1184	1.00
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1333. #1281	1.00
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1340. #1467	1.00
1341. #1470	1.00
1342. #1486	1.00
1343. #1496	1.00
1344. #1511	1.00
1345. #1512	1.00
1346. #1533	1.00
1347. #1589	1.00
1348. #1614	1.00
1349. #1615	1.00
1350. #2034	1.00
1351. #2035	1.00
1352. #2036	1.00
1353. #2037	1.00
1354. #2053	1.00
1355. #2055	1.00
1356. #2062	1.00

APPENDIX G

PROPERTY-OWNER FRAME INDEX

Scores in the *Property-Owner Frame Index* (column 2) reflect the frequencies of terms in the *Property-Owner Frame.* Column 1 lists the four-digit Case Identification Number for AP news articles. Articles are ranked ordered by score in *Property-Owner Frame Index.* Some 85 of the 1,465 articles contained no *Property-Owner Frame* terms and therefore are not listed in this index. Descriptive statistics for scores in the index are as follows:

Mean	=	9.924
Mode	=	1.000
Median	=	7.000
n	=	1,370
Sum	=	13,596.000

1. #0072	53.00	41. #1536	33.00	81. #0768	27.00
2. #0073	53.00	42. #1549	33.00	82. #0900	27.00
3. #0074	53.00	43. #0091	32.00	83. #0901	27.00
4. #0075	53.00	44. #0092	32.00	84. #0948	27.00
5. #0068	48.00	45. #0894	32.00	85. #1042	27.00
6. #0069	48.00	46. #0895	32.00	86. #1074	27.00
7. #0070	47.00	47. #0994	32.00	87. #1398	27.00
8. #0079	47.00	48. #0995	32.00	88. #1472	27.00
9. #0080	47.00	49. #0322	31.00	89. #1490	27.00
10. #0671	46.00	50. #0323	31.00	90. #1563	27.00
11. #0077	45.00	51. #0382	31.00	91. #1564	27.00
12. #0078	45.00	52. #0780	31.00	92. #1590	27.00
13. #0081	44.00	53. #0782	31.00	93. #2058	27.00
14. #0082	44.00	54. #2055	31.00	94. #0086	26.00
15. #0008	43.00	55. #0001	30.00	95. #0168	26.00
16. #0084	41.00	56. #0432	30.00	96. #0169	26.00
17. #0021	40.00	57. #0874	30.00	97. #0300	26.00
18. #0063	40.00	58. #0992	30.00	98. #0496	26.00
19. #0892	40.00	59. #0993	30.00	99. #0725	26.00
20. #0893	40.00	60. #1548	30.00	100. #0902	26.00
21. #1251	40.00	61. #0002	29.00	101. #0903	26.00
22. #1252	40.00	62. #0299	29.00	102. #0951	26.00
23. #0022	37.00	63. #0383	29.00	103. #0952	26.00
24. #0083	37.00	64. #0433	29.00	104. #1071	26.00
25. #0811	36.00	65. #0848	29.00	105. #1072	26.00
26. #0812	36.00	66. #0873	29.00	106. #1073	26.00
27. #0047	35.00	67. #0087	28.00	107. #1491	26.00
28. #0093	35.00	68. #0182	28.00	108. #1492	26.00
29. #0806	35.00	69. #0183	28.00	109. #1527	26.00
30. #0807	35.00	70. #0184	28.00	110. #1528	26.00
31. #0808	35.00	71. #0272	28.00	111. #1529	26.00
32. #0809	35.00	72. #0778	28.00	112. #1582	26.00
33. #0810	35.00	73. #0781	28.00	113. #2040	26.00
34. #0890	35.00	74. #0844	28.00	114. #2041	26.00
35. #0891	35.00	75. #1535	28.00	115. #0088	25.00
36. #0990	33.00	76. #0273	27.00	116. #0274	25.00
37. #0991	33.00	77. #0595	27.00	117. #0686	25.00
38. #0996	33.00	78. #0596	27.00	118. #0813	25.00
39. #0997	33.00	79. #0662	27.00	119. #0969	25.00
40. #1533	33.00	80. #0767	27.00	120. #1254	25.00

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132. #0262	23.00	182. #1510	20.00	232. #0326	17.00
133. #0663	23.00	183. #2056	20.00	233. #0327	17.00
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139. #0030	22.00	189. #0851	19.00	239. #0789	17.00
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146. #0971	22.00	196. #1148	19.00	246. #0964	17.00
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157. #0339	21.00	207. #0057	18.00	257. #0630	16.00
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167. #1477	21.00	217. #0661	18.00	267. #0968	16.00
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274. #1432	16.00	324. #0680	14.00	374. #1395	13.00
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459. #1389	11.00	509. #1309	10.00	559. #0828	9.00
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618. #0621	8.00	668. #0105	7.00	718. #1315	7.00
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620. #0688	8.00	670. #0145	7.00	720. #1396	7.00

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722. #1420	7.00	772. #0620	6.00	822. #0302	5.00
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727. #1454	7.00	777. #0638	6.00	827. #0469	5.00
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767. #0566	6.00	817. #0240	5.00	867. #1048	5.00
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770. #0615	6.00	820. #0277	5.00	870. #1067	5.00

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873. #1080	5.00	923. #0212	4.00	973. #1034	4.00
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875. #1091	5.00	925. #0225	4.00	975. #1065	4.00
876. #1104	5.00	926. #0241	4.00	976. #1082	4.00
877. #1118	5.00	927. #0252	4.00	977. #1087	4.00
878. #1124	5.00	928. #0253	4.00	978. #1088	4.00
879. #1129	5.00	929. #0259	4.00	979. #1102	4.00
880. #1136	5.00	930. #0278	4.00	980. #1103	4.00
881. #1137	5.00	931. #0280	4.00	981. #1114	4.00
882. #1151	5.00	932. #0384	4.00	982. #1115	4.00
883. #1155	5.00	933. #0385	4.00	983. #1117	4.00
884. #1272	5.00	934. #0386	4.00	984. #1130	4.00
885. #1273	5.00	935. #0410	4.00	985. #1131	4.00
886. #1274	5.00	936. #0461	4.00	986. #1132	4.00
887. #1276	5.00	937. #0462	4.00	987. #1133	4.00
888. #1277	5.00	938. #0464	4.00	988. #1134	4.00
889. #1298	5.00	939. #0490	4.00	989. #1169	4.00
890. #1301	5.00	940. #0492	4.00	990. #1177	4.00
891. #1305	5.00	941. #0495	4.00	991. #1182	4.00
892. #1306	5.00	942. #0499	4.00	992. #1184	4.00
893. #1325	5.00	943. #0501	4.00	993. #1185	4.00
894. #1326	5.00	944. #0544	4.00	994. #1237	4.00
895. #1329	5.00	945. #0576	4.00	995. #1240	4.00
896. #1332	5.00	946. #0587	4.00	996. #1241	4.00
897. #1338	5.00	947. #0588	4.00	997. #1244	4.00
898. #1341	5.00	948. #0594	4.00	998. #1246	4.00
899. #1383	5.00	949. #0608	4.00	999. #1261	4.00
900. #1444	5.00	950. #0624	4.00	1000.#1262	4.00
901. #1485	5.00	951. #0648	4.00	1001. #1263	4.00
902. #1539	5.00	952. #0655	4.00	1002. #1297	4.00
903. #1540	5.00	953. #0656	4.00	1003. #1339	4.00
904. #1542	5.00	954. #0676	4.00	1004. #1375	4.00
905. #1543	5.00	955. #0727	4.00	1005. #1379	4.00
906. #1552	5.00	956. #0738	4.00	1006. #1397	4.00
907. #1553	5.00	957. #0757	4.00	1007. #1405	4.00
908. #1578	5.00	958. #0771	4.00	1008. #1406	4.00
909. #1593	5.00	959. #0861	4.00	1009. #1407	4.00
910. #1595	5.00	960. #0870	4.00	1010. #1408	4.00
911. #1606	5.00	961. #0871	4.00	1011. #1409	4.00
912. #1615	5.00	962. #0880	4.00	1012. #1410	4.00
913. #2036	5.00	963. #0881	4.00	1013. #1441	4.00
914. #0062	4.00	964. #0882	4.00	1014. #1442	4.00
915. #0071	4.00	965. #0980	4.00	1015. #1447	4.00
916. #0108	4.00	966. #0981	4.00	1016. #1462	4.00
917. #0130	4.00	967. #0988	4.00	1017. #1500	4.00
918. #0133	4.00	968. #0989	4.00	1018. #1505	4.00
919. #0173	4.00	969. #1001	4.00	1019. #1508	4.00
920. #0176	4.00	970. #1014	4.00	1020. #1531	4.00

1021. #1544	4.00	1071. #0856	3.00	1121. #1507	3.00
1022. #1545	4.00	1072. #0860	3.00	1122. #1530	3.00
1023. #1554	4.00	1073. #0945	3.00	1123. #1551	3.00
1024. #1604	4.00	1074. #0946	3.00	1124. #1560	3.00
1025. #1605	4.00	1075. #0973	3.00	1125. #1565	3.00
1026. #1607	4.00	1076. #0998	3.00	1126. #1576	3.00
1027. #1614	4.00	1077. #1013	3.00	1127. #1577	3.00
1028. #2042	4.00	1078. #1036	3.00	1128. #1588	3.00
1029. #2052	4.00	1079. #1038	3.00	1129. #0031	2.00
1030. #2053	4.00	1080. #1046	3.00	1130. #0103	2.00
1031. #0019	3.00	1081. #1050	3.00	1131. #0115	2.00
1032. #0045	3.00	1082. #1054	3.00	1132. #0120	2.00
1033. #0046	3.00	1083. #1057	3.00	1133. #0124	2.00
1034. #0118	3.00	1084. #1058	3.00	1134. #0167	2.00
1035. #0122	3.00	1085. #1066	3.00	1135. #0171	2.00
1036. #0156	3.00	1086. #1078	3.00	1136. #0178	2.00
1037. #0179	3.00	1087. #1090	3.00	1137. #0196	2.00
1038. #0209	3.00	1088. #1140	3.00	1138. #0197	2.00
1039. #0257	3.00	1089. #1141	3.00	1139. #0210	2.00
1040. #0258	3.00	1090. #1146	3.00	1140. #0214	2.00
1041. #0268	3.00	1091. #1152	3.00	1141. #0227	2.00
1042. #0288	3.00	1092. #1176	3.00	1142. #0239	2.00
1043. #0328	3.00	1093. #1183	3.00	1143. #0243	2.00
1044. #0330	3.00	1094. #1206	3.00	1144. #0256	2.00
1045. #0335	3.00	1095. #1208	3.00	1145. #0310	2.00
1046. #0373	3.00	1096. #1214	3.00	1146. #0313	2.00
1047. #0405	3.00	1097. #1228	3.00	1147. #0315	2.00
1048. #0406	3.00	1098. #1229	3.00	1148. #0348	2.00
1049. #0416	3.00	1099. #1245	3.00	1149. #0349	2.00
1050. #0457	3.00	1100. #1247	3.00	1150. #0350	2.00
1051. #0459	3.00	1101. #1279	3.00	1151. #0351	2.00
1052. #0460	3.00	1102. #1288	3.00	1152. #0374	2.00
1053. #0484	3.00	1103. #1291	3.00	1153. #0403	2.00
1054. #0506	3.00	1104. #1302	3.00	1154. #0409	2.00
1055. #0598	3.00	1105. #1307	3.00	1155. #0422	2.00
1056. #0601	3.00	1106. #1311	3.00	1156. #0424	2.00
1057. #0602	3.00	1107. #1327	3.00	1157. #0434	2.00
1058. #0642	3.00	1108. #1330	3.00	1158. #0446	2.00
1059. #0646	3.00	1109. #1340	3.00	1159. #0449	2.00
1060. #0695	3.00	1110. #1342	3.00	1160. #0456	2.00
1061. #0696	3.00	1111. #1345	3.00	1161. #0466	2.00
1062. #0711	3.00	1112. #1346	3.00	1162. #0478	2.00
1063. #0712	3.00	1113. #1355	3.00	1163. #0480	2.00
1064. #0722	3.00	1114. #1365	3.00	1164. #0486	2.00
1065. #0723	3.00	1115. #1366	3.00	1165. #0507	2.00
1066. #0737	3.00	1116. #1399	3.00	1166. #0542	2.00
1067. #0742	3.00	1117. #1438	3.00	1167. #0603	2.00
1068. #0758	3.00	1118. #1467	3.00	1168. #0605	2.00
1069. #0847	3.00	1119. #1501	3.00	1169. #0606	2.00
1070. #0849	3.00	1120. #1506	3.00	1170. #0659	2.00

1171. #0679	2.00	1221. #1343	2.00	1271. #0508	1.00
1172. #0690	2.00	1222. #1359	2.00	1272. #0512	1.00
1173. #0691	2.00	1223. #1360	2.00	1273. #0562	1.00
1174. #0692	2.00	1224. #1376	2.00	1274. #0565	1.00
1175. #0693	2.00	1225. #1377	2.00	1275. #0578	1.00
1176. #0694	2.00	1226. #1382	2.00	1276. #0581	1.00
1177. #0700	2.00	1227. #1411	2.00	1277. #0599	1.00
1178. #0705	2.00	1228. #1416	2.00	1278. #0626	1.00
1179. #0709	2.00	1229. #1417	2.00	1279. #0687	1.00
1180. #0741	2.00	1230. #1418	2.00	1280. #0689	1.00
1181. #0760	2.00	1231. #1428	2.00	1281. #0697	1.00
1182. #0783	2.00	1232. #1443	2.00	1282. #0701	1.00
1183. #0785	2.00	1233. #1445	2.00	1283. #0704	1.00
1184. #0814	2.00	1234. #1446	2.00	1284. #0728	1.00
1185. #0850	2.00	1235. #1489	2.00	1285. #0743	1.00
1186. #0916	2.00	1236. #1515	2.00	1286. #0752	1.00
1187. #0940	2.00	1237. #1525	2.00	1287. #0756	1.00
1188. #0941	2.00	1238. #1526	2.00	1288. #0802	1.00
1189. #1012	2.00	1239. #1550	2.00	1289. #0824	1.00
1190. #1043	2.00	1240. #1568	2.00	1290. #0830	1.00
1191. #1055	2.00	1241. #1575	2.00	1291. #0831	1.00
1192. #1056	2.00	1242. #1594	2.00	1292. #0832	1.00
1193. #1060	2.00	1243. #1600	2.00	1293. #0833	1.00
1194. #1061	2.00	1244. #1612	2.00	1294. #0834	1.00
1195. #1100	2.00	1245. #1617	2.00	1295. #0835	1.00
1196. #1116	2.00	1246. #0044	1.00	1296. #0836	1.00
1197. #1120	2.00	1247. #0098	1.00	1297. #0837	1.00
1198. #1138	2.00	1248. #0112	1.00	1298. #0838	1.00
1199. #1139	2.00	1249. #0113	1.00	1299. #0839	1.00
1200. #1153	2.00	1250. #0121	1.00	1300. #0858	1.00
1201. #1156	2.00	1251. #0146	1.00	1301. #0865	1.00
1202. #1166	2.00	1252. #0147	1.00	1302. #0888	1.00
1203. #1167	2.00	1253. #0155	1.00	1303. #0918	1.00
1204. #1175	2.00	1254. #0172	1.00	1304. #0920	1.00
1205. #1178	2.00	1255. #0188	1.00	1305. #0921	1.00
1206. #1190	2.00	1256. #0199	1.00	1306. #0923	1.00
1207. #1230	2.00	1257. #0213	1.00	1307. #0924	1.00
1208. #1231	2.00	1258. #0215	1.00	1308. #0977	1.00
1209. #1232	2.00	1259. #0237	1.00	1309. #0983	1.00
1210. #1233	2.00	1260. #0266	1.00	1310. #1022	1.00
1211. #1234	2.00	1261. #0267	1.00	1311. #1023	1.00
1212. #1269	2.00	1262. #0296	1.00	1312. #1092	1.00
1213. #1282	2.00	1263. #0297	1.00	1313. #1110	1.00
1214. #1285	2.00	1264. #0298	1.00	1314. #1111	1.00
1215. #1286	2.00	1265. #0347	1.00	1315. #1112	1.00
1216. #1318	2.00	1266. #0352	1.00	1316. #1113	1.00
1217. #1319	2.00	1267. #0353	1.00	1317. #1157	1.00
1218. #1320	2.00	1268. #0412	1.00	1318. #1186	1.00
1219. #1334	2.00	1269. #0430	1.00	1319. #1189	1.00
1220. #1335	2.00	1270. #0431	1.00	1320. #1197	1.00

1321. #1200 1.00
1322. #1205 1.00
1323. #1215 1.00
1324. #1216 1.00
1325. #1217 1.00
1326. #1220 1.00
1327. #1236 1.00
1328. #1238 1.00
1329. #1243 1.00
1330. #1248 1.00
1331. #1250 1.00
1332. #1253 1.00
1333. #1275 1.00
1334. #1281 1.00
1335. #1284 1.00
1336. #1287 1.00
1337. #1295 1.00
1338. #1299 1.00
1339. #1300 1.00
1340. #1313 1.00
1341. #1314 1.00
1342. #1331 1.00
1343. #1344 1.00
1344. #1352 1.00
1345. #1353 1.00
1346. #1356 1.00
1347. #1357 1.00
1348. #1358 1.00
1349. #1371 1.00
1350. #1393 1.00
1351. #1402 1.00
1352. #1436 1.00
1353. #1455 1.00
1354. #1457 1.00
1355. #1469 1.00
1356. #1474 1.00
1357. #1475 1.00
1358. #1496 1.00
1359. #1524 1.00
1360. #1532 1.00
1361. #1541 1.00
1362. #1546 1.00
1363. #1570 1.00
1364. #1602 1.00
1365. #1603 1.00
1366. #1609 1.00
1367. #1610 1.00
1368. #1611 1.00
1369. #1613 1.00
1370. #1616 1.00

APPENDIX H

CONSERVATION FRAME

PURITY INDEX

Scores in the *Conservation Frame Purity Index* (column 4) were computed by subtracting the scores or term frequencies in the *Property-Owner Frame* (column 3) from scores in the *Conservation Frame* (column 2). Column 1 lists four-digit Case Identification Number for AP news articles. Articles are rank ordered by score in *Conservation Frame Purity Index*. Only positive scores are listed.

1. #1494	65.00	11.00	54.00
2. #0904	53.00	5.00	48.00
3. #0605	45.00	2.00	43.00
4. #0197	43.00	2.00	41.00
5. #1118	46.00	5.00	41.00
6. #1502	57.00	16.00	41.00
7. #0606	42.00	2.00	40.00
8. #0196	41.00	2.00	39.00
9. #0146	38.00	1.00	37.00
10. #1023	38.00	1.00	37.00
11. #0419	41.00	6.00	35.00
12. #0373	36.00	3.00	33.00
13. #1190	34.00	2.00	32.00
14. #0974	37.00	6.00	31.00
15. #0098	31.00	1.00	30.00
16. #0407	37.00	7.00	30.00
17. #1499	37.00	7.00	30.00
18. #0408	36.00	7.00	29.00
19. #0668	34.00	5.00	29.00
20. #1104	34.00	5.00	29.00
21. #1229	32.00	3.00	29.00
22. #0424	30.00	2.00	28.00
23. #1236	29.00	1.00	28.00
24. #1238	29.00	1.00	28.00
25. #0824	27.00	1.00	26.00
26. #0850	28.00	2.00	26.00
27. #1245	29.00	3.00	26.00
28. #1272	31.00	5.00	26.00
29. #1489	28.00	2.00	26.00
30. #0350	27.00	2.00	25.00
31. #0351	27.00	2.00	25.00
32. #1146	28.00	3.00	25.00
33. #1416	27.00	2.00	25.00
34. #0309	24.00	.00	24.00
35. #0847	26.00	3.00	23.00
36. #0849	26.00	3.00	23.00
37. #1396	30.00	7.00	23.00
38. #1482	40.00	17.00	23.00
39. #0192	27.00	5.00	22.00
40. #0193	27.00	5.00	22.00
41. #0194	27.00	5.00	22.00
42. #1454	29.00	7.00	22.00
43. #0020	29.00	8.00	21.00
44. #0180	25.00	4.00	21.00
45. #1079	26.00	5.00	21.00
46. #1080	26.00	5.00	21.00
47. #1105	29.00	8.00	21.00
48. #1568	23.00	2.00	21.00
49. #0227	22.00	2.00	20.00
50. #0466	22.00	2.00	20.00
51. #0609	27.00	7.00	20.00
52. #0610	27.00	7.00	20.00
53. #0920	21.00	1.00	20.00
54. #0921	21.00	1.00	20.00
55. #0923	21.00	1.00	20.00
56. #0924	21.00	1.00	20.00
57. #1369	38.00	18.00	20.00
58. #1370	38.00	18.00	20.00
59. #1493	27.00	7.00	20.00
60. #0354	19.00	.00	19.00
61. #0457	22.00	3.00	19.00
62. #0459	22.00	3.00	19.00
63. #0683	32.00	13.00	19.00
64. #0975	26.00	7.00	19.00
65. #0976	26.00	7.00	19.00
66. #1106	19.00	.00	19.00
67. #1288	22.00	3.00	19.00
68. #1299	20.00	1.00	19.00
69. #1300	20.00	1.00	19.00
70. #1372	19.00	.00	19.00
71. #1506	22.00	3.00	19.00
72. #1507	22.00	3.00	19.00
73. #1531	23.00	4.00	19.00
74. #0613	24.00	6.00	18.00
75. #0616	24.00	6.00	18.00
76. #0191	26.00	9.00	17.00
77. #0214	19.00	2.00	17.00
78. #0240	22.00	5.00	17.00
79. #0241	21.00	4.00	17.00
80. #0421	22.00	5.00	17.00
81. #0916	19.00	2.00	17.00
82. #1176	20.00	3.00	17.00
83. #1246	21.00	4.00	17.00
84. #1343	19.00	2.00	17.00
85. #1447	21.00	4.00	17.00
86. #1448	24.00	7.00	17.00
87. #1450	24.00	7.00	17.00
88. #1501	20.00	3.00	17.00
89. #0119	21.00	5.00	16.00
90. #0374	18.00	2.00	16.00

91. #1325	21.00	5.00	16.00
92. #1326	21.00	5.00	16.00
93. #1505	20.00	4.00	16.00
94. #0018	22.00	7.00	15.00
95. #0245	27.00	12.00	15.00
96. #0246	27.00	12.00	15.00
97. #0420	20.00	5.00	15.00
98. #0856	18.00	3.00	15.00
99. #0881	19.00	4.00	15.00
100. #0882	19.00	4.00	15.00
101. #1036	18.00	3.00	15.00
102. #1124	20.00	5.00	15.00
103. #1362	23.00	8.00	15.00
104. #1373	15.00	.00	15.00
105. #1438	18.00	3.00	15.00
106. #1456	31.00	16.00	15.00
107. #0200	22.00	8.00	14.00
108. #0201	22.00	8.00	14.00
109. #0220	21.00	7.00	14.00
110. #0221	21.00	7.00	14.00
111. #0222	21.00	7.00	14.00
112. #0541	20.00	6.00	14.00
113. #0544	18.00	4.00	14.00
114. #0853	22.00	8.00	14.00
115. #1102	18.00	4.00	14.00
116. #1166	16.00	2.00	14.00
117. #1167	16.00	2.00	14.00
118. #1226	21.00	7.00	14.00
119. #1227	21.00	7.00	14.00
120. #1315	21.00	7.00	14.00
121. #1371	15.00	1.00	14.00
122. #1423	26.00	12.00	14.00
123. #1445	16.00	2.00	14.00
124. #1446	16.00	2.00	14.00
125. #0499	17.00	4.00	13.00
126. #0501	17.00	4.00	13.00
127. #0566	19.00	6.00	13.00
128. #1000	13.00	.00	13.00
129. #1046	16.00	3.00	13.00
130. #1103	17.00	4.00	13.00
131. #1259	13.00	.00	13.00
132. #1260	13.00	.00	13.00
133. #1280	19.00	6.00	13.00
134. #1304	20.00	7.00	13.00
135. #1344	14.00	1.00	13.00
136. #1361	21.00	8.00	13.00
137. #1374	13.00	.00	13.00
138. #1475	14.00	1.00	13.00
139. #1553	18.00	5.00	13.00
140. #1592	13.00	.00	13.00
141. #0158	20.00	8.00	12.00
142. #0159	20.00	8.00	12.00
143. #0160	20.00	8.00	12.00
144. #0161	20.00	8.00	12.00
145. #0162	20.00	8.00	12.00
146. #0163	20.00	8.00	12.00
147. #0164	20.00	8.00	12.00
148. #0426	19.00	7.00	12.00
149. #0490	16.00	4.00	12.00
150. #0492	16.00	4.00	12.00
151. #0495	16.00	4.00	12.00
152. #0734	17.00	5.00	12.00
153. #0855	12.00	.00	12.00
154. #0989	16.00	4.00	12.00
155. #0998	15.00	3.00	12.00
156. #1027	28.00	16.00	12.00
157. #1028	28.00	16.00	12.00
158. #1029	28.00	16.00	12.00
159. #1206	15.00	3.00	12.00
160. #1279	15.00	3.00	12.00
161. #1367	18.00	6.00	12.00
162. #1368	18.00	6.00	12.00
163. #1419	19.00	7.00	12.00
164. #1420	19.00	7.00	12.00
165. #1497	12.00	.00	12.00
166. #1515	14.00	2.00	12.00
167. #0114	19.00	8.00	11.00
168. #0176	15.00	4.00	11.00
169. #0243	13.00	2.00	11.00
170. #0896	11.00	.00	11.00
171. #0999	11.00	.00	11.00
172. #1039	11.00	.00	11.00
173. #1202	17.00	6.00	11.00
174. #1205	12.00	1.00	11.00
175. #1282	13.00	2.00	11.00
176. #1414	11.00	.00	11.00
177. #1415	11.00	.00	11.00
178. #1417	13.00	2.00	11.00
179. #1418	13.00	2.00	11.00
180. #1443	13.00	2.00	11.00
181. #1457	12.00	1.00	11.00
182. #1504	25.00	14.00	11.00
183. #1578	16.00	5.00	11.00
184. #1598	11.00	.00	11.00
185. #0155	11.00	1.00	10.00
186. #0406	13.00	3.00	10.00
187. #0611	10.00	.00	10.00
188. #0612	10.00	.00	10.00
189. #0659	12.00	2.00	10.00
190. #0704	11.00	1.00	10.00

191. #0859	19.00	9.00	10.00
192. #0880	14.00	4.00	10.00
193. #0926	19.00	9.00	10.00
194. #0928	19.00	9.00	10.00
195. #0940	12.00	2.00	10.00
196. #0941	12.00	2.00	10.00
197. #1016	15.00	5.00	10.00
198. #1060	12.00	2.00	10.00
199. #1061	12.00	2.00	10.00
200. #1119	20.00	10.00	10.00
201. #1186	11.00	1.00	10.00
202. #1228	13.00	3.00	10.00
203. #1242	10.00	.00	10.00
204. #1283	20.00	10.00	10.00
205. #1308	10.00	.00	10.00
206. #1313	11.00	1.00	10.00
207. #1314	11.00	1.00	10.00
208. #1350	10.00	.00	10.00
209. #1399	13.00	3.00	10.00
210. #1435	17.00	7.00	10.00
211. #1474	11.00	1.00	10.00
212. #1525	12.00	2.00	10.00
213. #1554	14.00	4.00	10.00
214. #1587	18.00	8.00	10.00
215. #1597	10.00	.00	10.00
216. #1616	11.00	1.00	10.00
217. #0064	24.00	15.00	9.00
218. #0147	10.00	1.00	9.00
219. #0215	10.00	1.00	9.00
220. #0216	9.00	.00	9.00
221. #0439	19.00	10.00	9.00
222. #0486	11.00	2.00	9.00
223. #0511	9.00	.00	9.00
224. #0576	13.00	4.00	9.00
225. #0752	10.00	1.00	9.00
226. #1021	13.00	4.00	9.00
227. #1058	12.00	3.00	9.00
228. #1129	14.00	5.00	9.00
229. #1147	28.00	19.00	9.00
230. #1148	28.00	19.00	9.00
231. #1149	28.00	19.00	9.00
232. #1157	10.00	1.00	9.00
233. #1169	13.00	4.00	9.00
234. #1216	10.00	1.00	9.00
235. #1217	10.00	1.00	9.00
236. #1311	12.00	3.00	9.00
237. #1312	16.00	7.00	9.00
238. #1331	10.00	1.00	9.00
239. #1342	12.00	3.00	9.00
240. #1352	10.00	1.00	9.00
241. #1353	10.00	1.00	9.00
242. #1397	13.00	4.00	9.00
243. #1471	15.00	6.00	9.00
244. #1479	17.00	8.00	9.00
245. #1480	17.00	8.00	9.00
246. #1481	17.00	8.00	9.00
247. #1580	16.00	7.00	9.00
248. #1595	14.00	5.00	9.00
249. #1596	9.00	.00	9.00
250. #1608	15.00	6.00	9.00
251. #1617	11.00	2.00	9.00
252. #2047	15.00	6.00	9.00
253. #0013	14.00	6.00	8.00
254. #0015	16.00	8.00	8.00
255. #0303	8.00	.00	8.00
256. #0700	10.00	2.00	8.00
257. #0927	18.00	10.00	8.00
258. #0977	9.00	1.00	8.00
259. #1156	10.00	2.00	8.00
260. #1248	9.00	1.00	8.00
261. #1319	10.00	2.00	8.00
262. #1320	10.00	2.00	8.00
263. #1333	8.00	.00	8.00
264. #1405	13.00	5.00	8.00
265. #1406	13.00	5.00	8.00
266. #1407	13.00	5.00	8.00
267. #1408	13.00	5.00	8.00
268. #1409	13.00	5.00	8.00
269. #1410	13.00	5.00	8.00
270. #1436	9.00	1.00	8.00
271. #1440	8.00	.00	8.00
272. #1458	15.00	7.00	8.00
273. #1500	12.00	4.00	8.00
274. #1555	16.00	8.00	8.00
275. #1565	11.00	3.00	8.00
276. #1600	10.00	2.00	8.00
277. #1612	10.00	2.00	8.00
278. #0061	23.00	16.00	7.00
279. #0199	8.00	1.00	7.00
280. #0213	8.00	1.00	7.00
281. #0242	12.00	5.00	7.00
282. #0268	10.00	3.00	7.00
283. #0288	10.00	3.00	7.00
284. #0301	13.00	6.00	7.00
285. #0302	12.00	5.00	7.00
286. #0353	8.00	1.00	7.00
287. #0376	18.00	11.00	7.00
288. #0381	17.00	10.00	7.00
289. #0458	7.00	.00	7.00
290. #0562	8.00	1.00	7.00

291. #0565	8.00	1.00	7.00
292. #0601	10.00	3.00	7.00
293. #0702	7.00	.00	7.00
294. #0764	15.00	8.00	7.00
295. #0777	7.00	.00	7.00
296. #0779	7.00	.00	7.00
297. #0835	8.00	1.00	7.00
298. #0836	8.00	1.00	7.00
299. #0925	18.00	11.00	7.00
300. #0943	7.00	.00	7.00
301. #0945	10.00	3.00	7.00
302. #0946	10.00	3.00	7.00
303. #1014	11.00	4.00	7.00
304. #1015	11.00	4.00	7.00
305. #1022	8.00	1.00	7.00
306. #1056	9.00	2.00	7.00
307. #1057	10.00	3.00	7.00
308. #1076	12.00	5.00	7.00
309. #1131	11.00	4.00	7.00
310. #1132	11.00	4.00	7.00
311. #1133	11.00	4.00	7.00
312. #1134	11.00	4.00	7.00
313. #1136	12.00	5.00	7.00
314. #1137	12.00	5.00	7.00
315. #1189	8.00	1.00	7.00
316. #1255	16.00	9.00	7.00
317. #1318	9.00	2.00	7.00
318. #1334	9.00	2.00	7.00
319. #1335	9.00	2.00	7.00
320. #1340	10.00	3.00	7.00
321. #1349	7.00	.00	7.00
322. #1365	10.00	3.00	7.00
323. #1366	10.00	3.00	7.00
324. #1498	14.00	7.00	7.00
325. #1532	8.00	1.00	7.00
326. #1567	15.00	8.00	7.00
327. #1594	9.00	2.00	7.00
328. #1611	8.00	1.00	7.00
329.#2048	20.00	13.00	7.00
330. #0085	6.00	.00	6.00
331. #0113	7.00	1.00	6.00
332. #0141	16.00	10.00	6.00
333. #0166	6.00	.00	6.00
334. #0175	11.00	5.00	6.00
335. #0177	13.00	7.00	6.00
336. #0207	15.00	9.00	6.00
337. #0237	7.00	1.00	6.00
338. #0267	7.00	1.00	6.00
339. #0375	19.00	13.00	6.00
340. #0377	17.00	11.00	6.00
341. #0422	8.00	2.00	6.00
342. #0430	7.00	1.00	6.00
343. #0431	7.00	1.00	6.00
344. #0464	10.00	4.00	6.00
345. #0522	20.00	14.00	6.00
346. #0523	20.00	14.00	6.00
347. #0524	20.00	14.00	6.00
348. #0525	20.00	14.00	6.00
349. #0526	20.00	14.00	6.00
350. #0569	14.00	8.00	6.00
351. #0570	14.00	8.00	6.00
352. #0579	14.00	8.00	6.00
353. #0602	9.00	3.00	6.00
354. #0837	7.00	1.00	6.00
355. #0838	7.00	1.00	6.00
356. #0888	7.00	1.00	6.00
357. #0898	15.00	9.00	6.00
358. #0980	10.00	4.00	6.00
359. #0981	10.00	4.00	6.00
360. #1011	6.00	.00	6.00
361. #1012	8.00	2.00	6.00
362. #1034	10.00	4.00	6.00
363. #1040	6.00	.00	6.00
364. #1054	9.00	3.00	6.00
365. #1059	11.00	5.00	6.00
366. #1077	6.00	.00	6.00
367. #1130	10.00	4.00	6.00
368. #1168	21.00	15.00	6.00
369. #1237	10.00	4.00	6.00
370. #1239	12.00	6.00	6.00
371. #1338	11.00	5.00	6.00
372. #1341	11.00	5.00	6.00
373. #1382	8.00	2.00	6.00
374. #1386	17.00	11.00	6.00
375. #1388	17.00	11.00	6.00
376. #1389	17.00	11.00	6.00
377. #1393	7.00	1.00	6.00
378. #1402	7.00	1.00	6.00
379. #1459	14.00	8.00	6.00
380. #1503	6.00	.00	6.00
381. #1510	26.00	20.00	6.00
382. #1521	21.00	15.00	6.00
383. #1524	7.00	1.00	6.00
384. #1546	7.00	1.00	6.00
385. #1550	8.00	2.00	6.00
386. #1588	9.00	3.00	6.00
387. #1610	7.00	1.00	6.00
388. #0031	7.00	2.00	5.00
389. #0139	16.00	11.00	5.00
390. #0140	16.00	11.00	5.00

391. #0156	8.00	3.00	5.00
391. #0188	6.00	1.00	5.00
393. #0250	14.00	9.00	5.00
394. #0266	6.00	1.00	5.00
395. #0310	7.00	2.00	5.00
396. #0314	16.00	11.00	5.00
397. #0385	9.00	4.00	5.00
398. #0386	9.00	4.00	5.00
399. #0445	5.00	.00	5.00
400. #0509	5.00	.00	5.00
401. #0512	6.00	1.00	5.00
402. #0542	7.00	2.00	5.00
403. #0607	14.00	9.00	5.00
404. #0645	10.00	5.00	5.00
405. #0703	5.00	.00	5.00
406. #0726	11.00	6.00	5.00
407. #0739	16.00	11.00	5.00
408. #0740	16.00	11.00	5.00
409. #0765	10.00	5.00	5.00
410. #0802	6.00	1.00	5.00
411. #0814	7.00	2.00	5.00
412. #0839	6.00	1.00	5.00
413. #0852	22.00	17.00	5.00
414. #1037	5.00	.00	5.00
415. #1100	7.00	2.00	5.00
416. #1112	6.00	1.00	5.00
417. #1113	6.00	1.00	5.00
418. #1178	7.00	2.00	5.00
419. #1182	9.00	4.00	5.00
420. #1200	6.00	1.00	5.00
421. #1204	11.00	6.00	5.00
422. #1234	7.00	2.00	5.00
423. #1240	9.00	4.00	5.00
424. #1241	9.00	4.00	5.00
425. #1317	12.00	7.00	5.00
426. #1327	8.00	3.00	5.00
427. #1332	10.00	5.00	5.00
428. #1345	8.00	3.00	5.00
429. #1356	6.00	1.00	5.00
430. #1381	25.00	20.00	5.00
431. #1455	6.00	1.00	5.00
432. #1530	8.00	3.00	5.00
433. #0003	16.00	12.00	4.00
434. #0004	16.00	12.00	4.00
435. #0006	16.00	12.00	4.00
436. #0019	7.00	3.00	4.00
437. #0112	5.00	1.00	4.00
438. #0115	6.00	2.00	4.00
439. #0121	5.00	1.00	4.00
440. #0124	6.00	2.00	4.00
441. #0152	4.00	.00	4.00
442. #0208	13.00	9.00	4.00
443. #0249	14.00	10.00	4.00
444. #0291	15.00	11.00	4.00
445. #0352	5.00	1.00	4.00
446. #0379	10.00	6.00	4.00
447. #0380	10.00	6.00	4.00
448. #0409	6.00	2.00	4.00
449. #0412	5.00	1.00	4.00
450. #0446	6.00	2.00	4.00
451. #0455	4.00	.00	4.00
452. #0480	6.00	2.00	4.00
453. #0507	6.00	2.00	4.00
454. #0508	5.00	1.00	4.00
455. #0536	16.00	12.00	4.00
456. #0567	9.00	5.00	4.00
457. #0568	9.00	5.00	4.00
458. #0626	5.00	1.00	4.00
459. #0655	8.00	4.00	4.00
460. #0656	8.00	4.00	4.00
461. #0679	6.00	2.00	4.00
462. #0695	7.00	3.00	4.00
463. #0696	7.00	3.00	4.00
464. #0737	7.00	3.00	4.00
465. #0759	4.00	.00	4.00
466. #0786	15.00	11.00	4.00
467. #0830	5.00	1.00	4.00
468. #0831	5.00	1.00	4.00
469. #0861	8.00	4.00	4.00
470. #0932	12.00	8.00	4.00
471. #0933	12.00	8.00	4.00
472. #0967	16.00	12.00	4.00
473. #1035	8.00	4.00	4.00
474. #1063	4.00	.00	4.00
475. #1098	10.00	6.00	4.00
476. #1101	13.00	9.00	4.00
477. #1108	14.00	10.00	4.00
478. #1110	5.00	1.00	4.00
479. #1111	5.00	1.00	4.00
470. #1123	4.00	.00	4.00
481. #1152	7.00	3.00	4.00
482. #1154	4.00	.00	4.00
483. #1244	8.00	4.00	4.00
484. #1337	14.00	10.00	4.00
485. #1346	7.00	3.00	4.00
486. #1376	6.00	2.00	4.00
487. #1377	6.00	2.00	4.00
488. #1380	25.00	21.00	4.00
489. #1426	13.00	9.00	4.00
490. #1427	13.00	9.00	4.00

491. #1469	5.00	1.00	4.00
492. #1484	10.00	6.00	4.00
493. #1485	9.00	5.00	4.00
494. #1518	15.00	11.00	4.00
495. #1519	15.00	11.00	4.00
496. #1526	6.00	2.00	4.00
497. #1545	8.00	4.00	4.00
498. #1593	9.00	5.00	4.00
499. #1609	5.00	1.00	4.00
500. #1613	5.00	1.00	4.00
501. #2049	18.00	14.00	4.00
502. #2050	18.00	14.00	4.00
503. #0049	8.00	5.00	3.00
504. #0118	6.00	3.00	3.00
505. #0122	6.00	3.00	3.00
506. #0235	3.00	.00	3.00
507. #0312	9.00	6.00	3.00
508. #0313	5.00	2.00	3.00
509. #0315	5.00	2.00	3.00
510. #0347	4.00	1.00	3.00
511. #0378	15.00	12.00	3.00
512. #0402	9.00	6.00	3.00
513. #0460	6.00	3.00	3.00
514. #0617	10.00	7.00	3.00
515. #0619	10.00	7.00	3.00
516. #0623	8.00	5.00	3.00
517. #0624	7.00	4.00	3.00
518. #0672	25.00	22.00	3.00
519. #0673	25.00	22.00	3.00
520. #0687	4.00	1.00	3.00
521. #0689	4.00	1.00	3.00
522. #0722	6.00	3.00	3.00
523. #0723	6.00	3.00	3.00
524. #0743	4.00	1.00	3.00
525. #0756	4.00	1.00	3.00
526. #0783	5.00	2.00	3.00
527. #0785	5.00	2.00	3.00
528. #0790	14.00	11.00	3.00
529. #0832	4.00	1.00	3.00
530. #0858	4.00	1.00	3.00
531. #0860	6.00	3.00	3.00
532. #0872	8.00	5.00	3.00
533. #0887	11.00	8.00	3.00
534. #0914	13.00	10.00	3.00
535. #0988	7.00	4.00	3.00
536. #1001	7.00	4.00	3.00
537. #1020	3.00	.00	3.00
538. #1033	12.00	9.00	3.00
539. #1065	7.00	4.00	3.00
540. #1089	3.00	.00	3.00
541. #1114	7.00	4.00	3.00
542. #1115	7.00	4.00	3.00
543. #1121	10.00	7.00	3.00
544. #1151	8.00	5.00	3.00
545. #1158	3.00	.00	3.00
546. #1159	3.00	.00	3.00
547. #1170	3.00	.00	3.00
548. #1174	3.00	.00	3.00
549. #1230	5.00	2.00	3.00
550. #1231	5.00	2.00	3.00
551. #1232	5.00	2.00	3.00
552. #1233	5.00	2.00	3.00
553. #1243	4.00	1.00	3.00
554. #1247	6.00	3.00	3.00
555. #1284	4.00	1.00	3.00
556. #1303	3.00	.00	3.00
557. #1348	9.00	6.00	3.00
558. #1383	8.00	5.00	3.00
559. #1400	11.00	8.00	3.00
560. #1477	24.00	21.00	3.00
561. #1478	24.00	21.00	3.00
562. #1514	9.00	6.00	3.00
563. #1522	3.00	.00	3.00
564. #1523	3.00	.00	3.00
565. #1544	7.00	4.00	3.00
566. #1547	11.00	8.00	3.00
567. #1551	6.00	3.00	3.00
568. #1552	8.00	5.00	3.00
569. #1601	3.00	.00	3.00
570. #1605	7.00	4.00	3.00
571. #1606	8.00	5.00	3.00
572. #2033	11.00	8.00	3.00
573. #0044	3.00	1.00	2.00
574. #0048	20.00	18.00	2.00
575. #0117	12.00	10.00	2.00
576. #0120	4.00	2.00	2.00
577. #0154	17.00	15.00	2.00
578. #0178	4.00	2.00	2.00
579. #0224	6.00	4.00	2.00
580. #0225	6.00	4.00	2.00
581. #0348	4.00	2.00	2.00
582. #0349	4.00	2.00	2.00
583. #0456	4.00	2.00	2.00
584. #0478	4.00	2.00	2.00
585. #0506	5.00	3.00	2.00
586. #0557	10.00	8.00	2.00
587. #0558	10.00	8.00	2.00
588. #0587	6.00	4.00	2.00
589. #0588	6.00	4.00	2.00
590. #0599	3.00	1.00	2.00

591. #0618	10.00	8.00	2.00
592. #0620	8.00	6.00	2.00
593. #0635	7.00	5.00	2.00
594. #0637	7.00	5.00	2.00
595. #0690	4.00	2.00	2.00
596. #0691	4.00	2.00	2.00
597. #0693	4.00	2.00	2.00
598. #0694	4.00	2.00	2.00
599. #0788	17.00	15.00	2.00
600. #0791	14.00	12.00	2.00
601. #0821	19.00	17.00	2.00
602. #0822	19.00	17.00	2.00
603. #0833	3.00	1.00	2.00
604. #0854	7.00	5.00	2.00
605. #0877	10.00	8.00	2.00
606. #0878	10.00	8.00	2.00
607. #0879	10.00	8.00	2.00
608. #0982	7.00	5.00	2.00
609. #1002	22.00	20.00	2.00
610. #1082	6.00	4.00	2.00
611. #1088	6.00	4.00	2.00
612. #1091	7.00	5.00	2.00
613. #1109	2.00	.00	2.00
614. #1120	4.00	2.00	2.00
615. #1138	4.00	2.00	2.00
616. #1139	4.00	2.00	2.00
617. #1210	8.00	6.00	2.00
618. #1214	5.00	3.00	2.00
619. #1275	3.00	1.00	2.00
620. #1307	5.00	3.00	2.00
621. #1322	2.00	.00	2.00
622. #1323	2.00	.00	2.00
623. #1339	6.00	4.00	2.00
624. #1347	8.00	6.00	2.00
625. #1465	11.00	9.00	2.00
626. #1466	11.00	9.00	2.00
627. #1468	2.00	.00	2.00
628. #1487	9.00	7.00	2.00
629. #1513	9.00	7.00	2.00
630. #1557	10.00	8.00	2.00
631. #1560	5.00	3.00	2.00
632. #1581	14.00	12.00	2.00
633. #1603	3.00	1.00	2.00
634. #0025	1.00	.00	1.00
635. #0045	4.00	3.00	1.00
636. #0046	4.00	3.00	1.00
637. #0116	12.00	11.00	1.00
638. #0130	5.00	4.00	1.00
639. #0153	14.00	13.00	1.00
640. #0167	3.00	2.00	1.00
641. #0179	4.00	3.00	1.00
642. #0206	5.00	4.00	1.00
643. #0210	3.00	2.00	1.00
644. #0255	13.00	12.00	1.00
645. #0289	11.00	10.00	1.00
646. #0290	11.00	10.00	1.00
647. #0292	1.00	.00	1.00
648. #0294	1.00	.00	1.00
649. #0295	1.00	.00	1.00
650. #0403	3.00	2.00	1.00
651. #0435	1.00	.00	1.00
652. #0443	1.00	.00	1.00
653. #0487	10.00	9.00	1.00
654. #0578	2.00	1.00	1.00
655. #0581	2.00	1.00	1.00
656. #0614	7.00	6.00	1.00
657. #0615	7.00	6.00	1.00
658. #0621	9.00	8.00	1.00
659. #0631	22.00	21.00	1.00
660. #0634	7.00	6.00	1.00
661. #0647	8.00	7.00	1.00
662. #0712	4.00	3.00	1.00
663. #0728	2.00	1.00	1.00
664. #0730	1.00	.00	1.00
665. #0738	5.00	4.00	1.00
666. #0741	3.00	2.00	1.00
667. #0742	4.00	3.00	1.00
668. #0787	20.00	19.00	1.00
669. #0827	8.00	7.00	1.00
670. #0834	2.00	1.00	1.00
671. #0840	6.00	5.00	1.00
672. #0841	6.00	5.00	1.00
673. #0918	2.00	1.00	1.00
674. #0979	6.00	5.00	1.00
675. #1042	28.00	27.00	1.00
676. #1052	7.00	6.00	1.00
677. #1053	8.00	7.00	1.00
678. #1055	3.00	2.00	1.00
679. #1078	4.00	3.00	1.00
680. #1087	5.00	4.00	1.00
681. #1107	1.00	.00	1.00
682. #1122	1.00	.00	1.00
683. #1175	3.00	2.00	1.00
684. #1177	5.00	4.00	1.00
685. #1195	1.00	.00	1.00
686. #1197	2.00	1.00	1.00
687. #1207	1.00	.00	1.00
688. #1215	2.00	1.00	1.00
689. #1220	2.00	1.00	1.00
690. #1269	3.00	2.00	1.00

691. #1273	6.00	5.00	1.00
692. #1274	6.00	5.00	1.00
693. #1276	6.00	5.00	1.00
694. #1277	6.00	5.00	1.00
695. #1287	2.00	1.00	1.00
696. #1302	4.00	3.00	1.00
697. #1305	6.00	5.00	1.00
698. #1306	6.00	5.00	1.00
699. #1310	11.00	10.00	1.00
700. #1328	9.00	8.00	1.00
701. #1378	1.00	.00	1.00
702. #1387	14.00	13.00	1.00
703. #1390	14.00	13.00	1.00
704. #1539	6.00	5.00	1.00
705. #1570	2.00	1.00	1.00
706. #1575	3.00	2.00	1.00
707. #1577	4.00	3.00	1.00
708. #1602	2.00	1.00	1.00
709. #1607	5.00	4.00	1.00

APPENDIX I

PROPERTY-OWNER FRAME

PURITY INDEX

Scores in the *Property-Owner Frame Purity Index* (column 4) were computed by subtracting the scores or term frequencies in the *Conservation Frame Index* (column 3) from scores in the *Property-Owner Frame Index* (column 2). Column 1 lists four-digit Case Identification Number for AP news articles. Articles are rank ordered by score in *Property-Owner Frame Purity Index*. Only positive scores are listed.

1. #0671	46.00	2.00	44.00
2. #0072	53.00	16.00	37.00
3. #0073	53.00	16.00	37.00
4. #0074	53.00	16.00	37.00
5. #0075	53.00	16.00	37.00
6. #0811	36.00	1.00	35.00
7. #0812	36.00	1.00	35.00
8. #0806	35.00	1.00	34.00
9. #0807	35.00	1.00	34.00
10. #0808	35.00	1.00	34.00
11. #0809	35.00	1.00	34.00
12. #0810	35.00	1.00	34.00
13. #0084	41.00	8.00	33.00
14. #0892	40.00	7.00	33.00
15. #0893	40.00	7.00	33.00
16. #0079	47.00	15.00	32.00
17. #0080	47.00	15.00	32.00
18. #1533	33.00	1.00	32.00
19. #0093	35.00	4.00	31.00
20. #1251	41.00	11.00	30.00
21. #1252	41.00	11.00	30.00
22. #0890	35.00	5.00	30.00
23. #0891	35.00	5.00	30.00
24. #2055	31.00	1.00	30.00
25. #0068	48.00	19.00	29.00
26. #0069	48.00	19.00	29.00
27. #0081	44.00	15.00	29.00
28. #0082	44.00	15.00	29.00
29. #0008	43.00	14.00	29.00
30. #0021	40.00	11.00	29.00
31. #0047	35.00	6.00	29.00
32. #1549	33.00	4.00	29.00
33. #0070	47.00	19.00	28.00
34. #1536	33.00	5.00	28.00
35. #0091	32.00	4.00	28.00
36. #0092	32.00	4.00	28.00
37. #0001	30.00	2.00	28.00
38. #1548	30.00	2.00	28.00
39. #0087	28.00	.00	28.00
40. #0083	37.00	10.00	27.00
41. #0002	29.00	2.00	27.00
42. #0272	28.00	1.00	27.00
43. #0662	27.00	.00	27.00
44. #0022	37.00	11.00	26.00
45. #1535	28.00	2.00	26.00
46. #0273	27.00	1.00	26.00
47. #0077	45.00	20.00	25.00
48. #0078	45.00	20.00	25.00
49. #0063	40.00	15.00	25.00
50. #0894	32.00	7.00	25.00
51. #0895	32.00	7.00	25.00
52. #0994	32.00	7.00	25.00
53. #0995	32.00	7.00	25.00
54. #1590	27.00	2.00	25.00
55. #2058	27.00	2.00	25.00
56. #0088	25.00	.00	25.00
57. #0996	33.00	9.00	24.00
58. #0997	33.00	9.00	24.00
59. #0782	31.00	7.00	24.00
60. #0900	27.00	3.00	24.00
61. #0901	27.00	3.00	24.00
62. #0274	25.00	1.00	24.00
63. #0969	25.00	1.00	24.00
64. #0874	30.00	7.00	23.00
65. #0948	28.00	5.00	23.00
66. #0168	26.00	3.00	23.00
67. #0169	26.00	3.00	23.00
68. #0902	26.00	3.00	23.00
69. #0903	26.00	3.00	23.00
70. #2040	26.00	3.00	23.00
71. #2041	26.00	3.00	23.00
72. #0663	23.00	.00	23.00
73. #0780	31.00	9.00	22.00
74. #0873	29.00	7.00	22.00
75. #1563	28.00	6.00	22.00
76. #1564	28.00	6.00	22.00
77. #0951	27.00	5.00	22.00
78. #0952	27.00	5.00	22.00
79. #0719	26.00	4.00	22.00
80. #0778	28.00	7.00	21.00
81. #0781	28.00	7.00	21.00
82. #0725	26.00	5.00	21.00
83. #1582	26.00	5.00	21.00
84. #0800	22.00	1.00	21.00
85. #0970	22.00	1.00	21.00
86. #0971	22.00	1.00	21.00
87. #1589	22.00	1.00	21.00
88. #0322	31.00	11.00	20.00
89. #0323	31.00	11.00	20.00
90. #0432	30.00	10.00	20.00

91. #0086	26.00	6.00	20.00
92. #0496	26.00	6.00	20.00
93. #0094	24.00	4.00	20.00
94. #1069	24.00	4.00	20.00
95. #1070	24.00	4.00	20.00
96. #2062	21.00	1.00	20.00
97. #0039	20.00	.00	20.00
98. #0664	20.00	.00	20.00
99. #1398	26.00	7.00	19.00
100. #0950	24.00	5.00	19.00
101. #0670	19.00	.00	19.00
102. #0433	29.00	11.00	18.00
103. #0768	27.00	9.00	18.00
104. #1491	26.00	8.00	18.00
105. #1492	26.00	8.00	18.00
106. #1527	26.00	8.00	18.00
107. #1528	26.00	8.00	18.00
108. #1529	26.00	8.00	18.00
109. #0961	20.00	2.00	18.00
110. #0962	20.00	2.00	18.00
111. #1511	19.00	1.00	18.00
112. #1512	19.00	1.00	18.00
113. #0767	27.00	10.00	17.00
114. #1490	27.00	10.00	17.00
115. #0005	24.00	7.00	17.00
116. #0026	22.00	5.00	17.00
117. #0030	22.00	5.00	17.00
118. #0057	18.00	1.00	17.00
119. #0198	18.00	1.00	17.00
120. #0666	17.00	.00	17.00
121. #1472	27.00	11.00	16.00
122. #0660	19.00	3.00	16.00
123. #0034	17.00	1.00	16.00
124. #0035	17.00	1.00	16.00
125. #0796	17.00	1.00	16.00
126. #0964	17.00	1.00	16.00
127. #0965	17.00	1.00	16.00
128. #0040	16.00	.00	16.00
129. #0055	16.00	.00	16.00
130. #0056	16.00	.00	16.00
131. #0667	16.00	.00	16.00
132. #1321	16.00	.00	16.00
133. #0990	33.00	18.00	15.00
134. #0991	33.00	18.00	15.00
135. #0244	24.00	9.00	15.00
136. #1562	24.00	9.00	15.00
137. #0058	21.00	6.00	15.00
138. #0059	21.00	6.00	15.00
139. #0038	20.00	5.00	15.00
140. #2056	20.00	5.00	15.00
141. #1030	19.00	4.00	15.00
142. #1031	19.00	4.00	15.00
143. #1032	19.00	4.00	15.00
144. #0661	18.00	3.00	15.00
145. #0036	16.00	1.00	15.00
146. #1470	16.00	1.00	15.00
147. #2034	16.00	1.00	15.00
148. #2035	16.00	1.00	15.00
149. #0868	15.00	.00	15.00
150. #2045	15.00	.00	15.00
151. #2046	15.00	.00	15.00
152. #0992	30.00	16.00	14.00
153. #0993	30.00	16.00	14.00
154. #0813	25.00	11.00	14.00
155. #0875	21.00	7.00	14.00
156. #0876	21.00	7.00	14.00
157. #1566	19.00	5.00	14.00
158. #0148	17.00	3.00	14.00
159. #0150	17.00	3.00	14.00
160. #0953	17.00	3.00	14.00
161. #0037	15.00	1.00	14.00
162. #1192	15.00	1.00	14.00
163. #1193	15.00	1.00	14.00
164. #0483	14.00	.00	14.00
165. #0485	14.00	.00	14.00
166. #0869	14.00	.00	14.00
167. #0957	14.00	.00	14.00
168. #0182	28.00	15.00	13.00
169. #0183	28.00	15.00	13.00
170. #0184	28.00	15.00	13.00
171. #0844	28.00	15.00	13.00
172. #0595	27.00	14.00	13.00
173. #0596	27.00	14.00	13.00
174. #1126	24.00	11.00	13.00
175. #1127	24.00	11.00	13.00
176. #0681	20.00	7.00	13.00
177. #1364	19.00	6.00	13.00
178. #0963	16.00	3.00	13.00
179. #1425	16.00	3.00	13.00
180. #1591	16.00	3.00	13.00
181. #1125	15.00	2.00	13.00
182. #1128	15.00	2.00	13.00
183. #0513	14.00	1.00	13.00
184. #0682	14.00	1.00	13.00
185. #0958	13.00	.00	13.00
186. #0845	24.00	12.00	12.00
187. #0846	24.00	12.00	12.00
188. #0262	23.00	11.00	12.00
189. #1561	23.00	11.00	12.00
190. #0043	22.00	10.00	12.00

191. #0944	21.00	9.00	12.00
192. #0907	20.00	8.00	12.00
193. #0346	16.00	4.00	12.00
194. #0899	16.00	4.00	12.00
195. #0968	16.00	4.00	12.00
196. #0251	15.00	3.00	12.00
197. #0960	15.00	3.00	12.00
198. #0966	15.00	3.00	12.00
199. #0717	13.00	1.00	12.00
200. #0033	12.00	.00	12.00
201. #0217	21.00	10.00	11.00
202. #0260	21.00	10.00	11.00
203. #0261	21.00	10.00	11.00
204. #0339	21.00	10.00	11.00
205. #0340	21.00	10.00	11.00
206. #0341	21.00	10.00	11.00
207. #0520	21.00	10.00	11.00
208. #0521	21.00	10.00	11.00
209. #0942	20.00	9.00	11.00
210. #0906	19.00	8.00	11.00
211. #0007	18.00	7.00	11.00
212. #0232	17.00	6.00	11.00
213. #0234	17.00	6.00	11.00
214. #0784	16.00	5.00	11.00
215. #0345	15.00	4.00	11.00
216. #0604	14.00	3.00	11.00
217. #0066	13.00	2.00	11.00
218. #0514	13.00	2.00	11.00
219. #1534	13.00	2.00	11.00
220. #0211	12.00	1.00	11.00
221. #0863	12.00	1.00	11.00
222. #0382	31.00	21.00	10.00
223. #1264	21.00	11.00	10.00
224. #0218	20.00	10.00	10.00
225. #1017	20.00	10.00	10.00
226. #0343	18.00	8.00	10.00
227. #0344	18.00	8.00	10.00
228. #0009	15.00	5.00	10.00
229. #0440	15.00	5.00	10.00
230. #0441	15.00	5.00	10.00
231. #0226	14.00	4.00	10.00
232. #0228	14.00	4.00	10.00
233. #0915	13.00	3.00	10.00
234. #0639	12.00	2.00	10.00
235. #0641	12.00	2.00	10.00
236. #0366	11.00	1.00	10.00
237. #0862	11.00	1.00	10.00
238. #0864	11.00	1.00	10.00
239. #0665	10.00	.00	10.00
240. #0713	10.00	.00	10.00
241. #0686	25.00	16.00	9.00
242. #1254	25.00	16.00	9.00
243. #0684	20.00	11.00	9.00
244. #1432	16.00	7.00	9.00
245. #0425	15.00	6.00	9.00
246. #0387	14.00	5.00	9.00
247. #1363	14.00	5.00	9.00
248. #1537	14.00	5.00	9.00
249. #1538	14.00	5.00	9.00
250. #1270	13.00	4.00	9.00
251. #1271	13.00	4.00	9.00
252. #0041	12.00	3.00	9.00
253. #0042	12.00	3.00	9.00
254. #0286	12.00	3.00	9.00
255. #0515	12.00	3.00	9.00
256. #0545	12.00	3.00	9.00
257. #1430	12.00	3.00	9.00
258. #0367	10.00	1.00	9.00
259. #0368	10.00	1.00	9.00
260. #0369	10.00	1.00	9.00
261. #0371	10.00	1.00	9.00
262. #0716	10.00	1.00	9.00
263. #0528	9.00	.00	9.00
264. #0627	9.00	.00	9.00
265. #0714	9.00	.00	9.00
266. #0383	29.00	21.00	8.00
267. #0318	18.00	10.00	8.00
268. #0319	18.00	10.00	8.00
269. #0320	17.00	9.00	8.00
270. #0321	17.00	9.00	8.00
271. #0789	17.00	9.00	8.00
272. #0628	16.00	8.00	8.00
273. #0629	16.00	8.00	8.00
274. #0630	16.00	8.00	8.00
275. #1476	16.00	8.00	8.00
276. #0427	14.00	6.00	8.00
277. #0724	14.00	6.00	8.00
278. #1431	14.00	6.00	8.00
279. #0050	13.00	5.00	8.00
280. #1395	13.00	5.00	8.00
281. #0744	12.00	4.00	8.00
282. #0101	11.00	3.00	8.00
283. #0102	11.00	3.00	8.00
284. #0306	11.00	3.00	8.00
285. #0516	11.00	3.00	8.00
286. #0517	11.00	3.00	8.00
287. #0518	11.00	3.00	8.00
288. #0546	11.00	3.00	8.00
289. #0123	10.00	2.00	8.00
290. #0553	10.00	2.00	8.00

291. #0554	10.00	2.00	8.00
292. #1191	10.00	2.00	8.00
293. #0476	9.00	1.00	8.00
294. #0633	9.00	1.00	8.00
295. #0987	9.00	1.00	8.00
296. #0370	8.00	.00	8.00
297. #0372	8.00	.00	8.00
298. #0750	8.00	.00	8.00
299. #0751	8.00	.00	8.00
300. #1437	8.00	.00	8.00
301. #2038	8.00	.00	8.00
302. #2054	8.00	.00	8.00
303. #2057	8.00	.00	8.00
304. #0848	29.00	22.00	7.00
305. #1463	22.00	15.00	7.00
306. #1464	22.00	15.00	7.00
307. #0329	19.00	12.00	7.00
308. #0592	19.00	12.00	7.00
309. #0128	18.00	11.00	7.00
310. #0947	17.00	10.00	7.00
311. #0803	16.00	9.00	7.00
312. #0805	16.00	9.00	7.00
313. #0936	14.00	7.00	7.00
314. #0937	14.00	7.00	7.00
315. #0938	14.00	7.00	7.00
316. #0939	14.00	7.00	7.00
317. #0547	13.00	6.00	7.00
318. #0065	11.00	4.00	7.00
319. #0067	11.00	4.00	7.00
320. #0331	11.00	4.00	7.00
321. #0333	11.00	4.00	7.00
322. #0336	11.00	4.00	7.00
323. #1488	11.00	4.00	7.00
324. #0699	10.00	3.00	7.00
325. #0388	9.00	2.00	7.00
326. #0389	9.00	2.00	7.00
327. #0390	9.00	2.00	7.00
328. #0551	9.00	2.00	7.00
329. #0552	9.00	2.00	7.00
330. #0555	9.00	2.00	7.00
331. #0720	9.00	2.00	7.00
332. #0721	9.00	2.00	7.00
333. #2059	9.00	2.00	7.00
334. #0125	8.00	1.00	7.00
335. #0126	8.00	1.00	7.00
336. #0127	8.00	1.00	7.00
337. #0401	8.00	1.00	7.00
338. #0954	8.00	1.00	7.00
339. #0955	8.00	1.00	7.00
340. #0956	8.00	1.00	7.00
341. #2037	8.00	1.00	7.00
342. #0145	7.00	.00	7.00
343. #0531	7.00	.00	7.00
344. #0534	7.00	.00	7.00
345. #0535	7.00	.00	7.00
346. #0537	7.00	.00	7.00
347. #0678	7.00	.00	7.00
348. #0299	29.00	23.00	6.00
349. #0428	18.00	12.00	6.00
350. #0107	17.00	11.00	6.00
351. #0769	17.00	11.00	6.00
352. #0804	17.00	11.00	6.00
353. #0949	16.00	10.00	6.00
354. #0586	14.00	8.00	6.00
355. #0488	13.00	7.00	6.00
356. #0883	12.00	6.00	6.00
357. #0884	12.00	6.00	6.00
358. #0361	11.00	5.00	6.00
359. #0362	11.00	5.00	6.00
360. #0363	11.00	5.00	6.00
361. #1394	11.00	5.00	6.00
362. #0453	10.00	4.00	6.00
363. #1180	10.00	4.00	6.00
364. #1401	10.00	4.00	6.00
365. #1429	10.00	4.00	6.00
366. #1572	10.00	4.00	6.00
367. #0014	9.00	3.00	6.00
368. #0157	9.00	3.00	6.00
369. #0307	9.00	3.00	6.00
370. #0442	9.00	3.00	6.00
371. #0481	9.00	3.00	6.00
372. #0482	9.00	3.00	6.00
373. #0698	9.00	3.00	6.00
374. #0718	9.00	3.00	6.00
375. #0828	9.00	3.00	6.00
376. #1142	9.00	3.00	6.00
377. #1267	9.00	3.00	6.00
378. #1268	9.00	3.00	6.00
379. #0688	8.00	2.00	6.00
380. #1075	8.00	2.00	6.00
381. #1266	8.00	2.00	6.00
382. #1495	8.00	2.00	6.00
383. #0415	7.00	1.00	6.00
384. #0922	7.00	1.00	6.00
385. #1439	7.00	1.00	6.00
386. #1486	7.00	1.00	6.00
387. #0052	6.00	.00	6.00
388. #0053	6.00	.00	6.00
389. #0054	6.00	.00	6.00
390. #0275	6.00	.00	6.00

391. #0411	6.00	.00	6.00
392. #0749	6.00	.00	6.00
393. #1421	22.00	17.00	5.00
394. #1422	22.00	17.00	5.00
395. #0851	19.00	14.00	5.00
396. #0436	17.00	12.00	5.00
397. #0437	17.00	12.00	5.00
398. #0532	17.00	12.00	5.00
399. #0685	16.00	11.00	5.00
400. #0584	14.00	9.00	5.00
401. #0792	13.00	8.00	5.00
402. #0793	13.00	8.00	5.00
403. #0359	11.00	6.00	5.00
404. #0360	11.00	6.00	5.00
405. #0498	11.00	6.00	5.00
406. #0548	11.00	6.00	5.00
407. #0549	11.00	6.00	5.00
408. #1198	11.00	6.00	5.00
409. #1199	11.00	6.00	5.00
410. #0978	10.00	5.00	5.00
411. #1221	10.00	5.00	5.00
412. #1222	10.00	5.00	5.00
413. #0755	9.00	4.00	5.00
414. #1451	9.00	4.00	5.00
415. #1452	9.00	4.00	5.00
416. #1453	9.00	4.00	5.00
417. #2044	8.00	3.00	5.00
418. #0149	7.00	2.00	5.00
419. #1296	7.00	2.00	5.00
420. #0263	6.00	1.00	5.00
421. #0264	6.00	1.00	5.00
422. #0417	6.00	1.00	5.00
423. #0418	6.00	1.00	5.00
424. #0632	6.00	1.00	5.00
425. #0636	6.00	1.00	5.00
426. #0638	6.00	1.00	5.00
427. #1316	6.00	1.00	5.00
428. #0276	5.00	.00	5.00
429. #0277	5.00	.00	5.00
430. #0413	5.00	.00	5.00
431. #0414	5.00	.00	5.00
432. #0706	5.00	.00	5.00
433. #0707	5.00	.00	5.00
434. #0735	5.00	.00	5.00
435. #0772	5.00	.00	5.00
436. #0773	5.00	.00	5.00
437. #0774	5.00	.00	5.00
438. #0775	5.00	.00	5.00
439. #0866	5.00	.00	5.00
440. #0867	5.00	.00	5.00
441. #1062	5.00	.00	5.00
442. #1067	5.00	.00	5.00
443. #1074	28.00	24.00	4.00
444. #1071	27.00	23.00	4.00
445. #1072	27.00	23.00	4.00
446. #1073	27.00	23.00	4.00
447. #0300	26.00	22.00	4.00
448. #1224	19.00	15.00	4.00
449. #1225	19.00	15.00	4.00
450. #0529	16.00	12.00	4.00
451. #0519	14.00	10.00	4.00
452. #0195	13.00	9.00	4.00
453. #0316	13.00	9.00	4.00
454. #0527	13.00	9.00	4.00
455. #0099	12.00	8.00	4.00
456. #0585	12.00	8.00	4.00
457. #2060	12.00	8.00	4.00
458. #2061	12.00	8.00	4.00
459. #0582	11.00	7.00	4.00
460. #0355	10.00	6.00	4.00
461. #0358	10.00	6.00	4.00
462. #0885	10.00	6.00	4.00
463. #0886	10.00	6.00	4.00
464. #1064	10.00	6.00	4.00
465. #1083	10.00	6.00	4.00
466. #1086	10.00	6.00	4.00
467. #1309	10.00	6.00	4.00
468. #0472	9.00	5.00	4.00
469. #0474	9.00	5.00	4.00
470. #0475	9.00	5.00	4.00
471. #1026	9.00	5.00	4.00
472. #0304	7.00	3.00	4.00
473. #0305	7.00	3.00	4.00
474. #0745	7.00	3.00	4.00
475. #1509	7.00	3.00	4.00
476. #1573	7.00	3.00	4.00
477. #0470	6.00	2.00	4.00
478. #0471	6.00	2.00	4.00
479. #0503	6.00	2.00	4.00
480. #0556	6.00	2.00	4.00
481. #0801	6.00	2.00	4.00
482. #1179	6.00	2.00	4.00
483. #1278	6.00	2.00	4.00
484. #1433	6.00	2.00	4.00
485. #1434	6.00	2.00	4.00
486. #0589	5.00	1.00	4.00
487. #0919	5.00	1.00	4.00
488. #1444	5.00	1.00	4.00
489. #1615	5.00	1.00	4.00
490. #2036	5.00	1.00	4.00

591. #0973	3.00	1.00	2.00
592. #1140	3.00	1.00	2.00
593. #1141	3.00	1.00	2.00
594. #1467	3.00	1.00	2.00
595. #0603	2.00	.00	2.00
596. #0705	2.00	.00	2.00
597. #1285	2.00	.00	2.00
598. #1286	2.00	.00	2.00
599. #1359	2.00	.00	2.00
600. #1360	2.00	.00	2.00
601. #1428	2.00	.00	2.00
602. #0818	23.00	22.00	1.00
603. #0819	23.00	22.00	1.00
604. #0897	22.00	21.00	1.00
605. #0326	17.00	16.00	1.00
606. #0327	17.00	16.00	1.00
607. #0680	14.00	13.00	1.00
608. #0254	13.00	12.00	1.00
609. #0533	13.00	12.00	1.00
610. #0708	13.00	12.00	1.00
611. #0205	12.00	11.00	1.00
612. #0908	12.00	11.00	1.00
613. #0911	12.00	11.00	1.00
614. #0104	11.00	10.00	1.00
615. #1181	11.00	10.00	1.00
616. #0539	10.00	9.00	1.00
617. #1096	10.00	9.00	1.00
618. #1097	10.00	9.00	1.00
619. #0396	9.00	8.00	1.00
620. #0397	9.00	8.00	1.00
621. #0398	9.00	8.00	1.00
622. #0399	9.00	8.00	1.00
623. #1093	9.00	8.00	1.00
624. #1094	9.00	8.00	1.00
625. #1095	9.00	8.00	1.00
626. #0364	8.00	7.00	1.00
627. #0365	8.00	7.00	1.00
628. #1044	8.00	7.00	1.00
629. #1045	8.00	7.00	1.00
630. #1051	8.00	7.00	1.00
631. #1294	8.00	7.00	1.00
632. #1049	7.00	6.00	1.00
633. #1558	7.00	6.00	1.00
634. #1559	7.00	6.00	1.00
635. #0129	6.00	5.00	1.00
636. #0650	6.00	5.00	1.00
637. #0652	6.00	5.00	1.00
638. #1256	6.00	5.00	1.00
639. #1258	6.00	5.00	1.00
640. #0181	5.00	4.00	1.00
641. #0799	5.00	4.00	1.00
642. #0905	5.00	4.00	1.00
643. #1047	5.00	4.00	1.00
644. #1048	5.00	4.00	1.00
645. #0062	4.00	3.00	1.00
646. #0071	4.00	3.00	1.00
647. #0108	4.00	3.00	1.00
648. #0173	4.00	3.00	1.00
649. #0280	4.00	3.00	1.00
650. #1117	4.00	3.00	1.00
651. #1508	4.00	3.00	1.00
652. #2042	4.00	3.00	1.00
653. #0257	3.00	2.00	1.00
654. #0258	3.00	2.00	1.00
655. #0328	3.00	2.00	1.00
656. #0330	3.00	2.00	1.00
657. #0646	3.00	2.00	1.00
658. #0711	3.00	2.00	1.00
659. #0758	3.00	2.00	1.00
660. #1013	3.00	2.00	1.00
661. #1090	3.00	2.00	1.00
662. #1183	3.00	2.00	1.00
663. #1208	3.00	2.00	1.00
664. #1330	3.00	2.00	1.00
665. #0239	2.00	1.00	1.00
666. #0449	2.00	1.00	1.00
667. #0760	2.00	1.00	1.00
668. #1116	2.00	1.00	1.00
669. #1411	2.00	1.00	1.00
670. #0701	1.00	.00	1.00
671. #0865	1.00	.00	1.00
672. #0983	1.00	.00	1.00
673. #1092	1.00	.00	1.00
674. #1250	1.00	.00	1.00
675. #1253	1.00	.00	1.00
676. #1295	1.00	.00	1.00
677. #1357	1.00	.00	1.00
678. #1358	1.00	.00	1.00
679. #1541	1.00	.00	1.00

491. #0212	4.00	.00	4.00
492. #0253	4.00	.00	4.00
493. #0461	4.00	.00	4.00
494. #0462	4.00	.00	4.00
495. #0676	4.00	.00	4.00
496. #0870	4.00	.00	4.00
497. #0871	4.00	.00	4.00
498. #2052	4.00	.00	4.00
499. #0762	18.00	15.00	3.00
500. #0763	18.00	15.00	3.00
501. #0843	15.00	12.00	3.00
502. #0429	14.00	11.00	3.00
503. #0438	13.00	10.00	3.00
504. #0934	13.00	10.00	3.00
505. #0935	13.00	10.00	3.00
506. #1289	13.00	10.00	3.00
507. #1290	13.00	10.00	3.00
508. #0658	12.00	9.00	3.00
509. #0394	10.00	7.00	3.00
510. #0395	10.00	7.00	3.00
511. #0583	10.00	7.00	3.00
512. #1160	9.00	6.00	3.00
513. #1265	9.00	6.00	3.00
514. #1384	9.00	6.00	3.00
515. #0076	8.00	5.00	3.00
516. #0356	8.00	5.00	3.00
517. #0357	8.00	5.00	3.00
518. #1004	8.00	5.00	3.00
519. #1005	8.00	5.00	3.00
520. #1081	8.00	5.00	3.00
521. #1164	8.00	5.00	3.00
522. #1460	8.00	5.00	3.00
523. #0452	7.00	4.00	3.00
524. #0504	7.00	4.00	3.00
525. #0710	7.00	4.00	3.00
526. #0753	7.00	4.00	3.00
527. #0794	7.00	4.00	3.00
528. #0795	7.00	4.00	3.00
529. #0032	6.00	3.00	3.00
530. #0282	6.00	3.00	3.00
531. #0746	6.00	3.00	3.00
532. #0889	5.00	2.00	3.00
533. #1084	5.00	2.00	3.00
534. #1155	5.00	2.00	3.00
535. #1298	5.00	2.00	3.00
536. #1301	5.00	2.00	3.00
537. #1540	5.00	2.00	3.00
538. #0133	4.00	1.00	3.00
539. #0594	4.00	1.00	3.00
540. #0727	4.00	1.00	3.00
541. #0771	4.00	1.00	3.00
542. #1184	4.00	1.00	3.00
543. #1185	4.00	1.00	3.00
544. #1261	4.00	1.00	3.00
545. #1262	4.00	1.00	3.00
546. #1263	4.00	1.00	3.00
547. #1297	4.00	1.00	3.00
548. #1379	4.00	1.00	3.00
549. #1614	4.00	1.00	3.00
550. #2053	4.00	1.00	3.00
551. #0484	3.00	.00	3.00
552. #1038	3.00	.00	3.00
553. #1050	3.00	.00	3.00
554. #1291	3.00	.00	3.00
555. #1355	3.00	.00	3.00
556. #0324	18.00	16.00	2.00
557. #0325	18.00	16.00	2.00
558. #1024	16.00	14.00	2.00
559. #0677	14.00	12.00	2.00
560. #0842	14.00	12.00	2.00
561. #0491	13.00	11.00	2.00
562. #0493	13.00	11.00	2.00
563. #0494	13.00	11.00	2.00
564. #0770	11.00	9.00	2.00
565. #0185	9.00	7.00	2.00
566. #0186	9.00	7.00	2.00
567. #0187	9.00	7.00	2.00
568. #0247	9.00	7.00	2.00
569. #0248	9.00	7.00	2.00
570. #0748	9.00	7.00	2.00
571. #0010	8.00	6.00	2.00
572. #0011	8.00	6.00	2.00
573. #0012	7.00	5.00	2.00
574. #0105	7.00	5.00	2.00
575. #0106	7.00	5.00	2.00
576. #0174	7.00	5.00	2.00
577. #1006	7.00	5.00	2.00
578. #1009	7.00	5.00	2.00
579. #2043	7.00	5.00	2.00
580. #0279	5.00	3.00	2.00
581. #1329	5.00	3.00	2.00
582. #0252	4.00	2.00	2.00
583. #0278	4.00	2.00	2.00
584. #0608	4.00	2.00	2.00
585. #0648	4.00	2.00	2.00
586. #0757	4.00	2.00	2.00
587. #0335	3.00	1.00	2.00
588. #0416	3.00	1.00	2.00
589. #0598	3.00	1.00	2.00
590. #0642	3.00	1.00	2.00

VITA

VITA

Bonnie Parnell Riechert is the eldest of three children of R. D. Parnell of Yorkville, Tennessee, and Evangeline Fulghum Parnell of Rosiclare, Illinois. She is the sixth of 12 grandchildren of the late Royal Dunlap Parnell and the late Virgie Williams Parnell of Gibson County, Tennessee; and the seventh of 14 grandchildren of the late John Raleigh Fulghum and the late Mattie Potts Fulghum of Pope County, Illinois. Bonnie Marie Parnell was born in Memphis, Tennessee, on May 28, 1951, and she was educated in the public schools of Memphis, Tennessee; Three Rivers and Mendon, Michigan; Plymouth, Indiana; Chattanooga, Tennessee; and Chelsea, Michigan; as well as Boyd-Buchanan School in Chattanooga. She was a 1969 honor graduate of Chelsea High School, Chelsea, Michigan. She attended Freed-Hardeman College (now University), Henderson, Tennessee, the summers of 1968 (as an early admission student) and 1969.

She worked as a free-lance writer in Hawthorne, California, and Greeneville, South Carolina, from 1969-71. From 1971-73 she was news editor of *The Eufaula Tribune* in Eufaula, Alabama. In 1974 she first attended the University of Georgia, where she met and married Arthur Manuel Riechert, Jr. From 1974-76 she was state news editor of *The Daily News* in Athens, Georgia. In 1978 she received her bachelor of arts degree in journalism from the University of Georgia, graduating *magna cum laude,* with an emphasis in news-editorial and a minor in social psychology.

Riechert worked in the Department of Agricultural Communications at the University of Georgia as a student writer from 1977-78 and then as science writer and news editor from 1978-82. Concurrently, she worked toward a master's degree in journalism, with emphasis in public relations and a minor in social psychology. At the University of Georgia she served on the university's Bicentennial Committee in 1981-82 as well as the Public Information Advisory Council (to the Vice President for Research) in 1980-82.

In 1982 she was appointed to a communications position with The University of Tennessee Agricultural Experiment Station, and in 1985 she was named Coordinator

of Communications for Agricultural Experiment Station. At The University of Tennessee (UT) she has served in a number of leadership positions. She served on the UT Institute of Agriculture's Advisory Council (elected by the faculty) in 1989-92 as as vice chair of the Advisory Council (elected by members of the council) in 1991-92. In the UT chapter of Gamma Sigma Delta she served as secretary 1988-91; president-elect in 1991-92; president, 1992-93; and immediate past president, 1993-94. In her term as president the chapter was named to receive both the international organization's Best Chapter Award and New Activities Award for 1992-93.

In the UT chapter of Phi Kappa Phi she has served as the public relations officer since 1991-92. She was selected to participate in the university's Institute for Leadership Effectiveness in Higher Education in 1993.

Riechert is an active member of the Society of Professional Journalists, having been initiated in the University of Georgia student chapter on November 26, 1979. She served as the East Tennessee chapter's board of directors in 1984-85 and 1988-90 as well as secretary in 1985-86; and second vice president, 1994-95. In 1984 she served as co-chair of the chapter's conference on Financial Journalism, and she was a co-recipient of the chapter's President's Award in 1985. She served as a chapter alternate delegate to the national convention in Atlanta in 1987 and as a chapter delegate to the national convention in Nashville in 1994. She chaired the chapter's nominating committees in 1986 and 1995. She was a member of the national organization's Professional Development Committee in 1986-87.

Since 1978 she has been an active member of the international Agricultural Communicators in Education, having served as vice chair and chair of its Research Technical Committee in 1981-82 and 1983-84; State Representative for Tennessee, 1984-86; Southern region program co-chair, 1985; vice president, 1986-87; president-elect, 1987-88; president, 1988-89; and immediate past president, 1989-90; member of its Board of Trustees, 1990-95; and journal manuscript reviewer, 1988-. She has served on organizational committees including the long-range planning committee in 1987-90, program committee for the 1983 annual meeting, and nominating committee in 1983 and again in 1989 as committee chair. She is the recipient of the

organization's 1984 Pioneer ACE Award and its 1985 Research Award of Merit, as well as awards for news writing and service to magazines.

Riechert is a member of several honor societies. She was initiated at the University of Georgia May 1, 1978, into the Honor Society of Phi Kappa Phi, which is interdisciplinary. She was initiated at the University of Georgia on May 24, 1978, into Kappa Tau Alpha, the nation's only honor society in mass communications with high scholastic requirements. She was initiated at The University of Tennessee on Nov. 13, 1986, into the Honor Society of Agriculture, Gamma Sigma Delta.

A co-recipient in 1989 of the Cavendar Award for Best Research Publication from the University of Tennessee Institute of Agriculture, Riechert also is the recipient of professional awards from the Society for Technical Communication, the International Association of Business Communicators, the Public Relations Society of America, and the Garden Writers Association of America.

Riechert has served on national committees of the Society of Professional Journalists, the American Agricultural Editors' Association, and the Experiment Station Committee on Organization and Policy. She served on the Advisory Council for the National Association of Extension Home Economists, as well as on two review teams for the USDA Cooperative State Research Service (now the Cooperative State Research, Education, and Extension Service). She is a member representative of the Council for Advancement and Support of Education.

Her professional memberships also include the Association for Education in Journalism and Mass Communication, the International Communication Association, and the American Association for Public Opinion Research.

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