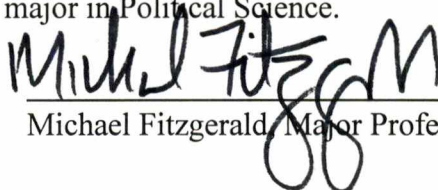
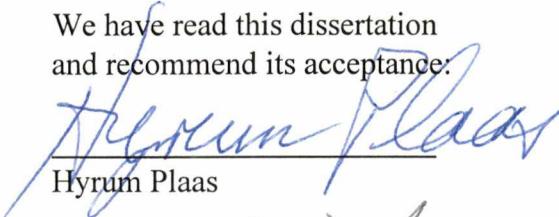


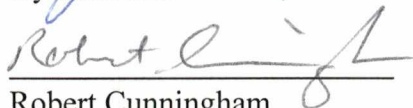
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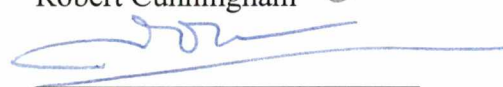
I am submitting herewith a dissertation written by Donald S. Gamiles entitled "Organizational Dynamics in the Environmental Era: A Study of the U.S. Army Corps of Engineers Jacksonville District's Incorporation of Environmental Policy into its Organizational Mission." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Political Science.


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ORGANIZATIONAL DYNAMICS IN THE ENVIRONMENTAL ERA

A Study of the U.S. Army Corps of Engineers Jacksonville District's
Incorporation of Environmental Policy into its Organizational Mission

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

Donald Stanley Gamiles
May 1998

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DEDICATION

This dissertation is dedicated to my parents

John and Margaret Gamiles

and

The people who have ever worked in a bureaucracy and wondered

why it acted the way it did

ACKNOWLEDGEMENTS

There are many people to whom I am grateful for the completion of this dissertation. I am particularly grateful to my Dissertation Committee: Mike Fitzgerald, Hyrum Plaas, Robert Cunningham and Tuan VoDinh for their support. The merit of this work is due in no small part to their suggestions.

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Finally a special acknowledgment goes out to the Heroes of the Everglades both inside and outside the Corps. Without their dreams, persistence and vision, there would not be an Everglades to study.

ABSTRACT

This study evaluates strategies employed by bureaucracies to mitigate organizational stress when faced with a hostile and changing organizational environment. Since the enactment of the National Environmental Protection Act in 1970, federal agencies such as the Atomic Energy Commission, the Tennessee Valley Authority, the Department of Interior, and the United States Army Corps of Engineers, have been under assault for the methods used in performing their organizational missions. These groups as well as many other public organizations have had to learn to adapt to the public's demand for environmental accountability, or face the prospect of a diminished organizational mission.

The study examines the case of the U.S. Army Corps of Engineer's Jacksonville District, and the strategies employed by the organization to adapt to the concern of the nation's populous in the area of environmental awareness. The focus on water management in South Florida is suited to meet the purposes of the study given the region's volatile and high spirited set of actors, and the extensive and long standing role the Jacksonville District has played in water resource management. The region with its many politically powerful and highly organized interests, presents the Corps with the Herculean task of performing a balancing act that meets the needs of the growing population in Florida, preserves the environment, and incorporates the needs of the politically powerful agricultural interests.

PREFACE

As a former employee of a number of large bureaucratic organizations, I often found myself wondering why organizations acted the way they do. Why do organizations pursue strategies that seem to ensure their decline? Why do organizations fail to see opportunities that may enhance their mission? Why do organizations fail to recognize that their environments have changed, and the things they did in the past are no longer relevant to the future? These questions as well as a great deal prodding from my advisor, Dr. Michael Fitzgerald, led me to develop the dissertation which is a study of how an organization can thrive by adapting to threats from their external environment. The dissertation is a case study of how the Corps of Engineers Jacksonville District faced down external threats from its environment and thrived. It is an example of how a public organization can succeed in turbulent times.

Chapter One provides a general overview of the study. Chapter Two provides a general overview of the models used in organizational research. Special focus will be placed on models that best represent and typify public organizations, and how they implement organizational change. Chapter Three frames the research by reviewing how the Corps of Engineers as an organization evolved over time. Chapter Four examines the impact of the Chief of Engineers Environmental Advisory Board (EAB) had on water resource policy in the Jacksonville District. Chapter Five traces the evolution of the Jacksonville District's civil works program from the 1960s to present as it relates to environmental issues. Special emphasis is placed on the examination of the restoration of the Kissimmee River. Chapter Six evaluates initiation of public relations

programs at the Jacksonville District and its inclusion of nonfederal stakeholders in the water resource management process. Special emphasis is placed on the initiation of the Central and South Florida Environmental Restoration Restudy. Chapter Seven examines the results of the case studies presented in Chapters Four through Six and draws conclusions and implications of the study.

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LIST OF ABBREVIATIONS

Corps	U.S. Army Corps of Engineers
CS&F	Central and South Florida Project
DER	Department of Environmental Regulation
EAA	Everglades Agricultural Area
EAB	Environmental Advisory Board
EIS	Environmental Impact Statement
ENP	Everglades National Park
EPA	Environmental Protection Agency
I/M	Information Management
NEPA	National Environmental Protection Act
NRDC	Natural Resource Defense Council
NWF	National Wildlife Federation
OCE	Office of the Chief Engineer
OD	Organizational Development
PCB	Polychlorinated biphenyls
ppb	Parts Per Billion

LIST OF ABBREVIATIONS (continued)

SWFMUD	South West Florida Water Management District
TVA	Tennessee Valley Authority
USACE	United States Army Corps of Engineers
WRDA-86	The Water Resources Development Act of 1986
WRDA-88	The Water Resources Development Act of 1988
WRDA-92	The Water Resources Development Act of 1992

CHAPTER I

DISSERTATION OVERVIEW

Beginning in the late 1960s, a growing environmental consciousness swept the nation which profoundly altered the way individuals viewed policies related to the environment. At the time state governments had primacy in the development and enforcement of environmental policy. This changed in the early 1970s when the federal government partially pre-empted the states by enacting legislation that set new standards for air and water quality. At the same time the federal presence in environmental management increased the government came under fire for not putting its own house in order. Federal agencies such as the Atomic Energy Commission, the Tennessee Valley Authority (TVA), the Department of Interior, and the United States Army Corps of Engineers (Corps), were singled out for performing their organizational missions at the expense of the environment. The pressure was especially unexpected and unique for the Corps of Engineers which up to this point maintained a positive relationship between its local constituencies and federal sponsors. The result was an organization with its organizational mission in peril.

The contemporary environmental movement is a unique phenomena in both its meteoric rise and sustainability. In the United States the modern environmental movement did not occur as a singularity, instead it had three distinct phases: the development of outdoor recreation, the protection of natural resources, and concern over toxic chemicals. The first movement came about as outdoor recreation grew in popularity. The economic boom generated in the post World War II era gave the

American population the resources to explore the nation's natural resources which in turn enhanced the public awareness of the environment. In 1958, Congress established the Outdoor Recreation Resources Review Commission to review issues concerning the outdoors. Recommendations ranged from developing open spaces in urban areas to expanding the national park system (Hays, 1987). The second movement occurred as concern for the protection of the environment became an issue. The key issue of the shift was the need to protect the environment for its own sake. Evidence of man's alteration of the environment including the destruction of wetlands, forests, and aquatic ecosystems, manifested itself in the federal government expanding its role in the regulation of the environment. During this period an impressive amount of legislation was enacted including: the National Environmental Protection Act (NEPA), the Clean Water Act, the Clean Air Act, and the Endangered Species Act (Clarke and McCool, 1996). Clearly the federal government had taken a more active role in the regulation of the environment. The final stage of environmental movement began in the early 1970s when concern over the disposal of toxic wastes became an issue. The discovery of chemicals such as polychlorinated biphenyls (PCBs) in the soil and groundwater of suburban areas such as Love Canal, New York, sparked outrage from the public. This resulted in the establishment of programs, such as Superfund, which set aside public funds to clean and rehabilitate these sites (Vig, 1994).

The increase in environmental concern by the populous also had a positive impact on environmental organizations which saw an enormous increase in membership. The Sierra Club and the Audubon Society alone had their membership ranks swell from

47,000 to over 200,000 members in the 1960s (Dunlap and Mertig, 1992). With the increase in membership came additional political clout which manifested itself in the form of a greater role in federal environmental policy:

The preferred tactical choice of the national environmental organization has been that of policy reform. To reform policy, the organizations engage in electoral campaigns, congressional and administrative lobbying, overseeing administrative decision making, and, when necessary, litigation. In all cases the national organizations are attempting to influence policy through traditional and legitimate channels, concentrating their efforts in Washington where Congress and federal agencies hold sway over environmental policies (Dunlap and Mertig, 1992: 20).

These organizations were bolstered by the slew of environmental legislation enacted by the federal government during the 1970s. Legislation such as the NEPA, the Clean Air Act, and the Clean Water Act, acted as a power catalyst for environmental groups that had the capability to force federal, state and local agencies to comply with the spirit of the law. Oftentimes the environmental organizations were able to use the courts to force agencies to broaden their interpretation of the applicable sections of the legislation to include environmental issues.

A classic case of this occurred in 1972, when the United States Army Corps of Engineers was sued over its interpretation of Section 404 of the Clean Water Act which tasked the Corps to regulate the discharge of dredge and fill material into the nation's waters. The Corps took a very narrow view of this task and stated that the regulatory program only was applicable to navigable waters. Two environmental organizations, the Natural Resource Defense Council (NRDC) and the National Wildlife Federation (NWF) brought suit against the Corps, charging that the organization's interpretation of the legislation was too narrow and should include all waters including wetlands. On

April 3, 1974, the courts sided with the environmental organizations and required the Corps to rewrite their Section 404 implementation plan to include all of the waterways in the United States (Stine, 1983).

The environmental groups also used the courts to stop federal agencies from performing their organizational missions that had potential impact on the environment. In the first nine years of NEPA's existence, there were over 1,000 lawsuits filed challenging federal agencies Environmental Impact Statements (EIS). This is roughly ten percent of the number of the EIS's filed by federal agencies. Even if the EIS's were found to be valid, projects were often delayed as crowded courts were unable to meet the demand of the increased work load brought about by the legislation (Taylor, 1984).

The other noteworthy element of the environmental movement has been its longevity and tenacity. The environmental movement used the Reagan Administration's attempt to limit the role of environmentalism at the federal level as a focus for its resurgence. From 1979 to 1983, the Sierra Club and the Audubon Society added over 350,000 members. Much of this is attributed to the public's desire for the enhanced federal role in environmental policy (Dunlap and Mertig, 1992).

Problem Statement

The dilemma the environmental movement posed to federal organizations lies in the need to gauge the magnitude and duration of the policy changes set forth by the Executive Branch through executive orders; the Congress through legislation; and the Courts through judicial rulings. The decision to change a public organization's mission

is not taken lightly. Administrators must not only ensure that legal and statutory requirements are met they also have to evaluate the impacts these changes have on the organization's core mission. In the case of the environmental movement agencies were given little time in which to react. As soon as environmental legislation was enacted environmental groups expected public agencies to both implement and integrate these policies into their organizations. Thus the agencies were left with the dilemma of having to assess the longevity and strength of the environmental movement in an extremely short time period. This combination made the adoption and implementation of environmental policy one of the greatest dilemmas of managing contemporary federal agencies:

How can the leaders of a public organization judge whether or not a policy change that impacts their organizational mission is long-term or short-term in nature, and how can they judge the magnitude of the change?

The Corps of Engineers

One organization that was hit particularly hard by this problem was the Corps of Engineers. The organization which had built a reputation as a world class water resource management organization came under fierce criticism for the methods employed in carrying out its mission. In many ways it epitomized an organization under siege. Facing a growing and empowered opposition to the method by which the Corps planned and implemented its civilian mission, the organization attempted to adjust to this new environment:

The people of the Corps realized that our job was to do what we always had done: do what the people of the country wanted. And if the people of the country were changing what they wanted, we'd better get in step and find a way to do it. (Clarke, 1979: 207).

These words of Lieutenant General Frederick Clarke, Chief of Engineers of the Corps, captures the essence of the attitude the Corps carried towards challenges to its civilian mission. It was an attitude of adaptation based on the organization's rich military history:

I think the Corps had an easier time of accommodating the environmental movement than some of the other agencies, maybe because the civil works side has still something of the military in it, that people do what they're told to do (Clarke, 1979: 207).

Early studies of the Corps attempt to alter its mission indicate some initial success. In particular, the Corps successfully opened its policy making decisions to include a greater emphasis on environmental impact associated with water resource planning (Mazmanian and Nienaber, 1984). In many areas of the country Corps officials receive praise for their environmental conciseness and willingness to go against the status quo by protecting the environment (Hinson, 1978; Moser, 1977). By any measure, the ability for such a large and well established bureaucracy to attempt this type of organizational change of this magnitude is itself remarkable.

Objectives of the Study

The ability of the United States Army Corps of Engineers to adapt to their changing environment did not occur by chance. The Corps set out to change both the internal mechanisms and the external environment related to their civilian mission of water

resource management. Their ability to make these adjustments provides insight into how public agencies can maintain an organizational status and identity by examining and adapting to their environment. The basic research questions associated with this study are:

1. How has the implementation of environmental legislation beginning with the passage of the National Environmental Policy Act (specifically Section 102(2)(c)) fundamentally changed the Corps of Engineer's implementation of their core mission of water resource management?
2. How have these changes affected the Corps of Engineers organizational mission?
3. How effectively have environmental issues been integrated into the water resource planning process, and is the process is more open?
4. What does the Corps' policy adjustments teach us about governance in a democratic society?

Research Study

To address these questions, this dissertation presents a holistic test case (single unit of analysis) focusing on the Corps' Jacksonville District's civilian works program (Yin, 1984). The case study examines three initiatives undertaken by the Corps of Engineers in response to the nation's changing attitudes towards the environment:

1. The development of an Environmental Advisory Board created by the Chief Engineer to provide policy guidance on environmental issues and their impact on South Florida's water resource management program.
2. The evolution of the District's civil works program from the 1960s to present as it relates to environmental issues.

3. The initiation of public relations programs at the Jacksonville District focusing on the inclusion of nonfederal stakeholders in the water resource management process.

The focus on water management in South Florida is suited to meet the purposes of the study given this region's volatile and high spirited set of actors interested in water resource management. This region with its many politically powerful and highly organized interests presents the Corps with the Herculean task of performing a balancing act that meets the needs of the growing population in Florida, preserves the environment, and incorporates the needs of the politically powerful agricultural interests.

Chapter Two provides a general overview of the models used in organizational research. Special focus will be placed on models that best represent and typify public organizations and how they implement organizational change. Chapter Three frames the research by reviewing how the Corps of Engineers as an organization evolved over time. Chapter Four examines the impact of the Chief of Engineers Environmental Advisory Board (EAB) had on water resource policy in the Jacksonville District. Chapter Five traces the evolution of the Jacksonville District's civil works program from the 1960s to present as it relates to environmental issues. Special emphasis is placed on the examination of the restoration of the Kissimmee River. Chapter Six evaluates initiation of public relations programs at the Jacksonville District, and its inclusion of nonfederal stakeholders in the water resource management process. Special emphasis is placed on the initiation of the Central and South Florida Environmental Restoration Restudy. Chapter Seven examines the results of the case

studies presented in Chapters Four through Six and draws conclusions and implications of the study.

CHAPTER II

ORGANIZATIONAL MODELS AND PUBLIC AGENCIES

Chapter Overview

This chapter provides the foundation for the research by developing a systematic method of studying organizations. The first section reviews the concept of organizational models. The second section describes and provides examples of open, closed, and hybrid organizations. The third section identifies the applicable organizational model for the Corps of Engineers as it relates to the study of organizational change. The final section summarizes the chapter and outlines Chapter III.

Organizational Models

At first glance, attempting to study large and diverse organizations such as the Corps of Engineers seems untenable. Bureaucratically the Corps is an enormous organization with multiple goals, tasks, and missions often in conflict with each other. Externally the Corps exists in an environment that includes political, economic, and constituent forces constantly attempting to influence the methods by which the organization functions. Conversely the Corps is representative of contemporary public organizations trying to exist in highly unstable environments typically encountered in our modern government. Thus finding a mechanism to evaluate how the Corps functions as an organization can broaden the understanding of contemporary bureaucracies. One epistemological vehicle

that can be employed to study complex organizations such as the Corps of Engineers involves the development of organizational models (Henry, 1992).

Lave and March provide a definition of a model as, "A simplified picture of the real world. It has some of the characteristics of the real world but not all of them. It is a set of interrelated guesses about the world (Lave and March, 1978)." Other definitions of models include a tentative definition that fits the data available about a particular object" (Henry, 1992) and "A simplified representation of reality" (Manheim and Rich, 1991).

What makes organizational models especially attractive is the fact that specific areas of interest can be emphasized and isolated. Once this has been performed these areas can then be examined and conclusions drawn. The specific elements of an organizational model needed for this study include: identifying the typology of the organization (open, closed, or hybrid), and evaluating the utility of the model to examine organizational change.

Central to the development and understanding of organizational models is the notion that their underpinnings are based on two pillars. First is a generic set of elements common to all organizations, second is the perspective and intent of the individuals generating the model. It is generally assumed by organizational theorists that formal organizations have the following elements:

1. They are purposeful, complex, human collectives.
2. They are characterized by impersonal relationships.
3. Have specialized and limited goals.

4. Have sustained cooperative activity.
5. Are integrated within larger social systems.
6. Provide services and products to their environment.
7. Organizations are dependent upon exchanges with their environment (Henry, 1992: 53).

It is the second pillar, the perspective and intent of the organizational theorist that gives the model its character. For example Chester Bernard posits a model of a formal organization as, "A system of consciously coordinated activities or forces of two or more persons" (Fry , 1989). Bernard's intention with this model is to take the seven elements of a formal organization and focus on the cooperation and coordination dynamics within organizations (Henry, 1992). Peter Szanton's focus on reorganizing the federal government incorporates an organizational model with three elements: structure (authorities and missions), resources (money and people), and processes (how organizations act) (Szanton, 1981). The focus of his model is directed towards the evaluation of the impact of reorganization on government agencies.

By and large the models developed by theorists interested in organizational theory fall into three broad categories; closed models, open models, and hybrid models (a combination of the open and closed model). Each of these models are intended to depict specific aspects of the organization, its components, and interaction with its

environment (Henry, 1992). Table 2.1¹ lists the key elements of the closed and open models of organizations with hybrids combining various elements of the two organization types (Burns and Stalker, 1961).

Closed Models of Organizations

In the early part of this century social scientists went to great pains to create organizational types and typologies based on single units of measure. This line of organizational theory began with Weber's view of bureaucracy, and the premise that the demarcation of the political and bureaucratic aspects of organizations is essential for the maximization of organizational efficiency (Weber, 1983). Weber's ideas were expanded and refined to include the "scientific management" model established by Fredrick Taylor and the "principles of administration" model contributed to by Gullick, Mooney, Rielly, Follet and Fayol. The perspective and intent of the individuals generating these models focused on developing an organization's optimal structure and work force, in a manner that maximized organizational efficiency. These models make up what is commonly termed the closed organizational model.

¹ Tables are listed in Appendix B

Scientific Management

Taylor's scientific management approach centered on the development of time and motion studies and attempted to optimize the relationship between workers and their environment:

The principal object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employ'e. . . . Maximum prosperity for each employ'e means not only higher wages than are usually received by men of his class, but, of more importance still, it also means the development of each man to his state of maximum efficiency, so that he may be able to do, generally speaking, the highest grade of work for which his natural abilities fit him, and it further means giving him, when possible, this class of work to do (Taylor, 1993: 9).

In this model management sets out to integrate worker and process together to achieve optimal performance. Work processes are broken into specific tasks and "time and motion" studies are performed. Once the optimal task formula is determined for a process, management then selects and trains individuals most qualified for the task.

Workers and tasks are then integrated into the organizational structure as one. Critics of Taylor are quick to point out the lack of "humanity" associated with his line of reasoning. With Taylor the perspective of management is: worker and machine are to be viewed as one, integrated into the organizational process, thus putting individual needs and preferences as secondary to organizational efficiency.

While Taylor was interested in the efficiency and productivity of workers, the researchers associated with the field of "administrative management" were developing theories to optimize the management structure within organizations. Mooney and Rielly who developed a number of universal "principles of administration" are

representative of researchers espousing this line of reasoning. The “principles” dealt with structural issues such as: span-of-control, unity of command, the scalar chain (organizational hierarchy), and the division of work (Henry, 1992).

Principles of Administration

According to Gullick, the principles of administration were assumed to be flexible enough to be used by any organization regardless of its goals, missions, and environment:

The problem of organization thus becomes the problem of building up between the executive of the center and the subdivisions of work on the periphery an effective network of communication and control. The following outline may serve further to define the problem:

1. Define the job to be done, such as the furnishing of pure water to all the people and industries within a given area at the lowest possible cost;
2. Provide a director to see that the objective is realized;
3. Determine the nature and number of individualized and specialized work units into which the job will be divided;
4. Establish and perfect the structure of authority between the director and the ultimate work divisions (Gullick, 1936: 7).

Like scientific management, researchers espousing the administrative management philosophy tended to accentuate organizational goals over those of the individual. As seen by Gullick’s ideas on developing an organization, organizational structure precludes any consideration of the humanistic elements associated with organizations.

In sum, what started out as an attempt to generalize how organizations function (Weber's view of bureaucracy) sprouted into two fields that applied these ideas to actual organizations ("scientific management" and "administrative management"). The common denominator for each of these theoretical lines was the premise that the primary organizational goal was to maximize efficiency. While these models were used extensively in the early 1900s, they eventually lost support. Their decline began in the 1940s, when social and economic events profoundly altered the role of government. With these changes came challenges to the closed models and the generation of a whole new line of thinking known as the open model of organizations.

The Transition Towards an Open Model of Organizations

Before the Great Depression and the emergence of the New Deal public organizations had missions and goals that were much simpler than those imposed on public organizations today. During this era using single criteria models may have had some utility. Beginning in the 1940s, challenges to the closed model began to emerge based on methodological, practical, and normative issues. These challenges were instrumental in the establishment of innovative views of organizations.

From a methodological standpoint Herbert Simon successfully challenged administrative management by demonstrating that the optimization of one principal of administration tended to minimize the utility of the others. For example administrative management theory argues that in order to have an efficient line of communication within an organization, it is best to have a narrow span of control. If an organization

applies this principal it will end up having a “tall” organizational structure with many levels of management. If this is the case, a conflict occurs with another widely accepted organizational principal that being organizations should be as “flat” as possible (few levels of management). Thus the principles of management dealing with span of control and organizational hierarchy are conflicting and of little use to applied organizational theory (Henry, 1992). In Simon’s own words, “the principles of administration are nothing more than ‘proverbs of administration’ (Simon, 1946).”

Other challenges towards the closed model came from both applied and normative standpoints where it was argued: Weber’s assumption of a politics/administration dichotomy was invalid; the use of efficiency as a measure of organization success was outdated; and the focus on organizational efficiency was misguided (Henry, 1992). One of the first public administration scholars to challenge the politics/administration dichotomy was Dwight Waldo. Waldo argued that separation of politics and administration in a bureaucracy was fine in theory but had little practical use. His argument was there will always be some decision in the administrative implementation of policy that requires the policy administrator to make political choices (Fry, 1989). Another argument against efficiency as an organizational measure came from the examination of the growth of social programs and the “wicked problems” they attempt to solve. With these problems, effective policy implementation becomes more important than efficient policy implementation (Harmon and Mayer, 1987). Finally from a purely normative standpoint a number of researchers argued that evaluating

organizations should focus on the individuals within the organization and the customers they serve not the organization itself.

The challenges to the closed model of organizations set in motion an effort to refocus on what exactly should be examined when developing an organizational model. The first of the two pillars defining organizational models remained the same. What changed was the perspective and intent of the individuals generating the model. What arose was a new focus on the individual, the role of the organization's task environment, and their impact on how organizations function.

Open Models of Organizations

As the field of organizational theory matured it became apparent that not all of the ideas and theories of the closed model led to the consequences predicted by its advocates. One aspect of the closed model that did occur was the establishment of the bureaucracy as the standard organizational structure in the industrialized world. Just as Weber hypothesized, many organizations gravitated towards a bureaucratic structure and subsequently became: bound by rules and regulations, developed a high degree of structure, promoted a focus on task specialization, and implemented a fixed chain of command (Henry, 1992). Along with these physical aspects of bureaucracies, Weber's prediction of the impact bureaucratic organizations would have on individuals also rang true. In particular, his prediction that the bureaucratic organization would, "limit individual freedom, render the individual incapable of understanding his own activities in relation to the organization as a whole, and favor the 'crippled personality' of the

specialist”, have all become common criticisms of bureaucratic organizations (Fry, 1989).

From an applied standpoint closed organizational models failed in their inability to address or overcome the negative impact the bureaucratic structure has on the individual. Gains made to improve efficiency by altering the internal structure of organizations were offset by the environmental conditions generated by the bureaucratic structure. Recognizing the inherent flaw of attempting to increase organizational efficiency by implementing “scientific management” or the “principles of administration” techniques did not occur by chance. In fact, what is known as the open model of organizations which emphasizes the importance of individual and group dynamics within organizations, has roots in research developed as part of the scientific management movement (Heffron, 1989).

Like the closed model, the open model of organizations can be divided into distinct subfields: the “human relations” model, the “organizational development” model, and the “organization in its environment” model. As with all organizational models, the key difference between these subfields lies in the various interests of their creators and the focus they attempt to bring to the field of organizational theory. Each model presents an effort by theorists to identify and quantify the variables associated with the dynamics of organizations.

The Human Relations Model

The human relations approach of examining organizations stems from research on human productivity performed by Elton Mayo at the Western Electric Company in the early 1930s (Fry, 1989). These experiments, evaluating the effects of various lighting conditions on worker productivity seem straightforward. Based on scientific management concepts, as lighting was dimmed in the work place (degrading the work environment), it was predicted that worker productivity would diminish. As lighting was increased (improving the work environment), there would be a corresponding increase in productivity. Contrary to what was hypothesized the researchers found that worker productivity increased regardless of the lighting level in the factory. These results were attributed to the subject's observation that they were participating in a research study. In essence the fact the workers knew they were participating in a unique project outside of the scope of their normal job provided the incentive to increase productivity.

The results of the research led Mayo to surmise that the Taylorian notion of increasing productivity was misguided. In particular, although internal organizational factors may have some impact on worker efficiency, the primary determinate of efficiency is the interaction between the worker and his fellow members of the organization (Henry, 1992). The studies undertaken by Mayo and his colleagues have become the centerpiece in what is known as the human relations model. This model as a field of research focuses on the relationships between individuals (both workers and

managers) in organizations. The human relations model has the greatest impact on public organizations in the area of job motivation and satisfaction (Henry, 1992).

An example of how human relations models relate job motivation to efficiency is Maslow's "Hierarchy of Human Needs" organization model. The model is based on the hypothesis that increasing the level of job satisfaction among employees will lead to an overall increase in organizational efficiency (Gibson and Teasley, 1973). The proposed methods of increasing job satisfaction are based on meeting the social and psychological needs of the individual (Heffron, 1989).

Maslow hypothesized that there are five levels of needs sought by individuals within an organization. These needs range from physiological and security needs (food, water, security), all the way to the state of "self actualization" (the individual doing what he is fitted for). The satisfaction of a lower need leaves an individual desiring the fulfillment of the next higher need. It is at the state of self-actualization in which the individual becomes totally associated with his job and efficiency is optimized (Maslow, 1991). According to Maslow, very few people ever reach the state of self-actualization, instead individuals tend to move into this state on rare occasions when they reach a "peak experience" within their job (Heffron, 1989). If Maslow's ideas hold true, then the leaders of organizations can increase organizational efficiency by implementing programs that assist workers in meeting and progressing upwards towards the higher level needs.

The primary criticism of Maslow's "hierarchy of needs model" is the lack of empirical data to support his theories (Wilcox, 1969). Much of this can be attributed to

the difficulty encountered in operationalizing Maslow's model, including identifying when an actual need has been satisfied (Heffron, 1989). In addition, it is often argued that the fulfillment of needs as hypothesized by Maslow runs counter to human nature, as stated by Wilcox:

In point of fact, man in the aggregate never has acted on Maslow's schema. True, when man's belly is filled with bread, new needs emerge -- for cake and ale. If it were otherwise, there would only be cloth coats, and no mink coats; Chevrolets but no Cadillacs; and no walnut waste baskets in offices, only utilitarian metal (Wilcox, 1969: 55).

Thus proponents of Maslow's theories are left with the dilemma of both attempting to quantify an individual's "needs" and justifying the model's departure from intuitive human response.

Far more destructive to the human relations model is the challenge that the link between increased job satisfaction and organizational efficiency is unfounded (Gibson and Teasley, 1973). These challenges, based on empirical studies of a variety of organizations, indicate the dynamics involved in meeting individual needs are far more complex than the generalizations put forth by the human relations model (Kahn, 1964). Although environmental and security needs are universally accepted as being highly important, the relevance of the higher level needs and their impact on efficiency are far less concrete. In many ways the human relations approach is much like the "principles of administration" approach of the closed model; fine in theory, but of little practical use.

Even though the human relations approach has been criticized on many fronts it did pave the way for the development of other organizational models based on the open

organization construct. One model that is directly linked to the human relations model is the Organizational Development (OD) model. The fundamental difference between these two models lie in the fact that the OD model goes beyond the focus of individual needs to include group interactions within the entire organization (Henry, 1992).

The Organizational Development Model

As with the human relations model, a primary goal of the OD intervention technique is the increase of organizational efficiency by focusing on the individual within the organization. Organizational Development is a method by which planned and control changes occur within an organization by altering the attitudes, behaviors, and actions of individuals making up the organization. Key elements of an OD effort include: they are planned, include the entire organization, are implemented in a top-down manner, and are intended to increase organizational efficiency. In addition the OD intervention almost always is facilitated and implemented by an outside consultant (Heffron, 1989).

Typically the intervention begins with an analysis of the organization by the OD interventionist. Information about the factors limiting organizational efficiency is gathered via surveys, personality tests, and other organizational performance indicators. Once the interventionist determines what factors are limiting the organization he then sets out to alter individual's behavior by exploring the role they play within the organization. This stage focuses on building better people within the organization. Once individuals have been refocused and made aware of their impact on others the interventionist begins building better work groups within the organization. This is

accomplished by encouraging team problem solving and working towards achieving common goals. Finally when the interventionist has the organization working towards reducing the conflict amongst the various groups within the organization, the organization should be functioning at optimal efficiency (Heffron, 1989).

By any measure proponents of OD model are the most outspoken about its benefits to contemporary organizational theory. Countless studies reveal that hundreds of OD-type interventions have taken place in both public and private organizations with almost universally positive impacts (Golembiewski, 1977). Despite the claims made by proponents of the OD model as to its effectiveness, it does have critics. For the most part critiques of the OD model focus on the normative aspects of OD interventions (Heffron, 1989). Of particular concern is the "molding" of individuals into the value laden constructs set forth by the OD practitioner. The question must be asked, what happens to the individuals within the organization who are unable to assimilate these new values? More succinctly as stated by Heffron, "Fredrick Taylor (scientific management) was satisfied if he could control the physical movements of workers; OD wants their hearts, souls, and minds (Heffron, 1989)."

The final subfield included in the open model of organizations, the "organization in its environment" model, takes a marked departure from both the humanist and organizational development lines of thought. The model is designed to examine organizational productivity as a function of an organization's task environment. Although task environment may have little impact on private organizations, it is

generally considered a key factor in shaping and molding public organizations (Henry, 1992).

The Organization in its Environment Model

As elaborated by Nicholas Henry the “organization in its environment” model is specifically geared towards understanding the public organization and its unique relation to external forces surrounding it:

Unlike private organizations, whose environment amounts to little more than the marketplace itself, public organizations must endure in an environment composed of far more complex, aggressive, and intrusive forces, among them politics, culture, law, economics, and organizational interdependencies not found in the corporate world (Henry, 1992: 62).

Henry’s statement not only highlights the importance of the environment as it pertains to public organizations it also presents an important demarcation between criteria for evaluating public and private organizations. Previously cited organizational models place a primary focus on the maximization of organizational efficiency by emphasizing internal factors such as organizational structure and personnel. With the “organization in its environment model” the focus on internal elements of the organization are no longer easily related to the external environment via measures such as efficiency. In fact efficiency as a measure of organizational success loses relevancy as public organizations merely try to adapt and survive in their unpredictable environment. Thus the maximization of efficiency often used to measure success within private organizations is at best a weak indicator of public organizational success.

The relationship between the public organization and its task environment can be illustrated many ways. Anthony Downs presents an example of how organizational hierarchy is dependent on the amount of uncertainty found in an organization's task environment. If an organization's activities are relatively stable and predictable in nature then the organization will tend to take on a "formal structure". Components of the organizational tasks in this environment can be divided up and given to specialists in a centralized organizational structure. Conversely if an organization's activities are unpredictable then the organization will take on an "informal structure". Tasks will be given to specialists who communicate along informal boundaries to perform their organizational tasks. These informal lines of communication result in a less defined organizational structure (Downs, 1967).

From an applied standpoint, Warwick identifies a number of cases in which executive and legislative actions have altered the traditional decision making process of agency officials. Warwick found that in examining the State Department, attempts by senior management to: eliminate administrative positions, reorganize departments, and coordinate tasks between agencies, could be blocked or modified by individuals outside of the organization. This was accomplished by individuals who opposed administrative decisions garnering support from politically appointed officials from both the legislative and executive branches of government who in turn influenced senior management's decision making process (Warwick, 1975).

Even though this model makes significant progress in providing a research focus for public organizations it has some inherent limitations. The most important limitation of

the model is the unrealistic assumption that real-world organizations have open organizational environments. The reason this assumption tends to be invalid is based on the fact that the bureaucratic organizational structure (representative of the closed model) has become a self-perpetuating organizational type (Smith, 1969). To maneuver around this difficulty a third category of organizational models which combines elements of the open and closed architecture has been developed.

The Transition Towards a Mixed Model of Organizations

Reconciling the inherent tension between the open model's humanistic approach and the closed model's bureaucratic environment seems to lead to the conclusion that organizational theory is severely limited by the implied constraints imparted by each school of thought. To navigate this impasse, it is important to recall that the utility of organizational models is to depict specific aspects of the organization, its components, and interactions with its environment. Thus there is no reason why an organizational model cannot be developed that utilizes the critical elements of both the open and closed models in a way that provides greater insight into the workings of organizations. It was this line of reasoning that led to the hybrid model of organizations which synthesizes various elements of the two models.

Hybrid Models of Organizations

The hybrid model of organizations, a relatively new conceptual platform from which to study organizations has roots in work performed by authors involved in the

development of the open model. According to Henry, the hybrid model of organizational theory is based on three assumptions: organizations and their environment can and do change, organizations and the people in them act to survive, and organizations and the people in them can and do learn from mistakes (Henry, 1992). These assumptions when applied to the construct of an organization behaving in the same manner as a biological organism striving to decrease the level of uncertainty in its environment, provides a unique basis by which public organizations can be modeled.

In his book, *Time, Chance and Organizations*, Herbert Kauffman captures the essence of the hybrid model:

My starting point is the premise that most of the organizations that die are done in by the interaction of two factors. One is the incessant change, the turbulence, of their environment. The other is their difficulty in adjusting to this volatility. The combination causes them resource problems that I believe are the principal explanations of organizational demise (Kauffman, 1985: 35).

With this model, the primary organizational task individuals take on involve altering both the organization's internal structure and external environment in a way that reduces organizational uncertainty (Henry, 1992). As explained by Kauffman, if an organization identifies internal sources of uncertainty they will attempt to minimize it by becoming more centralized. Possible actions include: controlling the flow of information, increasing the control over key areas, and indoctrinating personnel to act only towards the commands of the organization's leaders. In the case of an organization's mitigating uncertainty from its external

environment, the organization uses techniques such as co-optation to internalize the threat (Kauffman, 1985), which Selznick defines as:

Absorbing new elements into the leadership or policy determining structure of an organization as a means of averting threats to its stability or existence. . . . The significance of co-optation for organizational analysis is not simply that there is a change in or a broadening of leadership, and that there is an adaptive response, but also that this change is consequential for the character and role of the organization or governing body (Selznick, 1969: 13).

Once the threat is brought within the bounds of the organization, internal measures can then be employed to neutralize the uncertainty.

The seminal work associated with applying the hybrid model to actual organizations is Selznick's examination of how the Tennessee Valley Authority (TVA) attempted to minimize external organizational threats. These threats which came in the form of interest groups impacted by TVA policy challenging the organization, were mitigated by the process of co-optation. According to Selznick, the phenomena of co-optation was adopted by the TVA as a method of providing a more "democratic" approach towards implementing regional development programs under its sponsorship. Aided by the management philosophy within the TVA that local interest groups should be integrally involved in the agency's resource planning mission, the TVA was able to co-opt organizations associated with its primary missions: fertilizer evaluation, regional electricity distribution, and the rental of TVA owned lands. The goal of these efforts was to legitimize in the eyes of local interest groups as well as the leadership within TVA the role given to the organization by the federal government (Selznick, 1969).

Selznick found that in return for the mitigation of the external threat, the co-opting organization (in this case the TVA) adopted the policies espoused by the co-opted organization. Further analysis of the TVA case study indicate that local interest groups have gained considerable policy making power within the organization in both the establishment and continuance of organizational policy (Henry, 1992). Thus co-optation becomes a dynamic process in which both power and legitimacy are shared by the participants.

Examples of Hybrid Organizations

In their purest form an example of an open organization is a college university. Organizational elements that are typically associated with universities include; specialized knowledge is spread throughout the organization, prestige is found externally, and interaction between faculty members is horizontal in nature. This being the case even the most open organization will contain elements of the closed organization. For example, graduate students tend to perform routine tasks as part of their day to day duties, as do secretaries, administrators, and support personnel. Thus the organizational environment as seen by these individuals fits squarely with the closed model. But as implied by Lave and March's definition of a model, "Models are simplified pictures of the real world (Lave and March, 1978)", models by nature are not exact copies of the real world but approximations. Thus examining universities from the perspective of its faculty who make up the key personnel within the organization, it is clearly open in nature.

An example of a closed organization is the armed forces. These organizations are highly structured, interaction tends to be vertical in nature, and loyalty to the subunit is emphasized (Henry, 1992). Again like the open organization the closed organization can have elements that contradict the model. For example, although tasks are delegated through a fixed chain of command the implementation of a task is often left to the individual responsible for the work. Like the university and the open model; the armed forces is only approximated by the closed model. It represents the internal environment by which the organization performs its mission.

Whereas open and closed models vary in the elements that make up the organization, the two models share the type of research questions being studied. That is they are used to examine how organizations function internally. In the case of the hybrid organization the model puts less emphasis on the organizational elements (it can share elements of both the open and closed models), but draws its distinction in the focus of the research. In general, the research associated with the hybrid model pertains to how organizations interact with their environment. An example of an organization that fits this typology is Selznick's study of the Tennessee Valley Authority, and its attempt to deal with external interest groups (Henry, 1992).

In conclusion, all organizations contain elements that fit the open and closed typologies. This being the case the typology that is selected should be based on the essential organizational elements as well as the purpose of the study. The next section evaluates the specific organizational elements that make up the Corps civil works missions from the open, closed, and hybrid typologies.

The Corps of Engineers Organizational Typology

In order to identify the organizational typology for this study two aspects of the Corps must be examined. The first aspect is what type of internal environment does the Corps operate in when performing its organizational mission. The second aspect is what type of model is best suited for the research which examines organizational change. This section identifies the Corps' organizational elements, and integrates them with the objective of the study to generate the organizational typology that suits the research.

The Corps as an Open Organization

Many of the key elements that typify open organizations can be found in the Corps. For example the spirit of the Corps is found in its motto, *Essayons* (Let Us Try), which permeates the organizational mission. This motto and its application manifests itself throughout the organization as a common philosophy among the employees.

Additionally, the implementation of the Corps' civil works mission has recently undergone a transformation to an organizational structure that is open in nature. The transition occurred in 1988, with the implementation of the project management approach for civil works tasks. The approach replaced the structured hierarchical approach towards civil works projects with a matrix of specialists (Graves, 1997). In the same light information within the organization no longer flows just vertically and horizontally. Instead it flows in all directions. A case in point is the Jacksonville

District's information management system. The system links individuals within the District to: State of Florida Regulators, curious citizens, project sponsors, and Division and Headquarters personnel. Communication is truly boundless within the organization (Cobb, 1997). These organizational traits: a unified organizational identity, a matrix approach to problem solving, and information flow with no bounds, are definite traits that fit the open organization typology.

The Corps as a Closed Organization

As much as the Corps displays traits associated with the open organizational model, critical organizational elements also reflect a closed structure. For example although the Corps has institutionalized project management it still maintains the remnants of a hierarchical organizational structure. The organization uses project teams to perform its civil works mission, but individuals are supervised and evaluated based on traditional command-and-control organizational structures. In addition, prestige is internalized within the organization where job titles, educational types, and work divisions carry a great deal of weight within the organization. Individuals who have non-engineering degrees are limited to the number of senior positions in the organization which oftentimes have a "engineer only" job classification (Davis, 1997). Finally, the Corps as part of the United States military retains many of the elements that make the military a closed organization. The leaders of the districts, divisions, and headquarters are all active military and under the same rules that govern the armed forces. These organizational traits: a hierarchical organization structure, internalized prestige, and a

command and control leadership structure, are definite traits that fit the closed organization typology.

The Corps as a Hybrid Organization

Although some organizations have elements make them predominantly open or closed, the essential organizational elements of the Corps of Engineers which are listed in Table 2.2 and Table 2.3 are drawn from both models. Thus from the standpoint of organizational typology, the organization is best represented by the hybrid organizational model. The hybrid typology has utility for this study as the basic assumption associated with this model, is organizations and their environment are assumed to change (Henry, 1992). This model maximizes the critical organizational elements needed to describe and understand how organizational change impacted the Corps. Thus in the case of the Corps the hybrid model best represents the internal environment in which it performs its organizational mission. In addition the hybrid model has utility for examining how organizations adapt to external threats. These two factors make the hybrid model ideally suited for the research.

Chapter Conclusion

The development, growth, and sustainability of the Army Corps of Engineers hinges on its capability to adapt to the new goals and initiatives set forth by the environmentally conscious citizenry. How well the Corps is adapting to these changes can be examined using the hybrid organizational model. This model will broaden the

understanding of contemporary bureaucracies as conclusions drawn from examining how the Corps attempted to make institutional policies changes are expanded to represent how contemporary bureaucracies relate to changing organizational environments.

Chapter Three provides a framework to evaluate how the Corps fared in adapting to its environment by reviewing how the Corps of Engineers as an organization appeared before the implementation of change strategies occurred. Once this baseline has been established the various threats to the organization at both the district and national level will be examined. Finally a brief description of the methods employed by the Corps to mitigate the impacts of these changes on the organization and its traditional missions are presented.

CHAPTER III

THE CIVILIAN MISSION OF THE CORPS - ITS HISTORY, STRUCTURE, AND ORGANIZATIONAL MISSION

Chapter Overview

This chapter addresses the research questions of the dissertation by presenting the significant events, legislation, and activities that shaped the Corps' organizational mission at both the Headquarters and District levels since the 1960s. The first section provides an overview of the Corps of Engineers and a detailed description of its civilian missions; civil works, regulatory, and work for others. The second section traces the Corps' Headquarters implementation of its civilian missions from the 1960s to present. The third section provides a synopsis of the Corps' civilian missions as they evolved in the Jacksonville District. This section includes a primer on the Florida Everglades and the unique problems associated with its environmental restoration.

Overview of the Corps of Engineers

As seen in Table 3.1 the United States Army's Corps of Engineers is one of the few government agencies whose history can be traced back to the founding of the nation. The Corps came into existence on June 16, 1775, when General George Washington appointed Colonel Richard Gridely as Chief Engineer of the Continental Army. The primary mission of the organization was the construction and development of military installations and infrastructure. After the revolutionary war the Corps was disbanded for a short period of time and then re-established in the late 1700s to construct coastal

fortifications. In 1802, Congress established the United States Military Academy at West Point, New York, to help supply trained engineers to the Corps. The Corps continued to operate the academy until the beginning of the Civil War when it was turned over to the War Department (Girard and Peterson, 1994).

Although originally created to support the military in the late 1800s, the Corps became involved with civilian projects relating to civil works and regulatory issues:

The Civil Works mission of the United States Army Corps of Engineers is to promote prosperity and democracy, and to strengthen national security through the development, management, protection and enhancement of the Nation's water and related land resources for flood damage reduction, commercial navigation, environmental restoration, and applied purposes. The Corps provides responsible stewardship of its water resources infrastructure and the associated natural resources, and provides emergency services to the Nation for disaster relief. As part of the Civil Works mission, the Corps also provides planning, engineering, environmental, recreation, research, and real estate services to other Federal agencies and non-Federal customers, provides support to the Army in both peacetime pursuits and during national emergencies, and stands ready to adapt to evolving national needs and priorities. Through its regulatory program, the Corps plays a major role in the protection of the water of the United States, including wetlands (USACE, 1997c: 3).

The civil works mission deals with the development and maintenance of water resource management projects such as dams, levees, and canals. The second mission which is less known but is equally significant is the regulation of the nation's waters. This mission, initially limited to the modification of navigable waterways was expanded in 1974 to include all of the nation's waterways, including wetlands. Finally the Corps has taken on a relatively new mission dealing with "works for others." This mission allows Corps Districts to market their skills in the area of water management to private, public, and international organizations outside their traditional boundaries.

The Corps' highly decentralized organizational elements, which is seen in Figure 3.1², evolved from its military roots. The Office of Chief Engineers (OCE) at the top of the organization provides policy decisions, final project reviews, and acts as the liaison between congressional and presidential representatives. Regionally the Corps has divided the nation into nine divisional offices and thirty-seven district offices. The divisional offices supervise the actions of the district office, and act as liaison between the district offices and the OCE. At the district level planning, development, and implementation of resource management projects and the regulation of waterways takes place (Girard and Peterson, 1994).

The Civil Works Mission

The establishment of the Corps' civil works mission originated with the nation's desire to develop and grow. In the early 1800s, as Americans began to migrate West the Corps led the way. The Corps' frontier survey parties included Fremont's surveying of the Oregon Trail and the mapping of the routes for the continental railroads. Because travel by water was a critical mode of transportation part of the Corps mission was charting the nation's waters. In 1824, Congress gave the Corps additional responsibilities as it passed the Rivers and Harbors Act. This legislation tasked the Corps with the improvement of navigable waterways. One of the first projects the

²Figures are listed in Appendix A

Corps worked on was the navigational improvement of the Mississippi. The work performed by the Corps entailed removing obstructions such as fallen trees from the river. In 1850, this mission was expanded to include flood control using structural barriers such as dams, dikes, and levees. In 1899, the Corps' was charged with ensuring that the nation's waterways remained unobstructed by development activities. Finally in 1909 the Corps was given authority by Congress to create hydroelectric projects such as the development of the Tennessee Valley Authority in the South and the Bonneville Power Administration in the West. These projects gave the Corps primacy of water resource development for the nation.

Through the years project goals typically associated with water resource management included flood prevention, the generation of hydroelectric power, and the stabilization of water supplies to communities. These programs have been historically popular for a number of economic reasons. Development of land for agricultural use and hydroelectric power generate enormous local economic benefits. Politicians use water development projects to provide favors to local special interest groups by infusing federal funds into their home districts. Finally water development projects such as building dams and reservoirs can be used to develop local recreational facilities. The Corps parlayed their role as economic and political goodwill ambassadors into a highly stabile organizational platform. From this platform the Corps successfully perpetuated their primary civilian mission of water resource management. The Corps epitomized

the classic model of a well established bureaucracy with a strong political base and a wealthy clientele.

By the late 1960s a shift occurred as water resource development was impacted by both budgetary constraints and the environmental movement. According to Martin Ruess, Chief Environmental Historian for the Corps:

The traditional relationship that made up the iron triangle began to breakdown during the late 1960s. There were many factors that led to this occurring. Many of the Corps' key sponsors in Congress left office, fiscal constraints made it so various interest groups began competing with each other for scarce resources, the environmental movement put the brakes on new projects, and the individuals within the Corps who worked the Congress for funding retired (Ruess, 1998).

The most significant indication of the breakdown of the iron triangle relationship came when the funding mechanism for civil works became derailed in the early 1970s. Prior to this time civil works projects were proposed and funded on a biannual basis. The projects would be authorized in a water resources development act and then funded in an appropriations bill. Between 1970 and 1986 there was no significant federal water resource development legislation and the primary source of civil works projects had dried up. Although the Corps' civil works budget remained relatively constant it dropped in real terms as inflation skyrocketed. By 1984, for the first time outlays for civil works maintenance were greater than construction funding (Page, 1988).

By 1984, the Corps was actively attempting to re-establish a mechanism for routine civil works funding. As Robert Page, Assistant Secretary of the Army for Civil Works, testified before the Senate Subcommittee on Environment and Public Works:

The system was broken and a fix was urgently needed. The old way of doing business was clearly obsolete. The entire project development and

implementation process needed to be revised to respond to today's realities of budgetary constraints and at the same time make individual projects more cost effective and responsive to beneficiaries and sponsors through adoption of new financing and cost sharing rules and new user fees. This will lead to sound and optimal National infrastructure investment (Page, 1988: 2).

In 1986, the biannual appropriations process was re-instituted with a number of modifications. First, cost sharing between the Corps and partners was made a requirement for authorization of civil works projects. Second, the Corps revised the civil works process by instituting a project management approach geared towards speeding up the project cycle. Finally, the types of projects being authorized by Congress include environmental restoration projects such as the rehabilitation of Florida's Kissimmee River.

The ending of the iron-triangle relationship between the Corps, Congress, and interest groups marked a significant change in the direction of the Corps. Other shifts that occurred in the early 1970s included the expansion of the regulatory mission. With the passage of the Clean Water Act of 1972 the Corps obtained primacy over the modification of all waterways. The second shift occurred as the Corps' "work for others" program grew in significance. This program is geared towards marketing the Corps skill outside of their traditional work environment provided a needed boost in funding to compensate for the decline in the civil works mission.

The Regulatory Mission

The Corps of Engineers regulatory mission originated in the late 1800s, when the Corps was tasked with ensuring development activities did not interfere with

navigation. This power was given to the Corps under Section's 10 and 13 of the Rivers and Harbors Act of 1899, which prohibits the unauthorized obstruction or alteration of any navigable waters in the United States. The scope of the Corps' regulatory power at that time was specifically limited to modification of navigable waterways. No mention was made concerning environmental impacts of the modification of waterways or the inclusion of non-navigable waterways such as wetlands.

From time to time, the Corps moved beyond the strict interpretation of the Rivers and Harbors Act to include environmental problems. These exceptions came in the form of water quality assessments and assisting in the clean-up of environmental mishaps such as oil spills. Oftentimes the Corps' would assist in the cleanup of the pollution and then charge the offender. These efforts were solely based on threats to human health, not the destruction of the environment. The Corps estimated by 1969, they had issued up to 30,000 permit violations regarding pollution, and had been able to take action in over 3,000 of these cases (Cowdrey, 1975).

In the early 1960s, the court case of *United States v. Republic Steel* resulted in a re-interpretation of the Refuse Act and made it the most significant legal method of protecting the nation's waterways from pollution. The case involved a steel mill that was taking water from a navigable stream and returning it contaminated with particulate matter. The Corps sued Republic Steel on the basis the material being discharged into the stream was creating a shoal that the Corps had to dredge. The case, which made it all the way to the Supreme Court was ruled in favor of the Corps. But the majority opinion of the Court went much farther than what the Corps intended. In the final

ruling by the Supreme Court the following statement by Justice William O. Douglas was included:

We read the act of 1899 charitably, in light of the purpose to be served, a river is more than an amenity, it is a treasure and forbids a narrow cramped reading of Section 13 or of Section 10 (Cowdrey, 1975: 344).

The wording of the majority opinion went far beyond the case at hand, the decision basically broadened the Courts interpretation of the Refuse Act to include the regulation discharge of rivers and harbors based on environmental variables. The decision was reinforced six years later when the Court ruled in *United States v. Standard Oil Company* that the company had violated Section 13 of the Rivers and Harbors Act when it accidentally dumped airplane fuel in Florida's Saint Johns River. The ruling specifically stated that environmental damage due to pollution was covered under the act (Cowdrey, 1975).

In 1972, the Corps mission was significantly enhanced with the passage of the Federal Water Pollution Control Act Amendments. Specifically, Section 404 of this legislation tasks the Secretary of the Army to use the Corps of Engineers to: "issue or deny permits, after notice and opportunity for public hearings, for the discharge of dredged or fill material into United States waters (Wood and Hill, 1978)." The specific impact this had on the Corps was it expanded its regulatory mission from that of overseeing the modification of navigable waterways to all waterways in the United States. The legislation was a mixed blessing for the Corps. On one hand, it broadened its role by including non-navigable waters. On the hand, it took away the Corps power to regulate point source discharge and gave it to the Environmental Protection Agency.

The Work for Others Mission

Beginning in the 1960s, the Corps expanded its mission to include “works for others” and “support for others.” These two missions which differ only in the customers being served, involve the Corps lending its services to other government agencies, state and local governments, foreign countries, international organizations and private industry (USACE, 1997a). The organizational mission has roots in the Foreign Assistance Act of 1961 when the Corps was tasked with providing service and technical assistance to foreign governments. At the time the mission was secondary to the civil works mission.

These program has been especially fruitful for the Corps for a number of reasons. First, the programs are self supporting. Second, the programs help maintain a core competency for the organization in the area of civil works. Finally the programs have proved to be useful in maintaining a positive relationship with congress:

When Senator Daniel Patrick Moynihan of New York called the Corps “brain dead” in 1988 for its lack of support for a bill aimed at improving the nation’s aging infrastructure, General Hatch responded. The incoming chief of engineers stepped up his personal promotion of Corps’ involvement in infrastructure including the federal development of magnetic levitation technology (MAGLEV) for high-speed rail transport. In the chief’s view, Work for Other and Support for Others was the best way for the agency to survive in the uncertain fiscal times ahead (Graves, 1997: 68).

Although the Corps was under pressure from congress to expand its role outside of its civil works and regulatory missions, the Corps was under pressure from the executive branch to move cautiously. In particular Nancy Dorn, the Assistant Secretary of Civil

Works during the Reagan era, was opposed the Corps expanding its organizational missions outside of its traditional civil works and regulatory functions (Graves, 1997):

Dorn didn't have a philosophical problem with the Corps performing work for organizations that had a need and the resources to fund the work. What she didn't like was the Corps marketing their capabilities to foreign organizations. In her background was time spent at the State Department, and she felt that foreign business development was their job, not the Corps (Ruess, 1998).

Dorn effectively shut down the Corps from seeking outside work especially from foreign sources.

Dorn's successor, Secretary Lancaster, moved the Corps back in the direction of promoting its services and actively seeking outside business. The result has been a resurgence in the Corps solicitation of outside work, as stated in the Corps' Government Performance and Results Act Civil Works Strategic Plan:

The goal is to increase by at least 25% reimbursable support to the Department of Defense, other federal agencies, state and local governments and tribes, United States private sector, and foreign countries and international organizations through the support for others program and proactive outreach initiatives (USACE, 1997a:16)

Once again the Corps is using its skills on a global basis to enhance and protect its organizational mission.

Conclusion

In conclusion, the Corps of Engineers has three pillars associated with its civilian mission; civil works, regulatory, and work for others. Of these pillars the work for others mission is a direct extension of the skills developed as part of its civil works mission. Because the missions are funded separately there is no competition between

missions and no one mission is considered to be of more value than the others. Funding for new civil works projects began falling in the early 1970s and has continued to decline. The regulatory mission has remained stable since the early 1970s while “work for others” has continued to grow.

Up until the 1960s, the Corps performed these missions in a relatively stable environment. Beginning in the late 1960s, an environmental groundswell took place across the country that challenged the method by which the federal government managed environmental resources. The next section addresses the significant events, legislation, and organizational activities that shaped the Corps civilian organizational missions at the OCE level from the 1960s to present. This period is marked by organizational upheaval as the Corps under siege from the environmental movement developed a number of policy changes designed to mitigate threats to its civilian mission.

The Corps An Organization Under Siege

Prior to the environmental movement of the 1960s, water resource development issues centered on federalism vs. states rights. As such a great deal of time was spent debating the necessity of projects, who should fund them, and what organization should oversee the work. As with many government functions the economic depression of the 1920s and subsequent the New Deal, put the federal government squarely as the lead in water resource development. This in turn benefited the Corps as it became the

organization charged with implementing the federal government's water resource development goals.

The 1960s - Environmental Pressures

The first major external threat to the Corps' civilian mission came in the late 1960s when Senator Frank Moss introduced legislation intended to consolidate the federal organizations associated with water resource development into a Department of Natural Resources (Ruess, 1983). Although the bill failed, it demonstrated the presence of significant external pressure to change the method by which water resource development occurred. From the Judicial Branch the rhetoric was caustic, in a speech to the Sierra Club in 1968 and in a 1969 interview for *Playboy Magazine*, Supreme Court Justice William O. Douglas called the Corps of Engineers, "Public Enemy Number One" (Lear, 1971). Additionally, a number of books were published such as Gene Marine's, *America the Raped - The Engineering Mentality and Devastation of a Continent*, and Martin Heuvelmans', *The River Killers*, which documented the Corps dismal relationship with the environment. The acidic tone of these books is exemplified in Marine's description of the Corps' efforts to control Florida's water:

Nancy Maynard was the fourth person in three days to urge on me a flood-control map of central and southern Florida, showing in garish red and green the existing and proposed network of canals, levees, dams, pumping stations and control centers with which the Engineers are transforming all of the bottom of the state. To anyone who has ever so much as heard of the word ecology, the map is a horror. It is an uncaring and terrifying symbol of the triumph of the Engineers and the rape of America (Marine, 1972: 37).

Internally the Corps was also under siege for the way it performed its civilian mission. In 1963, an internal study by the Secretary of the Army Cyrus Vance yielded the following comment:

The current policies, procedures, organization, and staffing of the Corps of Engineers are not being fully adjusted to deal effectively with a much changed and continuously changing water resource environment (Ruess, 1983: 5).

Through these events the message was made clear that the Corps needed to become more environmentally conscious when addressing water resource development issues.

Any speculation as to whether the Corps would adopt and integrate environmental issues into its civil works mission was rendered moot with the passage of the National Environmental Policy Act (NEPA) in 1970. Among other things, NEPA required federal agencies to develop environmental impact assessments (EIS) for all projects having potential impact to the human environment:

The Congress authorizes and directs that, to the fullest extent possible, all agencies of the government shall:

Include in every recommendation or report on proposals for legislation or other major action significantly affecting the quality of the human environment, a detailed statement by the responsible official on:

1. The environmental impact of the proposed action,
2. Any adverse environmental effects which cannot be avoided should the proposal be implemented,
3. Alternatives to the proposed action,
4. The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
5. Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented (Taylor, 1984: 34).

This legislation had an additional impact on the Corps as all current civil works projects were grandfathered into NEPA thus requiring their own EIS. NEPA gave environmental organizations an additional stick as they used the courts to challenge the validity of the Corps environmental impact statements and through the appeal process tied up development projects indefinitely. As Bo Smith, Chief of Planning, Jacksonville District recalls:

Before NEPA, the typical approach to planning involved an Engineer going out to a site and visualizing how a project should be completed. He basically looked at the technical and structural aspects of the project. This approach died with NEPA, anyone who wanted to stop a project could challenge it in court arguing that the Environmental Impact Statement was inadequate (Smith, 1997b).

As early as the 1960s, environmental pressure began to mount on the Corps to address the environmental impacts of their civil works projects. As stated by General Clarke:

Every project the Corps had ever been engaged in had some objection to it, either by landowners involved or by environmental groups. I think it really started to build in the early 1960s. . . . The League of Women Voters was fairly critical. The Audubon Society. Then, you would find local groups organized throughout the country. . . . The main objection, I believe, were that most of the Corps projects took land which was valuable, and put it out of one use and put it into another use (Clark, 1979: 201).

Along with the environmental groups the Corps came under significant pressure from the federal government. In early 1970, President Nixon ordered the halting of the Cross Florida Barge Canal based on the projects environmental impact (Blake, 1980). This project was a mainstay in the Jacksonville District where the first survey of the project occurring in 1826. Congressional criticism of the Corps included pressure from Representative Henry Reuss, Chairman of the Conservation and National Resources

Subcommittee of the House Government Operations Committee. Reuss was particularly incensed that the Corps continued to ignore the courts expansion of the Rivers and Harbors Act's scope to include the discharge of pollution. Reuss issued a report that included recommendations that the Corps require the issuance of permits for the discharge material into the nation's waterways. Although the Corps took the report under advisement no tangible action was taken. Reuss did not give up, accusing the Corps of "disgraceful behavior in their narrow interpretation of the 1899 Refuse Act (Ruess, 1983)." Bowing to pressure the Corps announced that permits would be required for the discharge of material into the nation's navigable waters.

Deciding to take the offensive the Chief of Engineers, Lieutenant General Frederick J. Clarke, decided to realign his agency in a way that would address environmental issues associated with the Corps' civilian missions. Clarke issued a set of environmental policy guidelines addressing how the Corps would integrate environmental issues into the project planning process (Mazmanian and Nienaber, 1984). These guidelines contained the following goals:

1. Preserve unique and important ecological, aesthetic, and cultural values of our national heritage.
2. Conserve and use wisely the natural resources of our Nation for the benefit of present and future generations.
3. Enhance, maintain, and restore the natural and manmade environment in terms of its productivity, variety spaciousness, beauty, and other measure of quality.
4. Create new opportunities for the American people to use and enjoy their environment (Ruess, 1983: 11).

Additionally, the Chief Engineer created an Environmental Advisory Board (EAB) to provide guidance on policy, programs, and problems associated with environmental issues. The Board, established on April 2, 1970, was made up of six members of the environmental establishment, many of whom had been openly critical of the methods the Corps used in performing their civil works mission. The Board was tasked by the Chief of Engineers, Fredrick Clark to perform the following functions:

1. Examine existing and proposed policies, programs and activities from an environmental point of view to define problems and weaknesses and suggest remedies.
2. Advise on how the Corps can improve its relations with the conservation community and the general public, i.e., close the credibility gap.
3. Review problems or issues pertinent to specific plans or projects
4. View the responsibilities within the context of the present and the future, rather than dwell on past mistakes (Ruess, 1983: 7).

According to Ruess, "the creation of the EAB, at a time when the Corps was under fire from a wide range of critics, reflected the Corps' determination to listen and respond constructively to its opponents" (Ruess, 1983). These critics including the environmental groups; President Nixon; congressional leaders; and Supreme Court Justice William Douglas were far from satisfied. The Corps would have to demonstrate its responsiveness to environmental concerns. The pressure to force the Corps to address these issues had just begun.

The 1970s - The Corps as the Reluctant Regulator

With the passage of the Clean Water Act in 1972, the Corps also found itself in an unwanted role as regulator of the nation's wetlands. Section 404 of the legislation tasked the Corps to regulate the discharge of dredge and fill material into the nation's waters including wetlands (Stine, 1983). The significance of this legislation lies in the fact it expanded the Corps' regulatory program beyond their traditional boundaries of navigable waters and was hailed by environmentalists and Congress as an opportunity to demonstrate the Corps' new environmental sensitivity (Wood, 1978). Many individuals within the Corps including General McIntyre, the Deputy Director of Civil Works, felt that the mission expansion conflicted with the organization's civil works mission which included the promotion of economic development (Stine, 1983).

The Corps fought this mission expansion by issuing a general guidance that stated the enforcement of the 404 program would be limited to navigable waters. When this was announced two environmental organizations, the Natural Resource Defense Council (NRDC) and the National Wildlife Federation (NWF) brought suit against the Corps, charging that the organization was not implementing the Section 404 program in accordance to the law. On April 3, 1974, the courts sided with the environmental organizations and required the Corps to rewrite their Section 404 implementation plan to include all of the waterways in the United States (Stine, 1983).

Although the Corps took the decision in stride and re-issued their regulations in 1975, there was still considerable opposition within the OCE for the expanded regulatory role. This sentiment came to a head when the Deputy Director of Civil

Works directed the Office of Public Affairs to issue a press release describing potential scenarios associated with the expanded 404 program. Issues such as the Corps requiring permits for farmers to modify drainage ditches were included in the press release. The resulting uproar from Congress, environmentalists, and the general citizenry over the press release, significantly impacted the Corps effort to portray themselves as environmentally conscious (Stine, 1983).

The 1980s - Cost Sharing and Project Management

While the Corps was fighting to preserve its organizational mission in the courts it came under attack from the Executive Branch and the Reagan Administration's agenda for a smaller federal government. Specifically, the Corps was caught in a squeeze as it attempted to: generate new civil works projects, maintain the projects it currently oversaw, and battle the budget constraints imposed by the Reagan Administration. The culmination of this conflict came with the passage of the Water Resource Development Act of 1986 (WRDA-86). This legislation introduced the concept of cost-sharing of new development projects (Ruess, 1991). The idea was to shift at least a portion of the project costs to non-federal stakeholders including: port authorities, communities, and the states. The impact this legislation had on the Corps' civil works mission was significant as sponsors such Florida's water management districts are subject to both state and federal environmental regulations. The co-sponsor's funding often carries a heavier burden to address the environmental impacts of the project. As stated by Stuart Applebaum, Chief of the Jacksonville District Ecosystem Restoration Branch:

If a contributing sponsor had an environmental agenda, and was putting money or resources into the project, then the Corps was forced to look at the environmental aspects of the project (Applebaum, 1997b).

The 1980s were not only significant for the shift in the method by which Corps projects were funded but also how they were implemented. A new way of doing business known as project management, was instituted to integrate approach to project planning, execution, and maintenance. Traditionally civil works projects started at the planning division, then moved to the engineering and construction divisions within a district, and finally up the chain-of-command. Project management differs from this approach by utilizing project teams that work on the task from start to finish. Team members are chosen from various branches including; engineering, environmental, real-estate, public relations and archeology, provide input from start to finish. This new method also included a streamlined review process at the district, division, and headquarters level of the organization (Graves, 1997). These changes in the Corps approach in their civil works mission, altered the internal dynamics of the organization as the environmental and regulatory specialists who were often left out of the planning process were able to ensure issues such as the environmental impacts of a project are considered at the outset.

The 1990s -The New Vision

By the end of the 1980s, the Corps had undergone a tremendous change in the method and funding of its organizational missions. Through all of these events the relentless pressure for an environmentally responsive Corps never ceased. What

changed at the end of the 1980s, beginning with the Bush presidency was an organizational shift within the Corps to use the environmental movement to its advantage. Specifically, pro-environmental individuals within the Corps exploited Bush's campaign theme of being the "environmental president" to realign the organization towards embracing environmental issues, as stated by Mike Davis, Deputy Assistant Secretary of the Army for Civil Works:

President Bush ran on the platform as the environmental president. People within the Corps took Bush at his word and aggressively pursued a major policy shift to change the organization. General Henry Hatch, the Chief Engineer and Assistant Secretary Page put together a small staff to look for environmental projects as part of a national wetlands restoration program. The program was killed at the federal level but it set a precedence for how the Corps was changing the focus on its projects (Davis, 1997).

At the time, the Chief Engineer, General Henry Hatch did not have a specific goal of integrating environmental restoration into the Corps organizational mission. As Hatch points out when asked about what his goals were coming into the position of Chief Engineer:

The environment really was not something that got major play, this happened in 1989 after the Bush administration came in. . . . A moment in time in which the environmental piece really came home to me as something of greater emphasis was a speech I gave to a local ASCE chapter in I believe, February, 1989 in which believe it or not, while actually delivering the talk, a new thought at least for me on the application of the Corps' and the nation's engineering talents to solve environmental problems. And the need for partnerships between environmentalists and engineers and all this sort of stuff (Hatch, 1991: 3).

The changes introduced during the Bush Presidency have since been cemented during the Clinton Era. During this time, the Corps won respect for their capability to assist communities to rebuild after natural disasters such as Hurricane Andrew. They

also became responsive to environmental projects such as the rehabilitation of the Kissimmee River. Today close to 20% of the Corps civil works budget is geared towards environmental restoration activities (Davis, 1997). The message of just how important environmental restoration of the Florida Everglades was made clear to Jacksonville's incoming District Engineer, Colonel Miller, who was told by senior administration officials, "The restoration of the Everglades and the restudy are the number one priority of the Corps, and as goes Jacksonville, so goes the future of the Corps" (Miller, 1997).

Conclusion

The evolution of environmental policy from the 1960s to present has profoundly altered the structure, mission, and environment of the Corps of Engineers. Once considered to be an organization with a highly guarded and stable organizational niche, the Corps used its role as the nation's principal water resource development and management agency as an organizational anchor (Girard and Peterson, 1994; Heffron, 1989). But with the onslaught of legal, administrative, and legislative threats to the organization's mission it had to react. Nowhere was this change more needed than in Florida where the state was a ticking time bomb for the organization. With an increasing human population, extensive agricultural interests, and the Florida Everglades, the water resource environment was unsustainable. The next section tracks the evolution of water resource policy from a different view that of the Corps' Jacksonville District. Two elements of the District covering the State of Florida, Puerto

Rico, and the Virgin Islands will be presented. First, is an overview of the Florida Everglades and its environmental and ecosystem restoration challenges. Second, is a description of the external events, legislation, and organizational activities that shaped the Jacksonville District's civilian organizational mission.

The Florida Everglades

Florida is home to the Everglades; known for its marshes, shallow prairies of saw grass, and diverse animal species is one of America's crown jewels. With an age of approximately 5,000 years the Everglades are a unique ecosystem. The key element for their survival is a consistent source of clean, pure water. Without water the Everglades would take the form of the deserts that make up the land seen on various continents at the same latitude (Heuvelmans, 1974). Although the Everglades look like a stagnant body of water it is actually an enormous river. It takes almost two years for water to travel from the headwaters of the Everglades, Lake Okeechobee to both the Atlantic Ocean and the Gulf of Mexico. The low salinity gradient between its freshwater headlands and the salty ocean produces an environment in which creatures can develop in the specific habitat needed for their growth. If an animal in its early development stage needs water that is highly saline it can migrate closer to the ocean. Conversely if it requires a less saline environment, all it has to do is move inland. The Everglades water supply tends to follow a multi-year water level cycle. This cycle is critical as certain animals (mostly water fowl), reproduce based upon the water level in the

Everglades. These two factors, the salinity gradient and water level provide the key determinants of the health of the Florida Everglades ecosystem (Heuvelmans, 1974).

Up to the 1920s, the water in the Everglades flowed in its pristine state. The problem this created was large portions Florida tended to flood during the rainy season and hurricanes. During the period from 1920 to 1940 the Corps undertook a number of projects designed to eliminate the threat of flooding in Florida culminating in Congress appropriating funding for the Central and South Florida Project for Flood Control and Other Purposes (DeWitt, 1994). This project, considered to be the state-of-the-art in water management has proven to be one of the most commonly sighted examples of the Corps desire for economic development at the expense of the environment (DeWitt, 1994; Heuvelmans, 1974; Marine, 1972; Morgan, 1971). Flood control took the form of building canals around Lake Okeechobee (over 1,400 miles by 1960) and the channeling of the Kissimmee River. The projects at the headwaters of the Everglades significantly altered the normal migratory water patterns of the Everglades and seriously disrupted the ecological balance.

The 1960s - Protecting the Park

During the same period the government was intervening with flood control programs a grass roots effort was afoot to keep at least a portion of the Everglades in its primordial form. This effort was initiated and sustained by a number of hard-core environmentalists who often fought futile battles attempting to insert environmental policy into the water resource planning process (Heuvelmans, 1974). The

environmentalists first true victory came after the publishing of *The Everglades: River of Grass*, by Marjory Stoneman Douglas. Although the book never directly implicated the Corps in the destruction of the Everglades, it attributed man's encroachment on the Everglades and his desire to channel and dam the system, as the primary reason for its demise. In 1948, Congress responding to public pressure created the Everglades National Park located at the Southern tip of Florida (DeWitt, 1994).

The environmentalists did not stop with the establishment of the park. Understanding the park was dependent on water from outside its boundaries the environmental groups continued to fight development activities that threatened these water supplies. Support for environmental protection also increased as the demographic patterns in the state began to shift. Specifically the creation of theme parks such as Disney World in Orlando, Florida resulted in a rise in urbanization that added a new constituent base to the environmental movement. In 1969, environmentalists used this base to successfully stop the development of a jetport at the northern boundary of the Everglades National Park. The jetport, which was supposed to serve the greater Miami area would have included the widening of access roads cutting through the park. Local citizen support was increased as the environmental interest group Friends of the Everglades, (which individuals could join for one dollar) galvanized support against the project (Stamper, 1993).

The 1970s - Stemming the Tide of Development

Not only were environmental organizations able to halt new development projects they were highly effective in stopping existing ones. One of the most significant projects that was brought to a halt by environmental concerns was the Cross Florida Barge Canal (Buker, 1997b). Justification for the canal which was originally proposed in the 1930s ranged from military (World War II) to economic (easier transportation of goods). In 1971, the environmentalists scored two victories over the Corps and pro-development groups. The first was an injunction ordering the Corps to cease any construction work on the canal because irreparable injury may occur to Florida's swamps. The second victory occurred when President Nixon ordered the Corps to halt work on the project to prevent potentially serious environmental damage (Blake, 1980). The Corps image as environmentally sensitive were not served when the Jacksonville District Engineer opined that Nixon's decision to halt construction was a "bum decision" (Ruess, 1983).

For the Jacksonville District the remainder of the 1970s was spent battling the environmentalists, state officials, and local interests over projects such as the development of Marcos Island, the Corps' dredging program, and the restoration of the Kissimmee River. The period represented a growing resolve by local interests to play a more active role in Florida's water resource development and a growing impatience for change. The following comments came after the Jacksonville District held a public outreach meeting:

We got together in our first workshop and had people from all different segments sitting there. We started the evening listening to a farmer tell about the need for agriculture. . . . A developer got up and talked about the capability of building developments without doing any real environmental harm and therefore, what's the problem? These things are marginal and disturbed anyways. Then a young man from some environmental organization got up and he was really angry with me. "Colonel Adams [Jacksonville's District Engineer]," he says, "I'm very angry with you because you told us that this was going to be open to the public and we were going to hear from the public and all I've heard from is farmers and developers and" -- to him those were not members of the public and we were not being good to our word (Adams, 1981: 9).

Not only did the environmentalists carry the view that the Corps was anti-environment, Florida's regulators also saw it that way. The feeling arose over a conflict between the state and the Corps over the renewal of dredging permits. The conflict made it all the way to Congress:

Victoria Tschinkel, secretary of Florida's Department of Environmental Regulations (DER), saw the struggle between the state and the Jacksonville District differently. . . . She thought that when Colonel Adams became district engineer he did not like going to the state for permits to do his dredging. He also displayed a combative attitude that antagonized many of the state regulators. Tschinkel became secretary of the DER during Adam's last year as district engineer. She recalled that on becoming secretary she went to Washington to visit the Florida congressional delegation. She wanted to talk about several issues, including the district's permitting problems. As she saw the crisis, it was the failure of the two organizations to talk to each other. She found out later that Colonel Adams called upon the delegation to present his view before the visit. The result was, according to her, that the delegates expressed hostility from the moment she met them (1997b: 17)

Clearly the Corps continued to demonstrate an attitude that was at best inflammatory toward the groups that were concerned about the environment.

The 1980s - The State to the Rescue

During the 1980s when the federal presence in water resource management was decreasing the State stepped in to pick up the slack. As seen in Table 3.2, a number of legislative initiatives were undertaken to first recognize the complexity of the Everglades, and then coordinate the various regional agencies responsible for water resource management in a way that produced a holistic solution to their restoration. This effort proved to be a major victory for the environmental movement in Florida. Key initiatives such as the Governor's, Save Our Everglades program, provided a political and legal base to develop long-term safeguards for the Everglades water supply.

An example of the State's continued drive to have a greater stake in its water resource management is the restoration of the Kissimmee River. The Kissimmee, one of the primary sources of water to Lake Okeechobee, was altered in the early 1950s to control its flooding, and make it more navigable. The tasks undertaken by the Corps to tame the river included channeling the river with a series of canals and levees that transformed it from a rivers with oxbows and bends to one that was relatively straight. The environmental impact of this effort resulted in a diminished water quality for the entire region. Before the channeling took place the slow moving, meandering river, provided a buffer from the nutrient rich runoff from dairy farms making it into lake Okeechobee. When the river was altered the nutrient rich water had a straight shot into the lake which resulted in large algae blooms erupting. The runoff eventually made it down to the Everglades where it once again knocked the local ecology out of balance.

Although the Corps generated a number of studies evaluating the potential of restoring the Kissimmee to its natural form the projects were rejected as they failed to meet a sufficient cost-benefit ratio to warrant their implementation. In 1986, the Water Resource Development Act, contained a program for projects demonstrating the use of non-conventional methods for the restoration of waterways to their pre-developed states. Environmental organizations such as the Audubon Society teamed up with the State of Florida to receive a portion of these funds to perform a test program for restoring the Kissimmee. This work was of particular interest to Governor Robert Graham who made the Kissimmee restoration a centerpiece of his environmental policy. Again the Corps was reluctant to participate as the goal of this project was to undo a fully functional Corps structure.

The 1990s - The Everglades Reborn

As the 1980s marked the period when the State of Florida took a greater role over water resource development, the 1990s can be described as the era when the federal government made the environmental restoration of Florida a top political issue. This occurred as the Clinton administration, Vice President Gore in particular, made Florida's environmental restoration a key issue. The Clinton Administration championed the proposal for the continued restoration of the Kissimmee river and for a complete restudy of Central and South Florida's water development. As part of this effort the federal government generated a Memorandum of Understanding between the seven federal organizations currently involved with Florida's water management. The

group headed by Secretary of the Interior, Bruce Babbitt, is tasked with coordinating the federal presence in the environmental restoration of Florida. In 1993, the State of Florida created the Governor's Commission for a Sustainable South Florida to ensure that State, local, and tribal organizations also had a unified presence in Florida's water resource development. In 1993, the federal and state committees achieved a joint presence with the establishment of the South Florida Ecosystem Restoration Task Force. The group described as a consortium of institutions and individuals working cooperatively in restoring and maintaining the South Florida ecosystem at sustainable levels, has a proposed mission statement that includes:

To continuously promote cooperation in research, management, information sharing and policy among all parties involved in restoration and management activities. It carries out its mission by sponsoring and being involved in cooperative projects, advocating for ways to increase efficiency and effectiveness through cooperation, and by facilitating improved cooperation among institutions when appropriate (USACE, 1995: 1).

As the federal presence in Florida's water resource management reestablished itself so did the active participation of the Corps. The Corps is currently responsible for the generation of the Central and South Florida Restudy, and has working members on all three of the organizations looking at Florida's environmental restoration. The Corps presence once again has been dictated by the development of tasks through the Water Resource Development Acts and the subsequent appropriation of funding by Congress.

Conclusion

Today the Corps involvement in Florida's water resource management reflects the political, regulatory, environmental, and local interests towards the re-establishment of the primeval South Florida Everglades. The Jacksonville Army Corps of Engineers internet homepage describes itself as heading one of the most aggressive environmental restoration program in the world (USACE, 1995). Included in this effort are the restoration of the Upper Saint Johns River, the Kissimmee River and the Florida Everglades. Much of this effort is attributed to the Federal Water Resources Development Act of 1992 which directs the Chief of Engineers to:

Review the report of the Chief of Engineers on central and southern Florida, published as House document 643; 80th Congress, 2nd session, and other pertinent reports, with a view of determining whether modifications to the existing project are advisable at the present time due to significantly changed physical, biological, demographic, or economic condition (USACE, 1995: 1).

The significance of this legislation was made clear to the Colonel Miller, the current Chief Engineer as he was told by the Deputy Assistant Secretary of the Army for Civil Works that the restudy effort is the number one priority for the Corps and the fate of the organization resides on this effort (Miller, 1997). The next section traces the history of the Jacksonville District from the 1960s to present with an evaluation of the external events, legislation, and organizational activities that shaped the District's organizational mission.

The Jacksonville District

Before NEPA, the Jacksonville District performed its civilian mission in the same manner as other districts. The district operated by obtaining political support for development projects, getting funding, and supporting local interests. Although the debate on the environmental impacts created by Corps' projects was intense, the organization could hide behind the fact environment impacts were not included in the benefit to cost ratio for civil works projects. Thus there was no statutory reason to consider environmental impacts. The Jacksonville District existed in a stable organizational environment that allowed it to perpetuate its organizational mission.

The Jacksonville District in the 1960s

Even before environmental restoration became an issue with the Corps' Headquarters, the Jacksonville District took a lead role focusing on environmental consequences of its water resource management programs. The result of this leadership role was a series of precedent setting legal decisions involving water resource management. The first of these occurred in the late 1960s with the case of *Zable v. Tabb*. The case centered around the development firm of Zabel and Russel, and their desire to perform a dredge and fill operation in Boca Ciega Bay. Operations of this nature require approval from the Corps which reviews these projects for possible obstruction of the nation's navigable waterways. Upon submittal of the permit the Jacksonville District Engineer, Colonel Robert Tabb decided to deny their request based on the fact the project disrupted the local aquatic system (Stine, 1983). What made this

decision unique was the fact that no permit had ever been denied based on the project's environmental impact. Zable and Russel sued the Corps' arguing that permits could only be denied based on its hindrance of navigable waters. The courts sided with the Corps of Engineers, and in its decision stated the evaluation of water resource development permits should take into account all relevant factors including; navigation, fish and wildlife, conservation, pollution, aesthetics, ecology and the general public interest (Stine, 1983).

A second case involving the Jacksonville District in the 1970s demonstrated the Corps' determination to stop land use developers from subverting the development permit process. The case involved a developer by the name of Joseph Moretti who purchased land in 1969 on the Florida Bay, and proceeded to fill wetlands in hope of developing a trailer park. In December of 1970, the District Engineer learned of the fact that illegal dredging was occurring, and told Moretti to cease any activity of this nature until he submitted a permit application to the Corps. While waiting for the permit to be granted, Moretti resumed his dredge and fill operation. Based on these actions federal officials arrested Moretti for criminally violating Section 10 of the Rivers and Harbors Act of 1899, and served him with a civil complaint to restore the wetlands to their original condition. Moretti appealed, the courts sided with the government, forcing Moretti to restore the wetlands to their original condition. The Corps then denied his permit application favoring wetlands protection over housing development (Wood and Hill, 1978). These episodes clearly indicate that the Jacksonville District was beginning to take its mission as protector of the wetlands seriously as early as the late 1960s.

The Jacksonville District in the 1970s

During the 1970s, the Jacksonville District truly became an epicenter of environmental activity with the Corps when Colonel Donald Wisdom became District Engineer. Of all of the recent District Engineers, Colonel Wisdom was certainly one of the most colorful and controversial. As stated by George Buker, Historian for the Jacksonville District, "Wisdom really tore up the District, he was a good looking, combat veteran, who didn't care for civilian bureaucrats (Buker, 1997a)." Wisdom was the first District Engineer to put environmental issues on the forefront of his agenda and used his public affairs office to broadcast them:

Wisdom considered public affairs to be a vital tool to destroy the barriers between the Corps and the environmental community. He felt that too many district engineers failed to use their public affairs people. He wanted Juan Colon [the District's public affairs officer] to be active and knowledgeable about local leaders both in and out of the government. He expected Colon to attend many functions with him, to keep him informed about the people present (Buker, 1997b: 15).

Wisdom was most noted for his decision pertaining to Deltona Corporation's request for three permits that involved the dredging and filling of wetlands near Naples, Florida. The controversy over these permits centered on three issues: Deltona had already sold some of the property to homeowners without getting the necessary regulatory approvals; Florida's Governor had already approved the project as part of a deal where Deltona would give the State other land; and the issuance of the permits would have involved the destruction of over 2,200 acres of wetlands including mangrove swamps (Buker, 1997b).

Wisdom's recommendation was basically a compromise, one permit would be granted for the development of 1,100 acres (113 of which was wetlands) and two other permits would be denied (they contained 2,039 acres of wetlands). No one was really satisfied with the decision. If it stood Deltona would lose money, the State would lose its deal for mitigation land, and the environmentalists would still see development take place (Wood and Hill, 1983). Wisdom's decision was overturned at the division level based on the fact that Florida's Governor had already agreed to the development. At this point the decision stood on the shoulders of General Gribble, Chief Engineer Corps of Engineers. After weighing the evidence Gribble sided with Colonel Wisdom to limit the extent of the development (Hinson, 1978). For Colonel Wisdom the decision was a mixed blessing. For his effort the Florida Audubon Society named Wisdom "Environmentalism of the Year," yet because of the controversy surrounding the decision it may have cost him a promotion to Brigadier General:

In spite of Wisdom's environmental efforts, or maybe because of them, in the fall of 1976, just months after his Marco Island decision, he failed selection for promotion. This was the first time in his twenty-six years in the Army that he failed selection in the first year of eligibility. His last chance to earn his star, [which he did not receive] was in January 1978 (Buker, 1997b: 14).

Wisdom left the Army in 1978, and took a job in Florida. Although there was never any concrete proof that Wisdom's promotion was denied based in his controversial stands on the environment, the fact he challenged his direct superior over Marcos Island certainly did not help his cause.

The Jacksonville District in the 1980s

After Colonel Wisdom, the District had a number of Chief Engineers who continued to work with the various groups associated with water resource issues. The next significant change in the organization started with Colonel Myers in 1984. Myers tenure is significant because he was the first District Engineer to market the Corps' capability in engineering and management to help solve Florida's environmental restoration problems (Buker, 1997a). In addition, Myers hosted the Environmental Advisory Board's 38th meeting in Tampa, Florida in 1985. The theme of the meeting was "Solving Florida's Water Resources Problem: A Cooperative Effort." The meeting included a number of federal agencies, environmental experts, and top brass from the Corps (USACE, 1985).

The next two District Engineers, Colonels Herndon and Malson were more noted for what they did for the organization internally than what was observed externally. Both District Engineers forced the organization to undergo reorganizations that profoundly shifted its bureaucratic culture away from its traditional engineering base (Buker, 1997a). The changes occurred in three areas; the replacement of a number of branch and division chiefs, the shift towards a project management approach of doing business, and the introduction of information management systems.

As could be guessed the forced replacement of division and branch chiefs had a profound impact on the organization. As stated by Herndon:

As a result of other retirements, some which were encouraged, some of which were simply the timing of the normal retirement sequence, I have been able to modify the culture of the Jacksonville District remarkably. . . . We have a new

Chief of Environmental Branch within our Planning Division who is widely respected as one of the foremost environmental officers with the Corps of Engineers. So I'm very pleased with the changes that we've been able to make in personnel at the Jacksonville District (Herndon, 1989: 42).

These shifts in personnel also included a generational change with the organization. As stated by Stuart Applebaum, Chief of the Ecosystem Restoration Section, "The reorganization of the Jacksonville District finally gave the organization a new group of people with an environmental culture (Applebaum, 1997a)."

It was also Herndon who ushered in the use of project management within the district:

We've also had an occasion for a major reorganization of some of our functions by the incorporation of Project Management into the Corps of Engineers. As a result, that has created a new position of a Deputy District Engineer of Project Management and some Life Cycle Managers. . . . This small but extremely competent staff will be able to do a remarkable job in enhancing our ability to manage projects within the Jacksonville District (Herndon, 1989: 43).

Since the implementation of project management at the Jacksonville District it has become the primary method by which civil works projects are accomplished. This approach is extremely important as it allows input on environmental issues at the beginning project cycle instead of later on when the project is for the most part already planned.

It was during Colonel Malson's tenure as District Engineer that the development of the District's information management system occurred. This system which started out as a network of personal computers tied together internally has evolved into one of the primary methods used by the District to perform both its civil works and regulatory tasks. The system which includes an Internet Homepage, had over 13,000 visits

between June and November 1997 (USACE, 1997b). The system is also used in the regulatory program for public comment on 404 permits, as well as an input mechanism for State of Florida environmental officials who also review permits (Cobb, 1997). The system has been expanded to include an interactive site where models and options associated with the Everglades restoration can be accessed and commented on by the public. The comments are then posted allowing others to address either the original topic or the subsequent comments.

The Jacksonville District in the 1990s

In 1991, Colonel Terrance "Rock" Salt, came down from General Hatch's staff at the Corps' OCE to become the new District Engineer. Salt is considered to be the first District Engineer to integrate environmental restoration into the District's organizational mission. It was during Salt's tenure at the OCE that he gained his understanding of the potential role the Corps could play in environmental restoration (Salt, 1997). Even with this insight the Corps still had to convince environmental groups and the State of Florida they were serious in their desire to actively participate in environmental restoration activities. Two events occurred while Salt was District Engineer that allowed him to gain the trust of many of the individuals and environmental groups that still looked upon the Corps with suspicion. The first was the Everglades Coalition Meeting in January of 1991. The second was the Corps role in the cleanup after Hurricane Andrew.

During the Everglades Coalition Meeting in January 1991, the scheduled luncheon speaker failed to show up. Colonel Salt stood up, took his place, and delivered an inspirational speech on how the Corps was interested in restoring the Everglades (Rice, 1997). As the speech progressed Salt took off his jacket, then his tie, then rolled up his sleeves. The message was that the Corps was ready to roll up its sleeves and get to work on the restoration of the Everglades. That speech broke the ice with the environmentalist and put the Corps on the side of the fence promoting environmental restoration (Applebaum, 1997b).

Hurricane Andrew which hit Southern Florida in 1992, allowed the Corps to demonstrate their capability to quickly mobilize and support the reconstruction of the communities hit by the hurricane. The Corps won a public relations coup with the environmentalists when Carol Browner, the Secretary of the Florida Department of Environmental Protection, waived all environmental controls. As stated by Colonel Salt:

Early on we set up an environmental team to help us do the best we could; this was a time when all environmental controls were lifted. The Secretary of the Department of Environmental Protection said that the recovery was more important than the environmental regulations. So we were on our own. All of the environmental controls that we employed were done out of our own sense of good public stewardship, good public response, and so we put in reasonable environmental controls. And, when the environmental community came back and looked at what we did, there weren't any complaints. In fact, they were very complimentary about what we had done (Salt, 1994: 25).

It was during Salt's tenure that the Federal South Florida Ecosystem Restoration Task Force was created. This group, charged with coordinating state ecosystems restoration efforts currently has Colonel Salt as its executive director (South Florida Ecosystem

Restoration Task Force, 1997). The group was originally made up of six federal agencies with roles in the water resource development has been expanded to include state, tribal, and local interests. (South Florida Ecosystem Task Force, 1997).

Salt was noted for his promotion of a holistic approach to environmental restoration. Sand on a beach was not to be thought of as an isolated phenomena but as part of a coastal shoreline in a state of constant flux (Buker, 1997a). It was Colonel Rice, Salt's successor, who went one step farther by promoting the concept of holistic governance towards solving Florida's water resource problems (Rice 1997). The idea behind holistic governance is to make sure all of the groups interested in water resource issues were adequately brought into the process, heard, and concerns acted on. The success of this approach was shown at the end of his tour when numerous interest groups vigorously attempted to have his tour extended indefinitely (*Miami Sun Sentinel*, 1997; *Naples Daily News*, 1997).

Chapter Conclusion

The evolution of Florida's water resource management has come full circle. For the first half of the century the emphasis in Florida was taming the "sea of grass". This came at a price as uncontrolled development upset the natural cycles of Florida's water supply resulting in the near-destruction of the Everglades. In an effort to preserve a small portion of Florida in its pre-development form the Everglades National Park was created. The park gave environmental organizations a focal point, something to protect.

In time both the State of Florida and the federal government shifted towards supporting the environmentalists in returning the Everglades to their primordial form.

Throughout the evolution of Florida's water resource development the Corps' Headquarters as well as the Jacksonville District have adjusted and moved in a manner that sustained their organizational mission. During the 1970s, this meant adjusting to the federal government's desire for a more environmentally responsive Corps. Nixon's halting of the Cross Florida Barge Canal, Congress' suspending of the biannual water resource development appropriations, and the Courts expansion of the Corps' regulatory mission, are all clear examples of an organization out of sync with the populous. In the 1980s, the Jacksonville District for the first time was faced with a diminished role in the area of civil works as the State of Florida actively began to restore environmentally damaged ecosystems such as the Kissimmee River. Finally in the 1990s, the district has reoriented itself and is taking a leadership role in the restoration of Florida's environment.

Chapter IV examines some of the strategies employed by the Corps' to meet the challenges of the environmental movement. In particular, the chapter will examine the impact the Environmental Advisory Board (EAB) had on water resource policy in Florida. The EAB which was originally intended to provide environmental policy guidance to the Corps held a meeting in Tampa, Florida with a theme: "Solving Florida's Water Resources Problems: A Cooperative Effort." The results and recommendations of this meeting and the subsequent follow-up work will be examined in detail.

CHAPTER IV

THE ENVIRONMENTAL ADVISORY BOARD

Chapter Overview

The case this chapter presents is an example of how the Corps attempted to mitigate pressure from its external environment by bringing environmental organizations into the civil works process. The case examines the Environmental Advisory Board (EAB) in general, and the 1985 EAB meeting in Tampa, Florida in particular. The meeting's theme was, "Solving Florida's Water Resources Problems: A Cooperative Effort (USACE, 1985)." The meeting which lasted two days explored various aspects of Florida's water resources including: offshore dredging, water and wetlands resource regulation, federal and state partnerships, and the Florida Everglades. Special emphasis is placed on how the Corps attempted to promote their civil works mission based on scientific and technical data.

The chapter is divided into five sections. The first section reviews the organizational theory involving co-optation. The second section provides a general overview of the EAB. Included in this section is the Board's origin, its structure, and its role within the Corps of Engineers. The third section provides examples of how the Corps attempted to use the EAB to co-opt environmental groups. The fourth section summarizes the key elements of the 1985 EAB meeting in Tampa, Florida. The fifth section describes the contemporary EAB and its current focus and provides an outline of the case presented in Chapter V.

Co-optation Theory and Practice

In an effort to control and maintain its organizational mission a bureaucratic organization will employ a number of strategies to limit uncertainty from its external environment. One such strategy co-optation, involves integrating the threatening elements of the environment into the leadership or policy structure of organization (Selznick, 1946). The idea is to provide interest groups limited power over the organization in return for lowering its pressure on the organization. The classic example of co-optation is the case of the Tennessee Valley Authority (TVA), which brought local interest groups opposed to TVA projects and put selected officials on its board of directors. This maneuver had the effect of giving the interest groups a feeling that their concerns were being addressed by the organization even though their actual influence on the organization was minimal. What the TVA got in return was the interest groups lowered their criticism of the TVA which in turn made the TVA's environment less threatening. Although Selznick concluded that the TVA was the clear beneficiary in this relationship, others have found that interest groups also benefited:

Most significantly, co-optation legitimated an agency's leadership in the eyes of both the agency and the co-opted groups [as Selznick found], but, in contrast to Selznick's findings, the supposedly co-opted groups, under certain conditions, could acquire real power over the agency, and co-optation often functioned as a very effective form of participation and representation for some groups that traditionally had been relatively powerless (Henry, 1992: 66).

The theory which was originally applied to interest groups impacting the TVA's organizational mission has been expanded to include modeling the relationship between non-profit organizations and the government organizations that fund them (Perry, 1996)

(Smith and Lipsky, 1993), as well as the relationship between leaders of social movements and their political and civic counterparts (McCarthy and Wolfson, 1992). But in the case of the Corps, the actions it took in dealing with environmental groups mirror the co-optation techniques used by the TVA.

The coordinated assault by environmental groups challenging the methods used by the Corps to perform its civilian mission threatened its role as the nation's principal water resource development and management agency. During the early 1970s, the Corps which was faced with an empowered environmental community, took a number of actions to co-opt the environmental interest groups that were attacking the agency. One of the highest profile activities the Corps undertook to mitigate pressure from its outside environment came in April 1970, when Corps' Office of Chief Engineers (OCE), established the Environmental Advisory Board (EAB). According to General Hatch, Chief Engineer, the EAB which was made up of six prominent members of the environmental community would:

Provide not only advice on specific policies, programs and problems, but perhaps more important, contribute to an enhanced mutual understanding and confidence between the Corps and both the general public and the conservation community (Ruess, 1983: 1).

Clearly General Hatch was attempting to utilize a co-optation type strategy to address the growing problems of: environmental groups blocking Corps civil works projects through the courts, Congress berating the organization for being environmentally unresponsive, and the Executive Branch using administrative powers to block projects. The next section examines how Clarke established and used the EAB.

The Environmental Advisory Board

In theory, how an organization implements a co-optation strategy is straightforward. First the organization identifies a potential threat from an outside group. The organization then puts leaders from the interest group in a role where they can potentially influence policy. In return for this influence the interest group lowers its pressure on the organization. Although the notion and utility of co-optation is straightforward its implementation is non-trivial. Initially, the largest obstacle an organization that employs this strategy faces is finding common ground to form a non-confrontational relationship. The relationship must then grow in a manner that results in both sides achieving some type of organizational goals. For the Corps and the environmental groups this courting was not an easy task.

The Creation of the EAB

The EAB came about in a time when a huge gulf existed between the Corps and environmental groups as to what aspects of water resource development should be emphasized. The Corps had a congressional mandate to look at only the economic benefits of a civil works projects. The environmental groups had the newly created NEPA legislation to halt projects until their environmental impacts had been considered. In the middle of this gulf stood General Frederick Clarke, Chief of Engineers. Clarke knew that with NEPA and the newly empowered environmental groups, something had to be done to reconcile these differences:

After I became chief, the act [NEPA] had just been passed, and we had seen this coming and were beginning to accommodate. One of the first things I did was to appoint an environmental advisory board of some pretty stern critics of the Corps - and by and large they were what I would call constructive critics. We went at it very seriously, working with them, looking at all of our policies and programs, and trying to improve the quality of what we were doing in step with the act. That was a very interesting association. There were many people in our organization who thought I was completely crazy -- sort of inviting the enemy into the camp. It took about a year of meetings with those people -- and we had some very fine people in the group -- before my people realized that these individuals were equally concerned about what happened to our country even though they may have a different approach to it. And it also took about a year before this group of advisors realized that we were honest in our approach to things. Once that had been accomplished, I think we had a very constructive relationship with them that continues (Clarke, 1973: 207).

During that first year, the Corps had a difficult time convincing the environmental groups of its sincerity. In a letter to General Clarke, Elvis Stahr, President of the National Audubon Society expressed his concern over the appointment of Roland Clement, Vice President of the Audubon Society to the EAB:

This will confirm an agreement I provided verbally earlier, viz., that we are pleased to have this opportunity to be more directly involved in helping you and the Corps shape a more ecological policy by making Mr. Clement's experience and keen interest in these matters available to you on a formal basis through the Environmental Advisory Board. . . . I will say frankly that some of our friends have already expressed doubt -- even dismay -- at this joining of forces since they feel that it is window dressing. We would of course not have accepted your invitation if we felt this way, but it is well for both of us to remain alert to this reality and to recognize only effective cooperative results will dispel this credibility gap (Stahr, 1970: 1).

The letter reflects the dilemma the EAB posed to the environmentalists. If the environmentalists stated outright that they would not participate then the Corps could claim they were obstructing the achievement of the organization's environmental goals.

On the other hand, if the Board proved to be only window dressing by the Corps then the environmental groups would face criticism by their own.

In response to Stahr's concern, Fredrick Clarke, Chief Engineer, expressed his own concern:

It is my intent to have the Board assist us in shaping a more environmental policy as you suggested. I will fully consider the Board's advice on environmental matters in making my decisions; however, I cannot as you well realize, pass to the Board Members responsibilities that are mine by law. I do not propose to inhibit the Board as to publicly expressing thoughts. Thus there should be no questions of their position or reputation being compromised by their connection with the Corps. I am sure that you can also see that I am accepting considerable risk in establishing such a Board. I'm confident nonetheless, that through mutual trust and understanding we will be able to insure that the Corps meets both the environmental and developmental needs of the nation for the future (Clark, 1980: 1).

The dilemma for the Corps was if it insisted on developing and dictating the EAB's make-up and policy structure the environmentalists could question their sincerity and motives for establishing the Board. On the other hand, if it gave the board too much authority it risked being in violation of the law. In the end, both sides were compelled to try to work together, and the Corps as well as the founding members of the EAB who are listed in Table 4.1, came together to establish its organizational mission.

The Role of the EAB

Throughout the first few years of the Board's existence a continuous dialogue occurred between the Corps' Headquarters, and the members of the EAB as to what role the organization should play within the Corps. This dialogue and its evolution were essential components in defining the EAB's mission. The focus of the debate tended to

center on the level of involvement the Board would have. Having battled the Corps over specific projects the members of the EAB were aware the process used by the Corps in implementing civil works projects started at the districts. Thus influencing the civil works process at the district level was favored by the board:

Members wanted the Corps to change rapidly, and they became frustrated when Clarke's guidance was not translated into immediate action at the District level. For them, the actions of the District Engineers were the acid test of the Corps' dedication to environmental values, and these actions could best be evaluated by analyzing specific projects (Ruess, 1983: 12).

General Clarke and his staff had a different view of the EAB's role. They felt the EAB should provide advice to the Corps' senior staff who then would produce policy guidance for the district offices. It would be the responsibility of the Corps' Headquarters to see that the districts implemented the Board's recommendations correctly. Clarke was also vehemently opposed to the establishment of local advisory boards, preferring to keep the policy process at the Office of Chief Engineers:

It was very interesting at first. Some of these people came aboard and said, "We want to be a review group of individual Corps projects." That was one of the initial approaches. We discussed this at some length, and I said, "No, I don't think this will work. I want you to have a broader perspective on the problem. Because if you review a project and you approve it, you'll lose credibility among your environmental constituents. And if you review a project and disapprove it, and I decide to go ahead with it, we're going to part company. So let's stay out of individual projects. You can use those as examples for policy, but I don't want you to get into saying yea or nay on individual projects." They finally accepted that, and I think we had the right approach (Clarke, 1980: 210).

During its second year, the Board continued to pressure the Corps for a more active role at the District level. In particular, Charles Stoddard, a former Director of the Bureau of

Land Management, openly criticized the Corps' reluctance to have the Board involved in local issues. In a letter to General Clarke, Stoddard expressed his frustration:

We [the members of the EAB] find little evidence of any initiatives by your field offices to respond directly to the points raised by the principal opponents of the projects in an objective manner. We have no indications that your Washington office plays any active role in mediating or arbitrating these controversies or otherwise attempting to resolve them (Ruess, 1983: 20).

Stoddard became a significant sore point for the Corps when he went public with his criticism. In 1971, he submitted a letter simultaneously to the press and the Chief Engineer outlining his disappointment in the action taken by the Corps regarding the Board's recommendations. After a series of correspondence between General Clarke and Stoddard discussing his concerns Stoddard eventually resigned from the EAB (Ruess, 1983).

For the most part the members of the EAB did not hold Stoddard's views. After his departure the Chairman of the EAB, Roland Clement, Vice Chairman of the National Audubon Society made a concerted effort to minimize the tensions between the EAB and the Corps. This easing of tension was seen in Clement's opening remarks at the 1971 meeting in Louisville, Kentucky where he put forth a goal for the EAB to exert a greater influence on the Corps general policy statements:

In his open remarks to EAB members, Clement talked about the honeymoon period of getting to know each other being over. He praised the public participation program of the Corps and commended Seattle District for its open planning. Then Clement suggested areas of greater public involvement. One was the preparation of environmental inventories. Another was in exerting greater influence on general policy statements. This latter recommendation echoed General Clark's earlier guidance, it was especially welcome come from the chairman of the Environmental Advisory Board (Ruess, 1983: 22).

It was at this point where the members of the EAB and the Corps' Headquarters finally reached a consensus on how they two organizations should interact. The mission of the EAB was to provide the Corps with policy guidance on issues that impact the organization as a whole, and interact primarily with Corps Headquarters.

Even though Clarke had successfully completed the delicate procedure of getting the EAB established and a relationship defined he still had to use the organization in a manner that achieved a balance between the Corps and the environmentalists. To do this, Clarke took the EAB out on the road at least once a year to address regional problems. The objective of this approach was twofold. First, it allowed the members of the EAB to actively participate in areas that were truly problematic for the Corps. Second, it gave General Clarke a method to demonstrate to his view of the importance of evaluating the environmental impacts of civil work projects:

We took them [the EAB] to various spots in the country to discuss some of the local problems we had. I am reminded particularly of work on the Atchafalaya and some work in the Vicksburg area, discussions on the Great Lakes. In that type of discussion, it was one-on-one. They were talking to the low level planners of the Corps as to what considerations these people were giving to various problems, and getting a sense of how thoroughly we were looking at environmental problems. And, of course, I'm sure they had an impact on the attitudes of these planners (Clarke, 1980: 212).

Conclusion

The EAB meeting focusing on the Atchafalaya was indicative of the problems faced by Clarke in his desire to co-opt environmental organizations. The controversy on the Atchafalaya centered on the conflict between the Corps established civil work program in the area that focused on dredging and channeling the river, and the newly empowered

local environmental interests that demanded the project be halted pending a review of its environmental impact. The EAB meeting brought a heightened awareness of the Corps' Headquarters concern for the environment. The meeting was part of a campaign by Clarke that included; meeting with the National Wildlife Federation (NWF) in Washington D.C., ordering the District Engineer to meet with the NWF's local chapter, and to have the District work with environmental groups to develop an EIS for the river basin.

The meeting held in New Orleans in 1973, focused on the development of the Atchafalaya river basin, and NEPA. The main topics of discussion was a clear signal from General Clarke that the EAB was to be a tool in which Headquarters would demonstrate its determination to include environmental groups in controversial civil works projects. At the same time it demonstrated to the districts that environmental considerations needed to be included in the civil works process. Although this was the goal a pro-development institutional bias still remained:

Historically, senior Corps officials have encouraged decentralization because it enabled district engineers to respond quickly to local disasters and crises and to work closely with civilian leaders. However, decentralization could be a disadvantage whenever the Chief of Engineers as in the case of General Clarke's initiative. Accustomed to certain procedures and disinclined to fix something that "ain't broke," district employees -- overwhelmingly civilian -- may resist orders from headquarters, or adopt them at excruciatingly slow pace. As Fred Chatry, the affable chief of the engineering division in the district, put it, "There was considerable reservation [in the New Orleans District] about the propriety of the Corps of Engineers entering into an agreement to halt certain work for which the Congress had made funds available and for which we had the authority to proceed (Ruess, 1998)."

Clarke's desire to see the organization change resulted in a partnership between: the Corps, other federal agencies, the State of Louisiana, and local environmental groups, to work together in towards a solution for the Atchafalaya in which all participants may not be completely satisfied but all had input into the process. Today the Atchafalaya is a success story, the river basin is a mixture of natural and man made structures that balances the environment with economic stability for the region (*Baton Rouge Morning Advocate*, 1994). The next section contrasts the Corps work on the Atachafalaya with dredging activities in Florida's Tampa Harbor in the early 1980s. The topic was of primary concern during the 1985 EAB meeting in Tampa, Florida and demonstrates both the strengths and weaknesses associated with the Corps' co-optation efforts.

The Tampa EAB meeting

Over the years the Corps has used EAB meetings to evaluate regional environmental issues of interest to the organization. The typical scenario for this type of meeting involves: the Board meeting in a special local where the issues exist; discusses the relevant issues with local interests, the district, and the headquarters organization; a field trip out to specific places of interest; and finally issuing a report that includes specific recommendations. An example of this type of meeting occurred in 1973 when the EAB focused on the need to provide flood control and navigation to the Atchafalaya river basin in Louisiana, and at the same time protect the wildlife areas along the river (Ruess, 1983). Five years after the EAB meeting in Louisiana the Corps had a new problem in 1978, the Clean Water Act was amended in a way that gave the State of

Florida primacy over the environmental permitting of dredging activities. This being the case a situation arose where the State had the power to determine how and when the Corps could perform one of its fundamental civil works tasks. Because this relationship was new no one could predict the potential impact the permitting system would have on the dredging mission. As it stated by Colonel John Adams, District Engineer, the results were problematic:

Perhaps the most significant things that occurred coincident with my coming to Jacksonville District in 1977, just six months before I came here, the Congress of the United States passed the Clean Water Act, and this had the far reaching effect on our operation. For the first time it put us as a Federal agency under the permitting authority of the State of Florida. Since we were doing annually about \$12 - \$14,000,000 worth of maintenance dredging this new law required us to go to the State to get permits. . . . The initial application of that public law as far as it affected the Corps of Engineers came with us to Jacksonville District in October of 1978, shortly after I came aboard. As soon as the law was passed there was a great deal of effort for us and the State, primarily the Department of Environmental Regulation, to try and guess what the impact would be and what procedures would enable us to go on and do the things that we had to do to keep the waterways open. We just were unable to anticipate all of the problems that did come up. Consequently, in the first year we found out that more than three-quarters of the permits we submitted [to the State of Florida] were in fact not approved (Adams, 1982: 2).

The conflict between the Jacksonville District and the State eventually made it all the way to Congress as both sides argued their position as to the impact the permitting process had on their organization. As was mentioned in Chapter III, the District certainly did not make any friends when Colonel Adams met with Florida's congressional delegation to air his concerns about the permit process just before the State officials met with the same group. Eventually the Corps received their permits approximately three years after they were submitted (Buker, 1997b).

Although the Corps was able to eventually work out the issues surrounding permit applications their troubles surrounding dredging were just beginning. In 1975, the Corps submitted a draft EIS statement to perform a major deepening of the Tampa Bay channel. At the time there was no objection to the proposed activities from either State or local interests. But when work commenced the following year local opposition began to heat up. First, a group of citizens from Manatee County objected to the Corps using an EPA approved dumpsite. Second, a group of fishermen threatened a blockade to stop the dredging activities that were thought to impact fishing grounds. Finally a newly formed grass roots environmental organization Save Our Bay, objected to the dredging activities as it would re-suspend silt in the water (Buker, 1997b). The situation was clearly getting out of hand:

Colonel Adams described the situation in Tampa Bay as complex. Hillsborough County had an environmental coalition. People from the various academic institutions around the bay were loosely bound in one or another environmental institutions. The Audubon Society and the Manatee County Commission voiced concerns. No sooner would he solve a problem in one area of the bay than it would pop up again in another area under a different sponsor. It was, he said, "like trying to mold Jell-O with your bare hand; you just squeeze here and it popped out somewhere else (Buker, 1997b: 261)."

The District Engineer's response to these attacks was to begin a strong arm campaign against the local interests. The citizen group from Manatee County was ignored based on the rationale they had the opportunity to voice concern during the development of the EIS and they failed to do so. As for the fisherman the District Engineer threatened a lawsuit for lost funding resulting by their actions. Finally, the District performed

numerous studies demonstrating the actual amount of silt resuspended by dredging was less than that created by normal shipping traffic (Buker, 1997b).

Unbeknownst to the Corps, although the dredging activities followed the rule of the law with its EIS the area where the material was being dumped proved to be a problem. Specifically, the Manatee County Commission was able to successfully block the Corps' dredging activities by showing the Environmental Protection Agency had not properly performed an EIS for the area the Corps was using as a dumping ground for the dredge tailings. The situation was described by an EPA official during the EAB meeting:

There was a list of sites published in the *Federal Register*, which the Corps identified as historically used sites. I believe the sequence was that the Corps had informed EAP that the Site A, and there also was a Site B, had been historically used, and therefore, there had been an environmental impact statement filed on it then. If memory serves, in point of fact, they had never been historically used, so neither the Corps nor the EPA had followed the procedures of NEPA to file the required EIS for the disposal procedure (USACE, 1985: 18).

Because of the time needed to complete a new EIS for the dump site the Corps' dredging activities took five additional years to complete. More important it demonstrated the power State and local interests had over the Corps civil works mission in Florida.

For Tampa Bay and the environmental interests that rallied for its protection, the issue of dredging was just one of many issues associated with its water quality. The loosely associated groups that were concerned about Tampa Bay in the 1980s have become a driving force in its restoration. The Bay is now part of an EPA sponsored program that brings together regulatory agencies, special interest groups, and elected

officials to put forth a strategy to preserve and restore its environment (*Tampa Tribune*, 1994). It is a classic case of the shift towards cooperative and holistic approaches to governance in regards to the nation's natural resources.

Prelude to the EAB Meeting

This newfound power of the State and the local environmental interests did not go unnoticed at the Corps Headquarters. Something had to be done to address the changing organizational environment in Florida so the Headquarters decided to convene a meeting of the EAB to examine the specific problems occurring in Florida. The meetings theme: "Solving Florida's Water Resource Problems: A Cooperative Effort" reflected both the Corps' Headquarters and Jacksonville District's desire to address the issues associated with the lack of a overall strategy to Florida's water resource management program. With this in mind, the Headquarters office sent guidance down to the Jacksonville District providing details on the framework the meeting.

Planning the Meeting

In planning to sponsor the EAB meeting in 1985, Corps Headquarters issued a press release announcing the meeting which would include the following topics:

1. Ocean Disposal – The scientific Approach to Site Selection and Management.
2. A panel discussion of the Tampa Harbor Case Study.
3. Water/Wetlands Resource Activities in Florida.
4. Federal/State Partnerships in Water Resources Regulation.

5. The Corps' Regulatory Program in Florida (USACE, 1984).

This awareness of the water resource problems did not blind the Corps as to the potential pitfalls of holding the meeting in Florida. Guidance put forth in a Memorandum of Record generated by Lieutenant Colonel Ronald Kelsey, Assistant Director of Civil Works, Environmental Programs, pertaining to topics and agendas for the meeting included the following comments:

Convening the meeting in/around Tampa Bay/St. Petersburg may not be a good idea. Congressman Gibbons and Ireland are in that vicinity -- they do not like the Corps -- if the meeting were held there -- we may be in for a lot of unnecessary or undesirable troubles. Consider the city of Jacksonville and include the Tampa Bay area on the field trip (USACE, 1984).

Although this guidance was ignored it demonstrated the unease the Corps' Headquarters had over the agenda and the location of the meeting. The guidance and recommendations for a change in venue were discarded and the meeting went off as originally planned on April 2, 1985, in Tampa, Florida.

The EAB Meeting in Tampa, Florida

On April 2, 1985 the 38th meeting of the Corps' Environmental Advisory Board convened in Tampa, Florida. The intent of the meeting was to focus the current tensions between the Corps, the State of Florida, and local interest groups:

Midway through his tour Colonel Myers (District Engineer, Jacksonville District) entertained the Chief of Engineers' Environmental Advisory Board in Tampa. The agenda addressed the thorny issues of the Kissimmee and the Everglades. He brought in people of all views: Florida's DER (Department of Environmental Regulation), represented by Al Deveraux (District Engineer, Jacksonville District, 1981-84), Florida's Game and Fresh Water Fish Commission, the Everglades

National Park, National Marine Fisheries, farmers and landowners (Buker, 1997b: 24).

Once the old business was addressed much of the meeting was spent reviewing the problems that occurred during the Tampa Bay dredging. This was clearly not what the Corps Headquarters wanted in the guidance document sent by Major General Wall, and Brigadier General Edgar to the District Engineer, dredging was to be covered but not emphasized:

Dredging should not be a heavy or large portion of the meeting. However, a joint pitch by the Corps and the EPA on Tampa Bay -- site selection and problems of disposal of dredge material -- include the good things that turned out of site A! Site selection should be based on scientific data -- science and technology should be the guide (USACE, 1984b).

Although the Corps' headquarters preferred to steer the agenda towards the positive aspects of dredging the debate focused on the problem associated of making public policy decisions with a lack of technical data. Of particular debate was whether or not the dumping area for the dredged material included rock shoals that provide a habitat for fish, or was a barren sandy bottom that was devoid of life. This was a critical issue for the fisherman involved in the local area who argued that dredging activities would destroy fish habitat. In a panel discussion on dredging this debate was brought to light:

The EPA was saying very early on that some of their early scans [of the ocean bottom at the disposal site] showed a flat, sandy bottom, but there were other members of the community who disputed that and said, "No, we're dealing with very important habitat out there," and that's what sent the controversy in motion. It was the credibility, or lack of credibility, of EPA and the Corps that pushed this controversy along. What were dealing with is not science, even though we're seeing a validation of what the initial scientific assessment was. It was a question of values there and there were polar positions that started to form based on those values (USACE, 1985: 27).

Clearly the discussion brought out the need for public involvement as well as an understanding that water resource policy is a value laden science. The panel discussion stayed on this tack with a discussion of how participation in the planning process is essential if groups with varying ideas are to work together:

How far you go when people have perceptions that are being reported, that have no basis in fact? The lesson there is to try to keep as many people as informed as possible all the way along the line. You still reach the point where people have opposing points of views on some things and they're going to stick with those positions, but if we could just get people to communicate and trust one another a little bit, you could avoid these things happenings (USACE, 1985: 27).

As the panel members continued to stress reconciliation and cooperation, the response of the Corps' senior officials was still one of conflict over compromise. As the discussion on the Tampa dredging situation moved towards looking at future dredging options the tone once again soured as Major General Wall stated:

How do we balance the public interest? I don't know of anybody who can do this other than the district engineer, who has the mission to do that without fear of favor. . . . The single purpose agencies such as the National Marine Fisheries really don't, nor should they be expected to balance the public interest. . . . Things got out of hand in the early stages [of the Tampa conflict] when everybody started posturing. I don't believe it makes any difference if we go out farther [out into the ocean to deposit the dredging materials], but its going to cost a lot more money, in my view, and took this position with Assistant Secretary of the Army, Bill Gianelli, and he endorsed that. It's pretty lonely in the Corps trying to maintain the support. We took the position, "Listen, if the State of Florida or the Port of Tampa or Manatee County or whatever didn't want the Port of Tampa deepened we could care less (USACE, 1985: 29)."

Once again the Corps stressed its position that the benefit-cost ratio was the only relevant variable it would assess. At the end of the meeting, the Board made a number of recommendations including more cooperation between the groups involved in

Florida's water resource development, and using the experiences of the Tampa dredging as a case study.

Conclusion

The EAB meeting in Tampa, Florida presented the Corps with the opportunity to bring together groups associated with water resource management and enhance their traditional role as a water resource development organization. At the time, the Corps was rapidly losing primacy to the State of Florida in the area of water resource development, and grass roots environmental groups were able to stop Corps projects associated with their civil works mission.

As for dredging in the Tampa Bay, the Corps' approach finally changed in the late 1980s, after it was found that the Corps was dumping dredge spoils on a nesting area for Least Terns. Although Least Terns are not on the endangered species list, and the dredge pile was manmade the action which resulted in the destruction of two eggs was a violation of the Migratory Bird Treaty Act. The situation got to the point where the Fish and Game Department was ready to press criminal charges against the engineer in charge of the operation. As Bo Smith, Chief of the Jacksonville's Environmental Branch points out the activities had a sobering effect on the District:

The incident with the Least Terns was a watershed event for the District. From a public relations standpoint, the Corps saw things getting out of control. From that point on, we sent people out to make sure that the areas where we placed dredge spoils had no birds nests, and if they did, we fenced off the area to minimize any potential impact. We also started to work with the local community groups who were interested in cleaning up the Bay, and supported their effort in making Tampa Bay a national estuary (Smith, 1998).

In addition to the public outreach, the Corps has also become much more sensitive to the methods employed in dredging. For example, spotter planes are used to ensure that endangered species such as manatees and whales are not in the area during dredging activities. Additionally, dredging material spoils are minimized by; returning clean sand to area beaches, silt, and clay material is taken far offshore and contaminated material is disposed of in confined areas (Smith, 1998).

Postscript - The Contemporary EAB

Beginning in the late 1980s, Corps Headquarters began to shift the types of tasks and objectives associated with the EAB meetings. In particular the Corps began to use the EAB to provide input on large scale project analysis. According to Paul Rubenstien, the Executive Secretary of the EAB:

This shift is a result of the EAB's relative inadequacy to influence Corps policy. On the other hand, when we get them to look at specific programs, we've been much more successful in impacting the organization. Topics where the EAB have either been or will be tasked to examine include; controlling exotic species, the nation's watersheds, and ecosystem restoration (Rubenstein, 1997).

This shifts reflects a continuing effort by the Corps to find a role for the EAB that maximizes the potential of the expertise represented on the Board. Today the Board has expanded to nine members who are listed in Table 4.2, representing various geographic and professional backgrounds. As valuable as the Board has been to the Corps in providing project analysis it has also become a political asset. Both the Bush and the Clinton administration have circumvented the traditional process of selecting EAB

members which entails a selection process performed by the Chief Engineer by directly requesting individuals be put on the Board (Rubenstein, 1997). Two such members are currently sitting on the EAB.

The EAB's Impact

Much like the original members of the EAB in the early 1970s, the District employees hired by the Corps to address environmental issues were waiting for signals from the Corps' Headquarters as to just how committed the organization was to including environmental issues into the Corps' organizational mission. The EAB proved to be one of those signs. As recalled by Harley (Bo) Smith, Chief of the Jacksonville's Environmental Branch, and one of the first biologists brought into the Corps during the early 1970s, "The EAB had a profound impact on the Corps when it was formed. The message resounded through the organization, Clarke talked to environmentalists (Smith, 1997)." When the Corps' Headquarters decided to have a meeting in Florida that dealt specifically with the State's water resource management issues a clear message was sent to federal, state, and local groups that Corps' Headquarters saw a problem and was willing to hold a forum discussing it.

As for the Tampa meeting itself the impact on the groups involved with Florida's water resource management was minimal. When asked what impact the 1985, meeting had on Florida's water resource problems Estus Whitfield, the State of Florida's top environmental policy specialist and current member of the EAB stated:

The meeting had no impact on Florida or on my day to day activities. What being on the Board has done for me, is it's given me a greater insight as to what the Corps is all about. Before I became a member of the Board, I looked at the Corps as being just the Jacksonville District now I see it as much greater than that (Whitfield, 1985).

Thus from a personal perspective the EAB gives its members a better understanding of the organizational constraints the Corps operates but beyond that adds little benefit to their job duties outside the EAB.

As for the Jacksonville District the meeting had little long-term impact on the organization as Colonel Myers stated after the meeting:

The meeting was very interesting, there were many different organizations represented. Although we talked about many different issues concerning the environment and water resource development, I really don't see what role we can play. The solution to Florida's problems aren't engineering solutions, they're political solutions (Buker, 1998).

Chapter Conclusion

The EAB meeting in Tampa, Florida is a textbook example of how the Corps' Headquarters attempted to influence both its own organization and the environmental groups that threatened its organizational mission. In the case of the meeting in Tampa, what the Corps failed to realize was outside environmental groups had no reason to cooperate with the Corps because they had the legal avenues to shut down and delay projects. In the case of the District they still operated in the mode that the merits of a civil works projects were determined by its benefit-cost ratio, with other aspects of the project being secondary in importance.

The 1980s marked a time in the Jacksonville District's history when the organization was at a cross roads. Either they could continue to focus on the narrow, legalistic interpretation of their organization mission, or they could adapt to the changing organizational environment by promoting the concept of holistic governance. The first path would result in a smaller, less stabile organizational mission, the second path would result in a larger more stabile one.

While the dredging activities indicated that the Corps was moving down the first path there were definite indications the organization was finding itself moving towards the broader mission. The most notable case of this occurring was the environmental restoration of the Saint John's River. This effort which started in the mid 1980s, during Colonel Myers tour was the first effort to restore Florida's most important asset the Florida Everglades. The next chapter examines how the Corps continues this process as it sees one of its original civil works projects in Florida the channeling of the Kissimmee River come under attack from state, local, and environmental interests. What was proposed was the fully functional and operational channel system be dismantled, and the Kissimmee brought back to its original state. The Corps' involvement in the restoration effort clearly indicates an organizational shift of its mission towards the inclusion of environmental restoration.

CHAPTER V

THE EVOLUTION OF THE CIVIL WORKS MISSION

Chapter Overview

This case examines how the Jacksonville District implemented organizational change strategies from within to adapt to the organization's changing environment. The chapter specifically examines how the Corps instituted the project management approach to its civil works mission, and applied it to the restoration of the Kissimmee River. This approach borrows from the "Life Cycle Project Management" concept developed by private industry to use project teams which work on the project from start to finish. The intent of the program, was to decrease the completion time for civil works projects by creating a more efficient process. Along with increased efficiency came the mechanism for more comprehensive evaluation of environmental impacts.

The first section of the chapter describes the general concept of the civil works process. The second section describes how the civil works process has evolved to become more inclusive of environmental impacts as well as more efficient. The third section provides a general background on the Kissimmee River. The fourth section presents an example of the civil works process at work, highlighting the Jacksonville District's role in the Kissimmee River restoration. The final section presents an outline of the case for Chapter VI.

The Civil Works Process

The Corps civil works mission which dates back to the 1800s, is the mission by which the organization identifies itself. The traditional activities included in the civil works mission include: planning and constructing lighthouses, public buildings, monuments, bridges, aqueducts, dams, and canals (Mazmanian and Nienaber, 1984). This section reviews the mechanism by which projects come into existence, gain support, and are funded by Congress. Special emphasis is placed in the methods by which a local concern becomes a full scale civil works project.

A Problem in Need of a Solution

The civil works process typically begins when a local community experiences a water resource problem such as flooding or coastal erosion. Citizens within the community contact their local congressional delegation with a request for support. If a preliminary evaluation indicates the problem falls under the Corps' civil works mission a congressional representative then submits a request to the Public Works Committee to fund a reconnaissance report. This report includes the identification of environmental impacts and potential cost sharing sponsors associated with the project. During this phase of the project a draft feasibility study and an Environmental Impact Statement (EIS) are generated.

When the draft EIS and feasibility studies are complete they are sent to the Division Office where they are finalized. The package is then sent to Chief of Engineers who

reviews the project and sends the proposal out for review by state and federal agencies. When all of the comments are received the Chief Engineer generates a final report that is submitted to the Secretary of the Army. The project is then reviewed by the Assistant Secretary of the Army for Civil Works, and the Office of Management and Budget. Upon completion of this review, the Assistant Secretary of the Army for Civil Works transmits the Chief of Engineer's report to Congress.

The process continues with the Committee on Public Works and Transportation in the House of Representatives, and the Committee on Environment and Public Works in the Senate holding committee hearings on the proposed project. If approved, the project is authorized as part of the Water Resources Development Act. Once authorized, it is then funded in the annual Energy and Water Development Act. At this point, the Secretary of the Army and the non-federal partners sign a Local Cooperation Agreement which specifies the actual cost-sharing agreement between the Corps and the other sponsors (USACE, 1988).

Once the project is funded, the District begins the next part of the civil works process which includes the implementation, completion, and maintenance of the project. At any time both the Corps Division and Headquarters offices may review the plans and designs. Once complete the project is typically operated and maintained by the non-federal sponsors. The entire process from start to finish can take several years to complete.

Conclusion

The civil works process from start to completion is a highly complex process. As such the timing for these projects is often measured in decades. The problem this creates is many times a solution that is offered up may become outdated as the initial need is no longer relevant. For this reason the Corps came under intense fire by Congress in the late 1980s to find a better method of implementing this mission. The next section examines the evolution of the civil works process and the critical changes implemented by the Corps to streamline its approach.

The Evolution of the Civil Works Process

Changes in the methods the Corps uses to perform its civil works mission are more revolutionary than incremental, often occurring when the organization is shocked into action. This section traces the evolution of the civil works process from the 1960s, when the planning process typically included only engineering and structural decisions, to the present where social, cultural, and environmental issues are included in the process. The specific events that are emphasized are the impact of NEPA, the implementation of cost sharing as part of the Water Resources Act of 1986, and the institution of project management by the Office of Chief Engineers.

The Impact of NEPA on Civil Works

In the time preceding the passage of NEPA, civil works projects were primarily evaluated based on technical and structural criteria. As Bo Smith, the Chief of the Jacksonville's Environmental Branch recalled:

The typical engineering approach to planning a civil works project involved an Engineer going out to a site and visualizing how a project should be completed. He knew what the problem was, then he would go out in the field and find a natural structure that would fit an engineering solution. Once he did that, he would go back to the office and come up with a project plan (Smith, 1997b).

In this era, the project planning function at the district level was located in the Engineering Division. The planning function is critical in the civil works process as it sets the basic concept for the entire project. With the passage of NEPA this approach became unworkable as environmental impact assessment became a critical element in project planning. But from an organizational standpoint the Engineering Division which was responsible for project planning was ill equipped to perform these types of analysis.

The Corps' response to this organizational problem was to split the planning portion of the civil works function into its own separate branch of the organization. The organizations had both engineers and environmental scientists who could provide input into the civil works project at the outset. The planning organizations have grown considerably with a typical mission statement including the following:

The primary purpose for the existence of a planning organization in a Corps of Engineers district is to plan projects to be designed and built by the Corps to serve our nation's water resources related problems and opportunities. To plan a project, we, or the public we serve, must first identify a problem or opportunity. Next we must define the situation as it is today in terms of economic,

environmental, social, historic, and cultural values. We then formulate a range of potential alternative futures from the which the most desirable future is selected. To do our work, we employ a staff of professional employees well educated, trained, and experienced in the physical, social, and natural sciences, including biologists, archeologists, economists, geographers, engineers, water resource planners, public involvement specialists and others (USACE, 1997a).

As seen by this mission statement the development of planning organizations in the Corps greatly increased the number and types of issues that are addressed up front. This shift strengthened the environmental community within the Corps as they were now included in the project planning process. Although the separation of the planning function made the consideration of environmental impacts more timely the process was still excruciatingly slow. With this in mind, Congress set out a number of critiques of the Corps demanding they become more efficient. The next section describes the Corps response to these actions.

WRDA-86 and WRDA-88 and their Impact on Civil Works

Two of the most significant pieces of legislation impacting the Corps' civil works mission came in the late 1980s as part of the water resources appropriations bills. Specifically, the Water Resource Development Acts of 1986 and 1988, introduced the concepts of cost sharing and project management to the civil works process. These two concepts radically changed the methods of doing business at the Corps as the organization had to become more customer oriented, responsive, and efficient.

The Water Resource Development Act of 1986 (WRDA-86) introduced the concept of cost-sharing of new development projects (Ruess, 1991). The idea was to shift at

least a portion of project costs to non-federal stakeholders such as port authorities, communities, and the states:

The Corps headquarters focused on implementing the WRDA-86 cost-sharing provisions through the late 1980s and early 1990s. Each year the civil works directorate published cost sharing guidance for flood control projects, commercial harbor navigation, recreational navigation, small projects, inland waterways, etc. The Republican administrations required greater nonfederal participation for projects believed to be of more local character, such as recreational navigation and hydroelectric power. Although cost-sharing formulas were set in law, the civil works directorate attempted to make nonfederal participatory procedures consistent throughout all Corps field operating agencies (Graves, 1997).

Cost sharing was right in line with the next major change in the Corps' civil works process which was the redesign of the planning process to make it more efficient.

Although the environmental aspects of a project were better emphasized under the new planning division the civil works process remained extremely inefficient. One of the major contributors to this problem was a byproduct of the days when projects started in the Engineering Branch where the civil works organization operated in organizational stovepipes. The metaphor of a stovepipe represents an organization where a project moves from one stage to another in a linear manner (Rice, 1997). The problem this created was it did not take into account the fact that input on a project may require information from multiple sources. This resulted in civil works projects having to cycle through the planning process a number of times before all of the critical elements were met.

In 1988, debate on the Water Resource Development Act in Congress generated a great deal of criticism aimed towards the Corps as to how it performed its civil works mission. Typifying this argument were comments made by Senator Patrick Moynihan:

In the wake of the extensive policy changes mandated by the Water Resources Development Act of 1986, the Committee on Environment and Public Works is concerned that the existing Corps of Engineers management structure and administrative procedures be responsive to the orderly execution of studies and projects (Graves, 1997).

Responding to these comments the Assistant Secretary of the Army for Civil Works, Robert Page, introduced a number of management reforms geared towards streamlining the civil works mission. These reforms which together became known as Initiative 88 included the use of the project management approach. As previously mentioned the project management approach borrows from the "Life Cycle Project Management" concept which uses project teams made up of individuals with various backgrounds who work on the projects from start to finish.

Although the concept of project management helped mitigate the concerns of Congress its integration into the organization was far from assured. In order for this to take place the Corps had to convince the impacted groups within the organization of the benefits of the change. The strategy employed by the senior officials within the Army and the Corps of Engineers included: going to the District offices and introducing the concept of project management, establishing guidance documents describing how to successfully implement the program, and creating institutional changes within the Districts to consolidate the approach.

During May, 1988, General Hatch, Chief of Civil Works and other senior staff members traveled around the country promoting the concept of project management. A few months later Corps Headquarters issued the "Project Management System"

guidance document to assist the districts with the implementation of the project

management approach:

On July, 1, 1988, headquarters issued "Project Management System" (EC 1110-2-536), establishing a methodology for efficient implementation. A principal element was team management. Instead of individual managers, project teams would work on projects from inception to completion. "Life Cycle Project Managers" would remain responsible for a project from the feasibility study stages through its construction (Graves, 1997).

Finally, the Corps generated an institutional change by creating the Project Management

Division within the Civil Works Directorate:

As the first Chief of the Project Management Division, Bory Stienberg wished to make project management work efficiently throughout the agency. His duties called for production of clear, understandable guidelines for the deputy district engineers for project management. The guidelines reflected the need for accurate scheduling and budget forecasting and a systematic accounting procedure for contingencies that often affected costs and schedules (Graves, 1997: 34).

Program management had an immediate impact on the organization as it allowed the districts to mobilize teams of individuals to work on specific projects. This capability was needed as both Congress and the environmentalists became increasingly impatient with the civil works process.

Conclusion

By the early 1990s, the Congress was attaching strings to appropriations by including funding for projects only if feasibility studies were completed by the next appropriations act (in two years). This accelerated time scale forced the Corps to alter their organizations in a way to meet these demands. The next section describes how the

Kissimmee River restoration project which was the first of these types of projects undertaken by the Jacksonville District occurred.

The Kissimmee River Restoration

As seen in Figure 5.1, the Kissimmee is a major source of water for Lake Okeechobee which in turn supplies the Everglades. In its original form the river which meandered slowly East to West as much as it did South towards Lake Okeechobee was prone to flooding during Florida's rainy season. As early as 1902, the Corps and the State of Florida sought out means to minimize the impact of flooding by introducing control structures along the entire length of the river. As with most of man's efforts to control Florida's waters, local alterations led to large scale disruption of the ecosystem. In the case of the Kissimmee channeling the river: increased the nutrient level and decreased the oxygen flowing into Lake Okeechobee, destroyed vast areas of wetlands throughout the middle section of the state, and altered the natural cycle for water flowing into the Everglades.

The impact of the modification of the Kissimmee was one of the main topics explored in Marjory Stoneman Douglas' book, *The River of Grass*. It brought to light the fact that the structural controls put in place by the State and the Corps had devastating impacts on the environment (Douglas, 1943). Even before the final modifications of the Kissimmee were complete environmental groups as well as State and local government officials were concerned as to its environmental impact. The results of the channeling of the river was devastating to the local environment. By the

end of the project 35,000 acres of the areas 45,000 acres of wetlands had been destroyed. The resulting loss of habitat resulted in a 93% drop in migratory waterfowl using the watershed (*Orlando Sentinel*, 1993).

As the impacts of the channeling became more apparent the Corps came under pressure to take action as Colonel Wisdom, the District Engineer in 1975 recalled:

Considering the technology at the time and the sensitivity of engineers to the environment at the time, the logical solution was channelization, [with its] minimal expenditures. But water quality, esthetics, environmental concerns were not really taken into account. Later after it had been built, people became more conscious of the water quality, of the headwaters going into the Okeechobee area, and the fact that, or the possibility that, the Okeechobee could be a nutrient sump. People became more concerned about the original alignment of the Kissimmee and wanted the Corps of Engineers to come in, and restudy and possibly realign it, put it back the way it used to be, or at least modify it, so that it could utilize some of the normal filtration and absorption that was there in the area (Wisdom, 1978: 9).

In April of 1979, Congress gave authorization to the Corps to begin a comprehensive restudy of the Kissimmee river. The study was to find alternatives to the current system of canals and control structures so as to improve the water quality as well as enhance fish and wildlife habitat.

In the early 1980s, the Corps completed a comprehensive restudy of the Kissimmee river, and concluded that restoration scenarios failed to meet the necessary benefit cost ratio to warrant federal funding. The turning point for the Kissimmee came in 1983, when even before the Corps completed their study Governor Graham called for the restoration of the area (*Florida Sentinel*, 1992). The State then instituted and funded a demonstration program by which the restoration solutions would be demonstrated.

In 1986, Congress allocated funding for the demonstration of environmental restoration projects to enhance existing water resource projects. The Kissimmee was an ideal candidate for the program, and the State began lobbying for the funds. One hold back to funding was the fact that the Corps' original study indicated no positive economic impact associated with environmental restoration. This assertion was challenged in 1988 when a study released by the Audubon Society stated that the original Corps evaluation was biased against restoration activities. The study was performed by Tim Lynch who was the chief environmental economist for the Florida Department of Environmental Regulation from 1975 to 1988. Lynch claimed the Corps grossly underestimated the benefits associated with the recreational aspects of river when restored (*Tampa Tribune*, 1988).

In 1990, Senator Graham, committee chairman of the Senate's Subcommittee on the Environment and Public works, held up the Water Resource Development Act in committee until funding for the Kissimmee restoration was included. Graham as the Governor of Florida made the Kissimmee restoration a top priority. The committee balked on Graham's maneuver as the Corps had failed to produce a feasibility study for the restoration which is part of the traditional civil works process. Graham wanted to use the State of Florida's restoration study but this was outside the normal process for funding civil works projects. In the end the project was to be funded in the 1992 WRDA legislation with the Corps guaranteeing to Graham that it would have the feasibility study completed by the deadline for WRDA-92 (Applebaum, 1998).

In 1994 the official restoration of the Kissimmee River began as a 1000 foot channel of the river was backfilled near Lake Okeechobee. The project which is scheduled to be completed in the year 2010, will include restoring 43 miles of the river, and creating 26,500 acres of wetlands (*Orlando Sentinel*, 1994). The total cost of the project is estimated at \$372 million dollars. The next section examines the role the Corps played in the Kissimmee River restoration with a special focus on the organizational changes made to incorporate this work into their civil works mission.

The Civil Works Process at the Jacksonville District

As with other Corps Districts civil works has been a mainstay and defining organizational element within the Jacksonville District. This being the case the District is highly protective of this role. This section examines how the Corps changed their methods of performing its civil works mission in a manner that kept their organizational mission intact. The section reviews the Districts historical methods of performing their civil works tasks and documents how they altered these methods to adapt to the changing political environment associated with Florida's water resource management.

Jacksonville District in the Pre-NEPA Years

Before NEPA, the Jacksonville District performed its civil works mission in the same manner as other districts. The power within the organization lay in the Engineering Division where: project planning, development, and implementation occurred. For the District the inherent lack of attention to environmental impacts

associated with this organizational setup created an atmosphere that inflamed the passions of the environmental community. A classic example of this occurred in 1966, at the Florida Governor's Annual Water Resources Development Meeting where the perennial favorite of the Jacksonville District, the Cross Florida Barge Canal was being debated:

At Governor Haydon Burns' Annual Water Resources Development Meeting, 25 January 1966, several hundred conservationists attended. They wanted the canal rerouted to save the Oklawaha River. In spite of their presence, the proponents carried the day with assurances that the natural beauty of the river would remain. The only cabinet member who bothered to attend was Secretary of State Tom Adams, an outspoken proponent of the canal. His questions angered the "Save the Oklawaha" people, who captured Adams' tactics on film. For years afterwards the environmentalists showed the film to arouse the public against the suspect project. The meeting was the turning point for the opponents, the issue was no longer "Save the Oklawaha" but "Stop the Canal" (Buker, 1997b: 9).

Although the debate on the environmental impacts created by civil works projects was intense the Corps focused on its legal authority to perform these projects without considering their consequences to the environment.

During this time, the Corps was working on an environmentally destructive project known as the Central and South Florida (C&SF) project. The C&SF project was a comprehensive water development program aimed at controlling the flooding that was endemic to the region. The channeling of the Kissimmee was a major part of the effort to control the waters. The Corps took to their mission with abandon and by 1965, there were over 1,300 miles of canals and levees as part of this project (Buker, 1997b). In 1971 the Corps completed the Kissimmee Control Channel C-38. The canal which contains six control structures between the headwaters of the Kissimmee and the

outflow into Lake Okeechobee. The channel effectively reduced the length of the river from 103 miles to 56 miles (Buker, 1997b).

Jacksonville in the 1970s

In the early 1970s the State of Florida bolstered NEPA, by enacting a number of State laws limiting projects pertaining to water resource development. Additionally Florida became a rallying point for a number of organizations involved in the national conservation movement (Blake 1980). These forces coming together were especially potent in blocking some of the Jacksonville District's most cherished projects:

During the early 1970s the environmental pressure was intense. In particular three Corps projects were blocked; The Cross Florida Barge Canal, the channelization of the Kissimmee River, and the protection of the Everglades' water supply. The halting of the Kissimmee was especially significant for the Corps, because they really didn't see this one coming (Buker, 1997a).

The Jacksonville District was faced with the fact that its civil works mission would be forever crippled if it did not do a better job of dealing with the environmental impacts of these projects. Like other Districts, Jacksonville's first attempt at rectifying this problem was the establishment of a Planning Division that was independent of its Engineering Division. In Jacksonville, this spin off occurred during the command of Colonel Alfred Devereaux in 1982.

The primary goal of Devereaux's decision to create a Planning Division was to increase his involvement in the planning process:

We took out from Engineering Division, the planning function, and formed a separate Planning Division. Eddie Salem is the first Chief of that Division. The

purpose of this was to increase the District Engineer's involvement in the planning process (Devereaux, 1984).

The shift also had the effect of making it easier to integrate environmental factors into the planning process as stated by Stuart Applebaum, Chief of Jacksonville's Ecosystem Restoration Section:

The process of planning became more interdisciplinary, instead of a plan being formulated and then sent to the environmentalists, the environmentalists were part of the planning formulation (Applebaum, 1997b).

The creation of the Planning Division at the Jacksonville District significantly enhanced the method by which environmental issues were integrated into the civil works mission.

During the late 1980s, the District adopted the organizational changes brought about by WRDA-86 and WRDA-88 including cost sharing and the implementation of project management. The integration of the project management into the Jacksonville District came in 1988, after Corps of Engineers Headquarters issued the directive to implement the program. The approach which basically involves the oversight of a project by a team from cradle to grave is firmly established in the District's bureaucratic structure. The establishment of the position of Deputy District Engineer for Project Management was established in 1988 during Colonel Herndon's tenure. The creation of this position lent credibility to the program as it put the individual heading the organization as the senior most civilian position in the district level. The approach was invaluable for the District as pressure began to mount for the development of a new feasibility study for the Kissimmee River restoration as Colonel Herdon explains:

In working on the Kissimmee River I had numerous opportunities to be chastised by the press and by Congressmen because of the failure of the Corps of Engineers

to undo the damage that we had done. . . . Congress passed a provision of the Water Resource Development Act of 1986, Section 1135, which provides for the Corps of Engineers to conduct an environmental demonstration project on previously constructed projects to show that we could enhance the environment of some of our previously constructed projects. There is no doubt in my mind that this portion of the Bill was inserted with the Kissimmee River in mind. We nominated the Kissimmee River as our nominee for the Section 1135 funds and that nomination went forward from the Chief of Engineers to the Assistant Secretary of the Army for Civil Works. It was determined by the Executive Branch under the Reagan Administration that it was an inappropriate use of federal funds to conduct such an environmental demonstration project and no projects were nominated to Congress as a result of that decision. Congress then appropriated two million dollars for use by the Corps of Engineers to enhance the Kissimmee River. The money was never allocated by the Office of Management and Budget to the Corps of Engineers for use and therefore, I am being blamed for not carrying out the will of Congress and improving the Kissimmee River (Herndon, 1989: 18).

Although powerless to act without funding, the Corps was trapped in the middle of a ideological fight between the Reagan Administration and Congress dealing with funding environmental restoration projects.

With the incoming Bush Administration the project was once again revived and this time the Corps was under the gun to move on the project. The situation was tense as Senator Bob Graham who used his influence to fund the study in the WRDA-90 legislation included a provision that the Corps would have to have its final report submitted to Congress no later than April of 1992:

The Kissimmee has become one of the environmental focused projects of 1990. Of late, Congress has passed Legislation requesting that the Corps investigate the feasibility of restoring the river to its natural course and providing the flood control and navigational amenities via other means, other than the 30 foot deep, 250 to 300 foot wide C-38 Channel. . . . For civil works projects, it normally takes two to three years in the development phase, then another two to three years in the execution phase. . . . In less than six months, the District attacked the project and provided a draft feasibility report and environmental impact statement. The feasibility report is now at the South Atlantic Division for review and will

soon go to Washington for its review. In intent is to have the Chief's report by the first of April 1991 (Malson, 1991: 2).

In order to meet this deadline the project management organization within the District put together a team of specialists who were dedicated to this project full time (Buker, 1997b). This group which included individuals with environmental backgrounds completed the study in record time.

While the district was undergoing the structural and administrative changes associated with cost sharing and project management the incoming District Engineer, Colonel Terrance Salt was working under Lieutenant General Hatch at Corps Headquarters. Hatch viewed the environmental restoration as a new mission for the Corps. Before Salt moved down to Jacksonville to take command as District Engineer, he met with both high level military personnel and political appointees about the projects of importance to Jacksonville. The results of these conversations indicated that the Kissimmee River and Everglades restoration were two areas where he would get support:

Before I began my tour in Jacksonville, I met with Ed Dickey, the Assistant Secretary of the Army for Civil Works. I asked Dickey if the Corps and the Bush Administration were serious about the Kissimmee River restoration. Dickey said both groups were very interested, and I would need to do two things to get the project funded. First, I would have to make a compelling case that the Kissimmee River restoration is in the national interest. Then I would have to make a case that the money spent on the Kissimmee was more important than if the money was spent elsewhere (Salt, 1998).

With the go ahead from the Corps Headquarters and the Bush administration Salt began an intensive effort to get the program initiated. By 1994, the first work on the restoration effort began near Lake Okeechobee. Although the demonstration project

that included a test fill of the canal washed away during heavy rains, the activities provided the groups associated with the effort an idea of just what was need to perform the restoration (Buker, 1997b).

Conclusion

The impact WRDA-86 and WRDA-88 had on the District's Civil Works mission was significant as sponsors took a much greater role in the civil works process (Ruess, 1997). As stated by Stuart Applebaum, "If a contributing sponsor had an environmental agenda, and was putting money or resources into the project, then the Corps was forced to look at the environmental aspects of the project (Applebaum, 1997b)." WRDA-86 also had the additional impact of lowering the civil works projects in both number and size as the pool of Corps' partners shrank due to the additional fiscal constraints imposed on the process (Ruess, 1997).

Although project management has not had the institutional impact that the separation of the planning function from the Engineering Division had on the organization (Applebaum, 1997b), it still has changed the way environmental issues are integrated into the civil works process. As Bo Smith points out:

Project Management has definitely changed the way environmental issues are considered. In the old days everything worked in a planned and structured process. With project management we look at the entire project. I can't see how we could do business any other way. In fact environmental issues are now just part of the process (Smith, 1997b).

The general consensus within the Jacksonville District is project management has been fully integrated into the organization. When Senior management within the

District were asked how this impacted the organization from the standpoint of more involved environmental policy the results are mixed. The benefits of having a project management approach tended to focus on a more efficient civil works process that is geared to a higher level of customer satisfaction. Even if the benefit of project management is a smoother more efficient process, it assists in the integration of environmental issues in the process. This ensures that environmental issues are considered throughout the civil works process, and most importantly during the period of time when proposed solutions are being considered.

Chapter Conclusion

The restoration of the Kissimmee River is an example of the new politics associated with water resource development. The project, which includes cost sharing partners and political sponsors required the Corps to increase both their responsiveness as well as the efficiency in the civil works mission. Without the implementation of the project management approach the Corps would not have been able to meet the specific deadlines imposed by Congress for the completion of the feasibility study.

The next chapter examines how the Corps continued down the path towards the inclusion of environmental restoration as a core mission as it becomes involved in the restoration of the Everglades. The organization builds upon its newly developed skills in the area of project management and applied them to the restoration effort as part of the Central and South Florida (CS&F) restudy. Additionally the Corps used its capabilities in the area of information management to bring the various groups involved

in the restoration effort together. These two efforts have resulted in the Corps playing a vital role in the Everglades restoration project.

CHAPTER VI

PUBLIC PARTICIPATION AND INFORMATION MANAGEMENT

Chapter Overview

The Florida Everglades are the final link in the series of rivers, lakes, streams, and wetlands that comprise the lower half of Florida. This being the case, the actions that occur further up the system inevitably impact the Everglades. So although the Everglades National Park (ENP) was created in 1947 with the goal to protect and preserve a large section of the natural ecosystem it was not until the early 1990s, when federal, state, and local interests joined together that the battle for the preservation of the Everglades began.

This chapter explores how the various groups interested in the restoration of the Everglades came together and the new role the Jacksonville District plays in the restoration effort. Special emphasis is placed on the restudy of the Central and South Florida Water Resource Development and its role as the basis for the current initiatives dealing with ecosystem restoration in Florida. The chapter is divided into five sections. The first section reviews the evolution of water resource development policy in South Florida. The second section examines the Corps' role in the Central and South Florida restudy project. The third section evaluates the Corps' role in the Everglades restoration from the perspective of public relations. The fourth section examines how innovative technology is being used to facilitate the Everglades restoration. The final section presents a summary of the chapter.

Water Resource Policy in South Florida

Even though the entire Florida ecosystem consists of mangrove swamps, huge shallow lakes, meandering rivers, and pristine freshwater springs, what is most commonly associated to Florida is the Everglades. Immortalized by Marjory Stoneman Douglas' book, *The Everglades: River of Grass*, the Everglades system covers the entire bottom half of the state. In 1947, the Central and South Florida Project for Flood Control and Other Purposes (CS&F), was created so that man could get a better handle on the flooding that occurred as part of Florida's natural water cycle. For the Everglades the resulting effort transformed the area into four distinct land forms. The first is the natural area protected by the Everglades National Park. The second area includes local Water Conservation Areas (WCAs) used to restore local aquifers. The third area the coast line, has canals paralleling it to prevent flooding. Finally, an area adjacent to the national park approximately the size of Rhode Island was drained in the late 1950s in order to make room for agricultural interests. This area known as the Everglades Agricultural Area (EAA) has vegetable and sugar cane farms (DeWitt, 1994).

Aside from the fact that each of these areas had their own special interests the problem for the Everglades is its survival depended on the politics of water. For example in times of drought water is given to the urban and agricultural interests. In times of heavy rains, water is often either shunted out directly to the ocean depriving the area of a stockpile of water, or run through canals into the Everglades resulting in wide scale erosion and destruction of habitat (Buker, 1997b).

Far more insidious to the Everglades was the unseen threat of nutrients such as nitrates and phosphorus in the water. The indigenous grasses that make up the Everglades live in water with a phosphorus content of around 7 parts per billion (ppb). But by the 1980s, the water running into the Everglades from the EAA contained phosphorus levels of close to 100 ppb. The problem this created was it upset the traditional balance of the ecosystem:

The prairies are an oligotrophic ecosystem -- that is, a low-nutrient environment. This means that when phosphorus is added to the water, it provides a fertilizer that boosts the growth of the kinds of vegetation that can absorb the phosphorus and grow quickly. Specifically, cattails supplant saw grass, and different kinds of algae form. The marsh becomes muddier, there are fewer fish, and thus there are fewer birds. The algae stinks (Dewitt, 1994: 130).

The Lawsuit

On October 12, 1988, a shift occurred that drastically changed the political landscape in South Florida when Dexter Lehtinen, the United States Attorney for South Florida, filed suit against the South Florida Water Management District (SWFMUD) and the State of Florida. The lawsuit centered on SWFMUD's failure to obtain state water quality permits for the pumps that discharge water from the canals leading from the EAA to the Everglades. A third party, the sugar growers were not named in the suit but were involved because it was the drainage from their fields that was creating the problem. The lawsuit was unprecedented for a number of reasons including it basically had the federal government suing a State to enforce its own laws. In addition, the pumps in question were actually owned by the Corps of Engineers, but were leased to SWFMUD:

The role of the United States Army Corps of Engineers was a major weakness of the lawsuit. The corps engineer responsible for supervising the project had not been consulted about the lawsuit before it was filed, and if the corps acknowledged its responsibility for the pumps, the case might collapse. If Lehtinen were forced to include the corps as a defendant because it owned the pumps and set the regulation schedules for them, then he would have no case because the federal government could not sue itself. The whole matter would be an internal administrative issue, not an issue for the courts (Dewitt, 1994: 147).

In 1989, the Department of Justice convened a meeting in Washington D.C. with: the Department of the Army, the Department of the Interior, and the Department of Agriculture, to unify the federal position on the lawsuit. At the same time the State of Florida was actively attempting to find a solution to the lawsuit. Finally in 1991, a settlement was reached that included the expansion of a buffer zone between the EAA and the Everglades National Park. Additionally the sugar growers agreed to give over \$200 million towards the purchase of the buffer area and to maintain a zero added factor of phosphorus discharge into the Everglades.

The Political Alignment

The lawsuit and subsequent settlement produced a major realignment in South Florida water politics, one which cast the Corps in a totally different role:

In addition to the legal provisions, the settlement made a fundamental change in the political situation. When the district [SWFMUD], the state, and federal agencies signed the settlement, this act put them all on the same side of the table. Thus the iron triangle of district--sugar--corps was broken, and a new alliance of district--state--corps--environmentalists--park refuge emerged. In Bob Dreher's [of the Audubon Society] words "It is getting very crowded on our side of the table (Dewitt, 1994: 166)."

The realignment was given even more support when the Clinton Administration made the Everglades restoration a top priority of the administration. Carol Browner who was the head of Florida's Department of Natural Resources, then a staffer to Vice President Gore, and finally the head of the Environmental Protection Agency was instrumental in educating the administration on the Everglades (Cyr, 1998). In addition, the newly appointed Secretary of the Interior, Bruce Babbitt, made the restoration of the Everglades a top priority emphasizing a new approach towards ecosystem management.

In April of 1997, the Everglades restoration project officially began when a 66 square mile area South of Lake Okeechobee was converted into a filtering marsh. The intent of this project was to put a buffer zone between the sugar growers and the Everglades National Park. The project still remains controversial as the groups involved in the project have different goals:

Wednesdays ceremony [to begin the restoration effort] brought together many of the parties that have been at odds: the district [SWFMUD], the Army Corps of Engineers, and U.S. Sugar, plus representatives of sugar giant Flo-Sun and the Seminoles, whose cattle fields are just south of the site. Absent were leaders of most environmental groups, many of whom are preoccupied with the closings days of the legislature. . . . One absent activist said she still objects to many features of the project, including the fact that sugar growers are paying only \$233 million of the costs. That issue is expected to land soon before the State Supreme Court (*Palm Beach Post*, 1997).

Although the Corps' role in the restoration of the Everglades will undoubtedly include many of the activities that are traditionally performed in its civil works mission the Jacksonville District has transcended this role, and moved into new areas such as public outreach and coordination. The next section examines how the Corps which was tasked

by Congress with the development of the Central and South Florida (CS&F) restudy, used this effort to demonstrate a new level of involvement in ecosystem restoration.

The Corps and the Restoration Effort

Fresh from the successful completion of the Kissimmee River restoration feasibility study the Corps was once again tasked with examining possible methods by which traditional projects could be altered so that their traditional tasks were performed in a more environmentally friendly manner. The target this time was the Florida Everglades, and included evaluating the current goals associated with agriculture, urban, and environmental interests. The restudy became the platform by which the Clinton Administration, as well as the Congress, set out to make South Florida the model by which sustainable development could be demonstrated. This section examines how the Corps performed this task.

The Genesis of the Restudy

The restudy initiative came about as part of a briefing by the South Atlantic Division early in Colonel Salt's tenure:

Within a month of my arrival at Jacksonville, I met with the Division Engineer's staff in Atlanta to discuss the situation in Florida. Their recommendation was that we needed to totally rethink the strategy of how water resource issues were evaluated. Thus we put together a proposal in the budget to perform the restudy. At the time, the Bush Administration would not support the restudy. When the Clinton Administration came in, they put the proposal on hold until they could evaluate them on a case by case basis. But during the Everglades coalition meeting that year, Bruce Babbitt came down. The environmentalists knew what I was trying to do, so they asked Babbitt to discuss the restudy with me. Babbitt was

so interested in the project that he convinced the Corps Headquarters to reprogram funding for the restudy (Salt, 1998).

In July of 1993 the project was officially authorized by Congress:

The study, authorized by Section 309(1) of the Water Resources Development Act of 1992, sought to improve the quality of the environment, protect the aquifer, and conserve urban water supplies of the whole CS&F operation. This reexamination will decide the feasibility of structural or operational modifications to restore the Everglades and Florida Bay ecosystems (Buker, 1997b: 183).

To meet the objectives and timetables set out in the restudy task the Corps used their experiences with the Kissimmee River restoration, and developed a team to perform the restudy:

At the local level, the Jacksonville District was responsible for the reconnaissance study. The district's study team included civil engineers, hydraulic engineers, cost engineers, biologists, community planners, economists, geographic information system specialists, public involvement specialists, real estate specialists, and technicians. These people came from the district and other Corps activities on temporary duty assignments. Additional personnel drawn from other agencies, including SWFMUD, the National Park Service, the Fish and Wildlife Service, and the National Marine Fisheries Service. All members assigned were full time, free from competing priorities, to work on this study (Buker, 1997b: 184).

The study team eventually became the Ecosystem Restoration Section located within the Planning Division. The restudy effort was considered by those within the Corps to be a benchmark study:

The study we are doing downstairs [in the district office building] is one of a handful of seminal environmental restoration studies going on in the Corps. The Louisiana wetlands study is one. The Chesapeake Bay study is another one. And the study downstairs is the third. Our work is a very deeply considered study analyzing the restoration of the ecosystem. . . . The study is finishing now, and will set a direction for the Corps (Salt, 1994: 33).

The restudy had two direct impacts on the Corps as an organization. First it helped establish the Corps credibility in the area of ecosystem restoration. This was

demonstrated when at the end of his tour, Colonel Salt retired from the Army and became the executive director of the South Florida Ecosystem Restoration Task Force. The task force which was created by the Clinton administration includes the assistant secretaries of five federal agencies involved with water resource management in Florida, as well as state, local, and tribal organizations.

The second impact the restudy had on the District was it generated a need for skills that went beyond the Corps traditional civil works functions. One skill that was especially needed was in the area of public involvement. Because the restoration effort would require the cooperation of so many different groups a public involvement strategy needed to be implemented to ensure that the restoration process would not be bogged down in partisan squabbles. The next section describes how the Jacksonville District which had a history of being progressive in public relations, took its public outreach program to a new level.

Public Relations Within the Jacksonville District

As with most changes related to environmental restoration at the Jacksonville District the need for a coordinated and effective public relations program did not come about until NEPA. With the empowered environmental movement using NEPA to block the progress of civil works projects the District was faced with the delay and in some cases a total blockage of its civilian mission. It was Colonel Wisdom, District Engineer in the early 1970s, who first utilized the public relations office in dealing with environmental groups:

Just before coming to the Jacksonville District, I met with the Undersecretary for the Department of Interior who was Nat Reed, the Honorable Nathaniel Reed. Nat was able to give me insight into the problems confronting Florida from an environmental perspective. He also took the trouble to write a letter of introduction to all the major contacts that he had in Florida in the environmental community and introduced me to them. This was a beautiful entree. I was able to move into the environmental community posthaste. And I had a wonderful early experience in meeting with these people. The lines of communication had not always been that complete, but as it turned out we did establish a good line of communications and a constant dialogue (Wisdom, 1978: 5).

Wisdom moved the public affairs office up to the top of the District organization by making it a separate division with the head of the organization reporting directly to the District Engineer. Wisdom's directive towards his Director of Public Affairs was to become knowledgeable about local leaders, attend public functions with him, and to keep him informed about the people who were present (Buker, 1997b).

After Wisdom retired as District Engineer public relations took a turn for the worse. State and local officials, and environmental organizations expected the Office of the Chief Engineer to send a replacement for Wisdom that shared his environmental zeal. This did not pan out as the next District Engineer, Colonel Adams, turned out to be more inclined to promote traditional Corps' interests. Matters were made worse when Adams got into a confrontation with the State of Florida over the speed in which the State was processing the Corps' dredging permits. These delays which resulted in funding being de-obligated because it was not allocated in time resulted in Adams going to the state capitol to meet with the Governor. This in turn ended up antagonizing the State regulators who felt the District had gone back to their traditional mode of operation (Buker, 1997a). Upon his arrival Adam's successor, Colonel Deuveaux,

made it a point to meet with Governor Graham to discuss how the State of Florida and the Jacksonville District could work together. The attention helped smooth things over and the relationship again turned positive.

Hurricane Andrew - New Public Relations

From an environmental perspective, the most important contemporary public relations event, was the restoration of South Florida following Hurricane Andrew in 1991. The storm and its destruction put the District in the national spotlight as it coordinated the cleanup and restoration of the community. According to Jacquelyn Griffens, Director of the Public Affairs Office:

The day after the storm hit, the public affairs people were down in South Florida, we assisted in getting the word out as to what was going on, and the progress being made towards the restoration of the community. We stayed until the area was completely recovered and the schools re-opened (Griffens, 1997).

Among other things the cleanup altered the traditional modes of engagement between the public and the District. Before Andrew the typical interaction between the District and the outside world was defined by professional relationships. For example an individual working on a regulatory project would work with their counterparts at the state and federal government. With Andrew this changed as individuals found themselves in the spotlight giving interviews and dealing directly with the media. This led to an increase in the number of individuals within the District trained in dealing with the public (Griffens, 1997).

That same year at the Everglades Coalition Meeting in January 1991, the scheduled luncheon speaker failed to show up. Colonel Salt who was supposed to be giving a presentation later that day took his place and delivered an inspirational speech on how the Corps was interested in restoring the Everglades:

I basically challenged the environmental groups who were at the meeting to quit complaining about the various projects, and to start looking at the accomplishments that had occurred in the area of environmental restoration. I made sure they got the message that the Corps was not the problem. The Corps is just a bunch of engineers who are given tasks, therefore tell us what to do and we'll do it. I told them to hold me to task, and invite me back in a year, if things hadn't progressed, then they could yell at me. At the next meeting, there was nothing but praise for what the Corps was doing (Salt, 1998).

As the speech progressed Salt took off his jacket, then his tie, then rolled up his sleeves. The message was that the Corps was ready to roll up its sleeves and get to work on the restoration of the Everglades. The speech combined with the positive role portrayed by the Corps after Hurricane Andrew demonstrated how the Corps was changing its public image.

After Andrew and the Everglades Coalition meeting the Corps became much more active in promoting the organization's capabilities to the general public. Sometimes the effort did not go as planned as Stuart Applebaum recalled:

At the start of the Central and South Florida Restudy we held a series of workshops that were intended to reach out to the public and educate them on what the whole effort was about. At the first workshop we wanted to show the public that we were working in a new way. So instead of showing up to the meeting wearing business suits we wore jeans and tee shirts. The tee-shirts had the restudy logo on the front and on the back had a pair of ruby slippers and the saying "You're not in Kansas anymore." The environmentalists loved it but some of the farmers who were at the meeting were offended. They felt the reference to Kansas was a put down towards farmers. In a lot of ways the episode was more of a major shock to the

establishment who were not used to seeing Corps people acting this way. At the next workshop we wore plain white tee shirts (Applebaum, 1997b).

Aside from the "tee shirt" incident the Corps used these meetings to demonstrate its willingness to gather public input, and play the role of an honest broker of information. These changes reflect the very different nature of environmental restoration projects compared to traditional civil works projects. With environmental restoration, problems often have multiple solutions each with its own distinctive sets of advantages and disadvantages. Thus the Corps has shifted its function from finding the optimal engineering solution to facilitating a dialogue between interest groups in an effort to reach a consensus. The shift in attitude has expanded to include technological advances developed by the Jacksonville District. The next section examines the role information management has played in the Corps facilitating public participation in environmental restoration process. This relationship is a defining role in the way the public interacts with the Jacksonville District.

Information Management and the Jacksonville District

During the late 1980s, the explosive growth and use of personal computers in the Jacksonville District transformed the organization and the methods by which it performed its missions. From the technical standpoint computers simplified the process of project engineering. According to Richard Bonner, Deputy District Engineer for Project Management:

Computers made the process of planning much easier, models could be used to simulate projects with results that were quicker and more accurate than traditional estimates (Bonner, 1997).

Just as significant to the organization was the use of computers for interfacing with the public. This section explores the impact information systems had on the organization from the public relations perspective. Special emphasis is placed on understanding the impact as it relates to environmental programs.

Information Management

Information Management (I/M) is a recent addition to the Jacksonville District organization. The organization underwent a transformation in the late 1980s, when Colonel Robert Herndon, recruited Jim Cobb from the Lower Mississippi Valley Division to become the Chief of the Information Management Division (Herndon, 1989). Before Cobb arrived the typical use for computers was engineering studies. Information was sent to remotely located computers that processed the information, and sent it back to the original site (Sutton, 1997). Control of the computing systems was limited to a few individuals within the I/M Division, and access to the computers could only be achieved through dumb terminals. With Cobb's arrival the role of computers changed. One of his first initiatives was to get as many personal computers as possible into the District. According to Cobb, the greatest revolution information management at the District was the use of personal computers and their networking in the late 1980s and early 1990s (Cobb, 1997). Although budgets constraints made the goal of large scale procurement of personal computers remote, the Hurricane Andrew restoration

provided a windfall for the District as the computers that were purchased as part of this effort were transferred to the Jacksonville District. This surplus of computing systems was enough to provide a 1 to 1 ratio of computer systems to personnel in the District by 1993.

Among other things the networking of the Jacksonville District assisted in the tearing down of the "organizational stovepipe". In particular, the use of electronic mail and networking allowed information to be passed outside of established protocols, creating a new paradigm of how management viewed individuals and information. As stated by Stuart Applebaum:

What we are learning is we no longer can control the flow of information, as managers, our job is to make sure people are better judges of how to manage information. This forces us to empower people, and is totally different from the "command and control" management structures (Applebaum, 1997a).

The impact associated with the free flow of information did not impact only the internal organization it extended to the Corps' interaction with the public. Applebaum goes on to say:

The development of this new environment is both good and bad. On the good side it ensures that there are no screens, all information is available. On the bad side if a draft report is published that is premature the public may overreact to information that is not well thought out (Applebaum, 1997a).

With the new method of public involvement the Internet brought to the District the question of how different groups within the public should be treated in regard to requests for information became an issue. In the Jacksonville District there are three types of public: cost sharing sponsors: federal, state, local, and tribal organizations; and the general public (Sutton, 1997). Currently the first two groups are given much

greater access to the individuals within the District. This does not mean that the general public is limited in their ability to access the District. By 1995, the District had developed and put out for public viewing an Internet Website. The site marked a defining point in the Jacksonville District as a new form of public access was created. As seen in Table 6.1, the site has proven to be highly used with over 13,000 visits to the site between June and September 1997. In addition to individuals visiting the Internet site a system has been set up to respond to queries made via electronic mail. If an individual has a question, the information is routed to the public relations organization who then sends the information to various individuals within the organization who respond to the requests (Cobb, 1997).

Conclusion

In conclusion, the Information Management Branch has been highly effective in integrating and exploiting the use of personal computers to enhance public participation within the District. But the impact of information management did not stop there. The next section examines how the Jacksonville District used its skills in information management to assist in the restoration of the Florida Everglades.

The Establishment of the Information Management Subgroup

The District's integration and use of information management has enabled the organization to solidify its role as the information broker for the restoration of the Florida Everglades. The events that led to this occurred in the early 1990s, when the

South Florida Restoration Working Group appointed Jim Cobb, Chairman of its Information Management Council. This appointment has given the District the opportunity to assist the Working Group to bring together the various stakeholders associated with the Everglades restoration. This section examines how this occurred as well as its implications to the Jacksonville District.

The Website

The process by which the Corps became the architect for the information and public access missions of the South Florida Environmental Restoration Working Group is best told by Jim Cobb:

When the working group was established it only had the working group itself and a science committee. The problem the group faced was a lot of money was being spent but the citizens didn't see any results. So the working group decided to form a public information sub-group to help with public relations. Colonel Salt asked me to be on the committee. Most of the people on the committee were public affairs types who were interested in getting the message out via traditional mechanisms such as press releases. As part of the original planning process I made sure that an Internet Homepage was included as part of the public relations effort. . . . I then went back to the District and we set out to develop a homepage, at the next meeting the discussion again turned to how the committee could get the message out. I informed the committee that there had been over 34,000 hits on the website in its first three months of operation. This convinced the group that this was the best way to go. Since that time, we have moved the site out from the Corps server so it doesn't look like the site is part of the Corps (Cobb, 1997).

The working group was so impressed by Cobb's work that they created an information management subgroup, and put Cobb in as the head of the organization.

In addition to the information management subgroup the District is assisting the working group in tackling its most significant problem, finding a method to coordinate

and facilitate the open discussion of alternatives for the restoration of the Everglades. As noted by Colonel Miller, "One of the biggest problems we have with environmental restoration, is people have the desire to participate but lack the resources needed to be fully active (Miller, 1997)." To assist the working group in overcoming this hurdle the District has aided in the development of a discussion database, a second generation use of the Internet that significantly reduces the costs associated with public interaction.

The Development of the Discussion Database

The current strategy for the restoration of the Everglades requires a consensus to be achieved by the interested parties as to what actions need to be performed and how to implement the changes. But the problem the working group faces is as with most forms of public participation individuals with limited resources are either unwilling or unable to commit resources. This problem is accentuated with the Everglades due to the many interest groups, the large geographic area, and the technical complexity of potential solutions. To address these problems the Corps has developed a database that allows the public to view various restoration strategies and then comment on them. Both the strategies and comments are then posted and individuals can comment on either one of them. In addition, the system is set up to allow for real-time communication as an electronic town forum. The results of this work has extended the role of citizen participation beyond the bounds of what could physically occur in a traditional meeting forum (Sutton, 1997).

The development of the discussion database is an example of how innovative methods of information management developed by the Jacksonville District are being used to solidify the Corps' relationship to environmental interests. The concept of using computer systems for model evaluation shows just how much faith both the Corps and the environmentalists have in the use of computing systems. The restoration effort is dependent not only on innovative environmental strategies but also state of the art uses of information as Stuart Applebaum points out, "The restudy effort (of the Florida Everglades) is entirely dependent on the Internet for the technical evaluation of models (Applebaum, 1997b)."

Chapter Conclusion

The development, integration, and use of information management has drastically altered the methods by which the Jacksonville District communicates both internally and externally. This in turn has altered both the District's internal organization and the methods used in performing its missions. Within the District benefits of the information management revolution are mixed. There is widespread agreement that the development of tools such as electronic mail has drastically altered daily jobs by increasing the access of individuals who are located in remote locations and by the significant amount of time dedicated to responding to messages.

Beyond electronic mail the impact of information management is far less concrete. A number of senior managers within the District expressed the belief that video conferencing, and electronic requests for information, were less effective than

traditional mechanisms of communication. These individuals stressed the importance of “being there” or talking directly to a person as being more important than linking individuals remotely. These issues are currently being evaluated by the District’s Chief of Information Management who is evaluating the use of desktop video conferencing as the next generation communication device.

This case demonstrates how the Corps of Engineers has been able to use its technical capabilities to carve a niche in the Everglades restoration effort. Individuals within the District such as Jim Cobb, and Stuart Applebaum, play vital roles in the restudy of the Everglades as well as the South Florida Environmental Restoration Working Group. Having these individuals in these positions benefits the Jacksonville District in that it allows the organization to take a lead role in the restoration of the Everglades.

CHAPTER VII

RESULTS AND CONCLUSIONS

Chapter Overview

This chapter presents the results and conclusions of the dissertation based on the research questions posed in Chapter I. Specific emphasis is placed on how the key aspects of the study can be applied to public organizations. The first section examines the general atmosphere that led to the change in the Corps' organizational environment. The second section examines the four research questions posed in Chapter I as they pertain to the Corps' Jacksonville District. The third section evaluates how the Corps as an organization was impacted by the environmental movement. The fourth section examines how bureaucratic organizations can perpetuate their organizational missions by implementing strategies to mitigate external threats. The final section presents the conclusion to the dissertation.

The Contemporary Environmental Movement

As stated in Chapter I when dealing with changes to its environment organizations must determine both the magnitude and the duration of the change. If the magnitude of the change is relatively small the organization may opt to do nothing, and live with the change. If the change is short term in nature the organization may decide to wait things out. On the other hand, if the change is large or long term in nature the organization may decide to develop strategies to mitigate the external pressure. This

section evaluates the magnitude and direction of the change the environmental movement created by addressing three major shifts in the political fabric of the nation; the federal government's institutional shift in the 1970s, the movement towards federalism in the 1980s, and the movement towards sustainable development in the 1990s.

The Institutional Shift

Although there is no absolute method by which an organization can predict the magnitude and staying power of a change to its environment there were definite indications in the early 1970s, the environmental movement altered the very fabric of public policy. The most telling evidence of this change was the institutional shift in the three branches of government. This section demonstrates how these shifts altered the political environment that organizations such as the Corps of Engineers exist in.

In the Executive Branch, the bureaucracy began to grow as new agencies were being created and old ones were renamed to reflect the growing environmental movement. In an early assessment of the impact the environmental movement had on the federal government, *Congressional Quarterly*, made the following observation:

Within the Executive Branch of the Federal Government, offices and agencies dealing with different aspects of environmental affairs were stepping up their activities. In other instances, new divisions were created or existing ones reorganized to tackle environmental problems (*Congressional Quarterly*, 1970: 1137).

In addition to the structural changes the president also became more involved in environmental policy. For example, President Nixon forced organizations such as the

Corps of Engineers to re-evaluate civil works projects such as the Cross Florida Barge Canal. His rationale for this action included the fact the project would have severe environmental impacts on Florida's water resources.

Within the Courts, there was a movement afoot to expand the interpretation of legislation such as the Rivers and Harbors Act of 1899, to include environmental impacts. The court case of *United States v. Republic Steel*, resulted in a reinterpretation of the Refuse Act that made it the most significant legal method of protecting the nation's waterways from pollution. Additionally, in 1975, the Courts forced the Corps to expand their regulatory mission by interpreting the Section 404 of the Clean Water Act of 1972, to include the regulation of all waterways. Finally, the Courts gave environmental organizations the ability to force federal agencies to comply with NEPA and the generation of Environmental Impact Statements.

Perhaps the most significant changes of all occurred within Congress where the institution began to realign itself to include environmental matters:

The environmentalists in Congress cut across the lines of most traditional alliances -- party affiliation, conservatives and liberals, regional interests. "We're taking votes that we would not have taken one, two, five years ago," said an aide to a conservation minded Senator. He cited the public works appropriations bill at a time when Congress insisted on giving Administration \$600 million more than it wanted. . . . Another potential development on Capital Hill reflected the new mood. Some of the privileged agencies in the Executive Branch were being scrutinized more intensely than ever before. The Senate Public Works Committee was trying to catalogue -- for the first time in years -- the specific project requests for the Army Corps of Engineers (*Congressional Quarterly*, 1970: 1135).

This shift manifested itself in a number of actions including the discontinuing of funding for civil works projects in the biannual Water Resource and Development Act,

and the expansion of environmental regulatory programs. In conclusion, the 1970s was noted for the institutionalization of environmental policy within the federal government. The next section examines how the Reagan Administration, and the implementation of new federalism impacted federal organizations from an environmental perspective.

Federalism and the Environmental Movement

During the 1980s, a fundamental shift occurred in the relationship between the federal and state governments as the Reagan Administration introduced the era of new federalism. This shift had two major impacts on environmental policy. First, it shifted the development of environmental legislation to the States. Second, it caused non-federal stakeholders to incur a greater share of the cost of environmental restoration activities. This section examines how these two factors impacted the environmental climate faced by public organizations.

As stated in Chapter II during the 1980s, the Reagan Administration made a concerted effort to limit the role of federal government in matters pertaining to the environment. Although the federal government was limiting its role states such as Florida, picked up the slack by introducing legislation to fill in the gap. The Save Our Everglades Act; the Florida Local Government Comprehensive Planning and Land Development Regulation Act; the Florida Surface Water Improvement and Management Act; and the Everglades Nutrient Removal Project were all enacted during the 1980s to further the cause of water resource development.

The second impact new federalism had on federal organizations such as the Corps was its the reliance on non-federal stakeholders to assist in the funding of water resource development projects. The Water Resource Development Act of 1986, introduced the concept of cost sharing for new development projects (Ruess, 1991). In the case of Florida the classic example of cost sharing was the restoration of the Kissimmee River. When the Corps generated a report stating the restoration effort would not meet federal benefit-cost guidelines the State stepped in and began a demonstration project on their own. By the time the Corps became involved in the project again they had to deal with the State as a cost sharing partner that had already chosen the restoration methods to be used. Thus the State dictated the strategy for the restoration effort. The next section examines how the federal government re-established itself as a leader in environmental policy as the concept of sustainable development grew in importance.

Sustainable Development

During the 1990s, a national and international awareness of the need for a balance between environmental, political, and economic concerns arose and became the cornerstone of the concept of sustainable development. Sustainable development a major theme of the Clinton Administration's environmental policy, used the Everglades restoration effort as a model for its implementation. A key aspect of the administration's commitment to the concept of sustainable development was the creation of the South Florida Ecosystem Restoration Task Force. The task force

includes federal, state, local, and tribal interests working together to set water resource strategies in Florida. The Corps spearheaded this effort with Colonel Rice, the Jacksonville District Engineer making "holistic governance" a centerpiece of his tenure. Work performed by the Corps included studies for the restoration of the Kissimmee River and the Everglades as well as the development of innovative information management methods to facilitate dialogue between the many groups involved in the restoration effort.

Conclusion

In conclusion, beyond NEPA in the 1970s, the federal government underwent a profound shift in the very structure of the institution. This realignment has carried itself into the 1980s as state and local governments took the lead in both environmental legislation and ecosystem restoration. In the 1990s, the federal government stepped back into the environmental realm but now shares power with non-federal interests. This realignment indicates that the bureaucratic organizations involved with activities that relate to altering the environment need to consider long term realignment strategies to ensure that their missions do not conflict with these changes. The next section evaluates how the Jacksonville District reacted to the organizational shifts caused by the environmental movement.

Organizational Change and the Jacksonville District

The rationale behind examining the Jacksonville District's adaptation strategies to threats aimed at its organizational mission is found in posing a much broader question. That is how do contemporary government organizations develop strategies to maintain and enhance their organizational mission given the increasingly turbulent environment in which they exist? This section evaluates this question based on the research questions put forth in Chapter I:

1. How has the implementation of environmental legislation beginning with the passage of the National Environmental Policy Act (specifically Section 102(2)(c)), fundamentally changed the Corps of Engineer's implementation of their core mission of water resource management?
2. How have these changes affected the Corps of Engineer's organizational mission?
3. How effectively have environmental issues been integrated into the water resource planning process, and is the process is more open?
4. What does the Corps' policy adjustments teach us about governance in a democratic society?

The Implementation of NEPA

Without a doubt NEPA and other federal legislation discussed in this dissertation impacted the methods by which the Jacksonville District carries out its civilian mission. Legislation such as NEPA (mandating environmental impact assessment), the Clean Water Act of 1972 (expanding the regulatory mission), WRDA-86 (introducing cost sharing), and WRDA-88 (introduced project management) all resulted in the District introducing structural changes to its organization.

NEPA was one of the primary reasons the planning function was separated from the Engineering Division which was ill equipped to perform environmental impact assessments. The Clean Water Act of 1972, forced the District to expand its regulatory mission to include all bodies of water in the United States. WRDA-86 forced the District to become more responsive to its partners which began to contribute financial support to projects. WRDA-88 solidified this responsiveness by streamlining the civil works process. In each case these structural changes were put in place mainly to diffuse the threats to the organizational mission. The results are a radically different Corps of Engineer's organizational structure today as compared to the organization in the 1960s.

Impact to the Jacksonville District's Organizational Mission

Although the impacts of environmental legislation altered the District's organizational structure this does not necessarily imply it altered its organizational mission. The opportunity always existed for the District to put the minimal level of effort into meeting the statutory requirements of the legislation. Thus there is a definite demarcation between the District which is legally bound to include the examination of the environmental impacts of projects, and the District which has adopted the role of restorer of the environment as a method to perpetuate its organizational mission.

At the Jacksonville District the change occurred when Colonel Salt, who was on General Hatch's staff, took over as the Jacksonville District Engineer. As stated by Bo Smith:

The Environment and NEPA were barriers to projects, they held up plans and disturbed projects. In fact they still disturb some in the District, who see the environment as being secondary to the rest of the process. The one significant event that occurred in the last ten years at the Jacksonville District was the fundamental shift by the District's leaders to emphasize environmental restoration as part of the organization's mission (Smith, 1997b).

This integration of environmental restoration into the District's organizational mission are examined in the next section.

Are Environmental Issues Integrated into the Water Resource Planning Process

Early studies in the 1970s that examined how the Corps reacted to NEPA proclaimed the organization to have fully integrated environmental policy into its civilian mission. The major indicator of this change was the establishment of organizations such as the Environmental Advisory Board and the massive influx of new employees with non-engineering backgrounds into the organization. From the standpoint of civil works many individuals within the Jacksonville District did not see the environmental impacts of Corps' projects as being fully integrated into the civil works process until the 1980s. The universal consensus is that NEPA forcing the District to separate the planning function from the Engineering Division made environmental impact assessment more relevant. But it was with the passage of WRDA-86 when the District began to address the environmental concerns of their cost sharing partners when the Corps became truly responsive. Finally, the implementation of project management made the inclusion of environmental impacts from start to finish a reality.

What Does the Corps' Policy Adjustment Teach us

The most significant conclusion that can be drawn from this study is the importance in demarcating an organization adapting because of the need to meet statutory requirements versus the desire to enhance its mission. The Corps' initial reaction to NEPA which included the hiring of a number of individuals with environmental backgrounds and the establishment of the EAB were reactions based on the statutory requirements of the legislation. Beyond meeting their legal obligations the Corps looked at environmental concerns as being counter to their organizational mission. On the other hand when General Hatch began to market the Corps expertise in the area of environmental restoration it became a method by which the Corps could sustain their organizational mission.

In the case of the Jacksonville District in the 1990s, the organization's leaders felt that without adopting a role in the environmental restoration of Florida the organization's mission would diminish. When this transition occurred the organization actually began to flourish. A universal comment made by District personnel was they enjoyed getting awards, and being appreciated for the work they did for the environmental community. Thus the integration of environmental restoration into the organization's mission became self perpetuating. The more work that was done the area environmental restoration the more positive support was generated by the community which in turn brought more work in the area of environmental restoration.

Conclusion

Although good governance can be achieved by legislative mandate such as NEPA the most effective and permanent method of bringing the “will of the people” to the government is through the permanent alteration of the bureaucracy. One of the reasons the Corps was able to make this shift is the military leaders within the organization are given assignments for a maximum of two to three years. Thus long-term bureaucratic stability of the organization is of less concern to District Engineers who tend to be more interested in creating short term impacts, and leaving a positive legacy on the organization. In the case of the Jacksonville District this phenomena manifested itself in District Engineer’s recognizing that adopting environmental restoration into its organizational mission could make an immediate impression on the individuals both inside and outside of the organization.

The Corps’ Organizational Mission

In the early 1970s, the Corps of Engineers attempted a number of actions to mitigate the pressure created by the environmental movement. Individuals such as General Frederick Clarke, the Chief Engineer understood the implications the environmental movement was having on the civil works mission, and actively attempted to bring various environmental organizations into the policy process. This section evaluates how the strategies employed by the Corps played out over the course of the contemporary environmental movement and impacted its organizational mission. Three time frames will be examined; the Corps and environmental interests during the 1970s; the impact of

new federalism during the 1980s; and the reintroduction of the federal presence in the 1990s.

Environmentalism and the 1970s

Clearly the initial strategies employed by the Corps to deal with the environmental pressures was twofold; first, bring environmental organizations into the policy process, and second, limit their power. Although this strategy was effective in cases such as the restoration of the Atchafalaya river basin the strategy proved to be ineffective from both an internal and external organizational perspective. From an internal perspective the Corps with its hybrid organizational structure had difficulty in adopting policy guidance generated at the Corps Headquarters from being transmitted and adopted at the district level. As Ruess pointed out in his study of the Atchafalaya:

Decentralization could be a disadvantage whenever the Chief of Engineers as in the case of General Clarke's initiative wanted to change the organization. Accustomed to certain procedures and disinclined to fix something that "ain't broke," district employees -- overwhelmingly civilian -- may resist orders from headquarters, or adopt them at excruciatingly slow pace. As Fred Chatry, the affable chief of the engineering division in the district, put it, "There was considerable reservation [in the New Orleans District] about the propriety of the Corps of Engineers entering into an agreement to halt certain work for which the Congress had made funds available and for which we had the authority to proceed (Ruess, 1998)."

Aside from the fact that the internal mechanism for implementing organizational change was inefficient the nature of the environmental movement made it highly unlikely that the strategy could be effectively implemented. As Clarke pointed out when he selected members to be on the original Environmental Advisory Board:

We looked mostly at groups such as the Sierra Club and the Audubon Society, and to some extent the League of Women Voters. The National Wildlife Society was one of those. The National Parks Association. There were a tremendous number of them; most of them local in character (Clarke, 1980: 202).

The problem the Corps encountered with the environmental movement was the fragmentation and local nature of the movement. Thus inclusion of the larger environmental organizations such as the Audubon Society, and the Sierra Club into the process failed to inhibit the smaller local environmental groups from stopping Corps projects based on the NEPA process. A classic example of this occurred when local interest groups delayed the dredging of Tampa Harbor because an EIS had not been performed for the area where the dredging spoils were being deposited.

New Federalism and the Corps

During the 1980s, the Corps organizational mission was impacted by the Reagan Administration's move towards federalism. The first impact this change in policy had on the Corps was civil works funding dropped precipitously during the early 1980s. By 1984, funding for maintenance on civil works projects was greater than funding for new projects. This statistic must have been devastating to the Corps as it saw its civil works mission, and its very identity disappearing.

When the Corps finally got the appropriations process back on track they were required to include cost sharing as part of the process. This in turn forced the Corps to meet the regulatory requirements that cost sharing partner had to abide by, which in general were greater than those imposed on the Corps. The second major shift that cost

sharing imposed on the organization was groups that could afford the cost sharing guidelines were not interested in the traditional civil works projects. Cost sharing partners such as the State of Florida were interested in tearing down existing civil works projects such as the Kissimmee River not building new ones.

The Re-emergence of the Federal Government

In the area of environmental policy the era of new federalism ended with Bush's "environmental presidency" and Clinton's "sustainable development." By this time the Corps presence as the federal organization tasked with water resource development had to accommodate the newly empowered state and local interests. In addition, the Corps was under pressure from Congress to develop a more efficient method to perform their civil works function. This pressure resulted in the development of project management which made the entire process more efficient, responsive, and cost effective. Finally in 1990, the Water Resources and Development Act included wording that stated that environmental restoration was now part of the Corps' organizational mission. Clearly the Corps was beginning to see the positive role and invaluable service it could provide the nation in the area of environmental restoration.

Conclusion

In the late 1960s, the long term impact of the environmental movement on the Corps, was beyond the comprehension of the organization. As Bo Smith, Chief of the Jacksonville District's Environmental Branch, recalled in 1969, his boss asked him to

comment on some newly passed legislation called the National Environmental Protection Act. He was especially interested in what impact it could have on the Corps. Smith read the legislation, and reported back to his boss, "The legislation has a lot of nice words, but really won't amount to anything." What the Corps did not see was the shift in the federal institutions that reflected the environmental concerns of the public.

The Corps realized that traditional civil works projects were losing popularity as projects that included tearing down of structural barriers became the norm. In many ways the Corps which once attempted to co-opt key constituents in the environmental movement became the outsider trying to define a role in the area of environmental restoration. In essence, the environmental movement became the co-opting element and the Corps was being co-opted into acceptance of the environmental restoration as a means to perpetuate its mission.

The next section examines how the experiences of the Corps can be applied to the question posed by the dissertation:

How can the leaders of a public organization judge whether or not a policy change that impacts their organizational mission is long-term or short-term in nature, and how can they judge the magnitude of the change?

Special emphasis is placed on evaluating this question from the perspective of its impact on governance.

Organizational Change and Contemporary Public Organizations

Contemporary public organizations are subjected to ever changing environments from which they must function. In order to perpetuate their missions they must be ever

vigilant in evaluating the magnitude of the changes which changes are permanent and which are short term aberrations. The case of the Jacksonville District and the environmental movement is a telling example of how organizations under pressure from their environment can learn to adapt and actually become stronger. Neither the environmental threat to the District or its implementation of change occurred overnight. Both phenomena were gradual in nature and magnitude. Colonel Salt, who is widely heralded as the person who implemented the organizational change in Jacksonville is quick to note that the District demonstrated a willingness and capability to embrace environmental restoration long before he became the District Engineer. In the 1960s, the Jacksonville District was a leader in enforcing the Rivers and Harbors Act of 1899, based on environmental impacts. During the 1970s, Colonel Wisdom was named "environmentalist of the year" by the Florida Audubon Society for his work in the area of environmental restoration. During the 1980s, Colonel Myers, instituted the restoration of the Saint Johns River which is widely seen as a precursor to the restoration of the Kissimmee River and the Florida Everglades. What can be learned by this is organizations can use the skills developed in the past to enhance their future.

If the Jacksonville District had opted to not participate in the restoration of Florida's environment there is no doubt that they would still be in existence today albeit in a much smaller role. The choice to participate had a positive impact on the District, the Corps lived up to their reputation as being an organization whose overriding goal is do what the nation asks of it. By falling back on this organizational commitment the Corps was able to overcome the psychological barrier of actually tearing down fully functional

civil works projects and replacing them with non-structural solutions. No longer does a engineer go out to a site, visualize a solution, and then develop a project. Today, the engineer is more likely to facilitate a discussion in that brings together various interests in hopes of finding a solution that addresses all of the concerns of the citizenry. For a democratic society this example of holistic governance can only be seen as a move in the right direction.

Dissertation Conclusion

A couple of tern eggs. This thought must have gone through the minds of the employees at the Jacksonville District when the Corps came under fire for destroying two Least Terns nests in the late 1980s. How can an organization whose mission is to build things survive if they have to worry about a couple of bird nests? To answer this question it is best to examine how the people associated with environmental movement in Florida conceptualize their role.

When I first met Estus Whitfield the most influential environmentalist in the State of Florida's government, I asked him what he thought of my idea of examining Florida's water resource management from the perspective of the Jacksonville District. After thinking about it, he said that it would not be a bad idea but a really interesting study would look at the ten or twelve individuals who are considered the heroes of the Everglades. These people including Marjory Stoneman Douglas and Nathaniel Reed, were fighting for the environment and against unchallenged development long before it became popular, and when the outcomes of their efforts were far from certain.

During my last interview of Colonel Rice at the Jacksonville District office, he gave me a tour of the organization so I could meet some of the many people who are credited with the transformation of the District. As we walked through the halls Colonel Rice mentioned a number of people in the District who were instrumental in the organizations change. John Hall, Chief of the Regulatory Section; Stuart Applebaum, Chief of the Ecosystem Restoration Section; Bo Smith, Chief of the Environmental Division, as well as a number of engineers, scientists, and computer specialists were all according to Rice, "Heroes within the organization."

So what the Jacksonville District did to meet the challenges put forth by the environmental heroes was to get a set of heroes of it own to institute an organizational change that embraced environmental awareness. The net result of this effort is a revitalized organization that is essential in the battle to restore the Everglades and demonstrate the concept of sustainable development. As General Clarke said when he first encountered the environmental movement, "The people of the Corps realized that our job was to do what we always had done: do what the people of the country wanted. And if the people of the country were changing what they wanted, we'd better get in step and find a way to do it." The Jacksonville District stepped up and found a way to do it.

Future Research

The research performed in this study generates a number of interesting focus areas in the field of public administration and organizational theory. What the study clearly

indicates is public organizations that are aware of threats posed by their external environment can use this knowledge to simultaneously mitigate the external threat, and enhance their organizational mission. Future work in this area should focus on other Districts within the Corps of Engineers to determine how they reacted to the external stimuli generated by the environmental movement. Work in this area would help determine if the changes implemented by the Jacksonville District were unique unto themselves or were part of a broader shift within the organization.

A second area of future research is the examination of the concept of co-optation as a model of how federal agencies reacted to the environmental movement. Research in this area would be especially fruitful as the dynamics between federal agencies and environmental organizations shifted over the course of the study. Thus posing the question of what happens to an organization such as the Fish and Wildlife Service when the group it attempts to co-opt gains power from outside sources could be used as a new line of research in organizational theory.

A third area of future work should include the examination of how other federal agencies charged with water resource development reacted to the environmental movement. Like the Corps, organizations such as the Fish and Wildlife Service and the Department of Agriculture, were impacted by the same external influences on their organizational missions. Examining how these organizations altered their missions in Florida would yield a better understanding of how the environmental movement impacted the government as a whole. Finally, studying how the environmental movement altered the dynamics between federal, state, local and tribal interests, would

yield valuable insight on the interplay between federal and non-federal stakeholders in the environmental era.

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APPENDICES

APPENDIX A

FIGURES

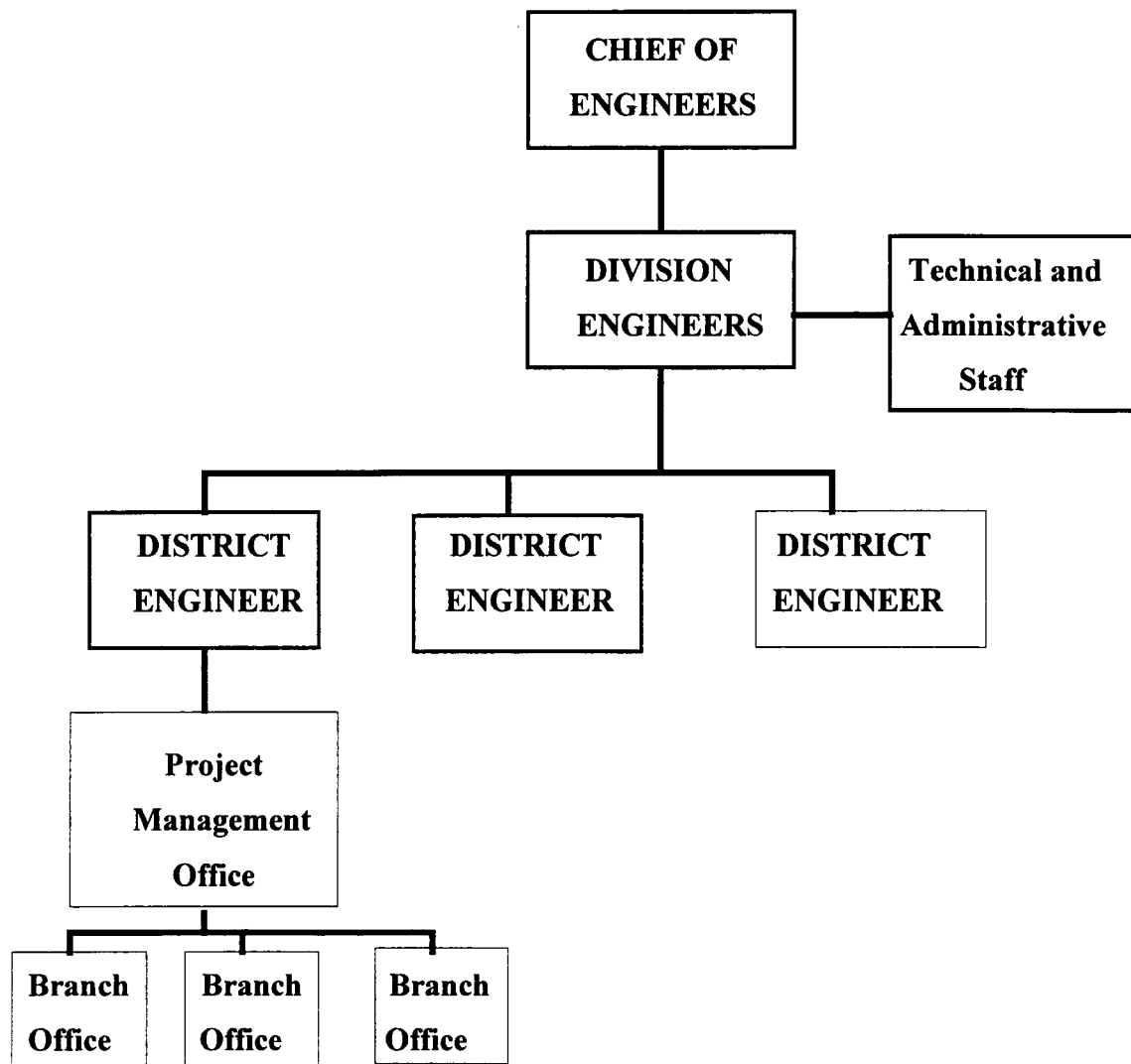


Figure 3.1. The Corps' Organizational Structure.

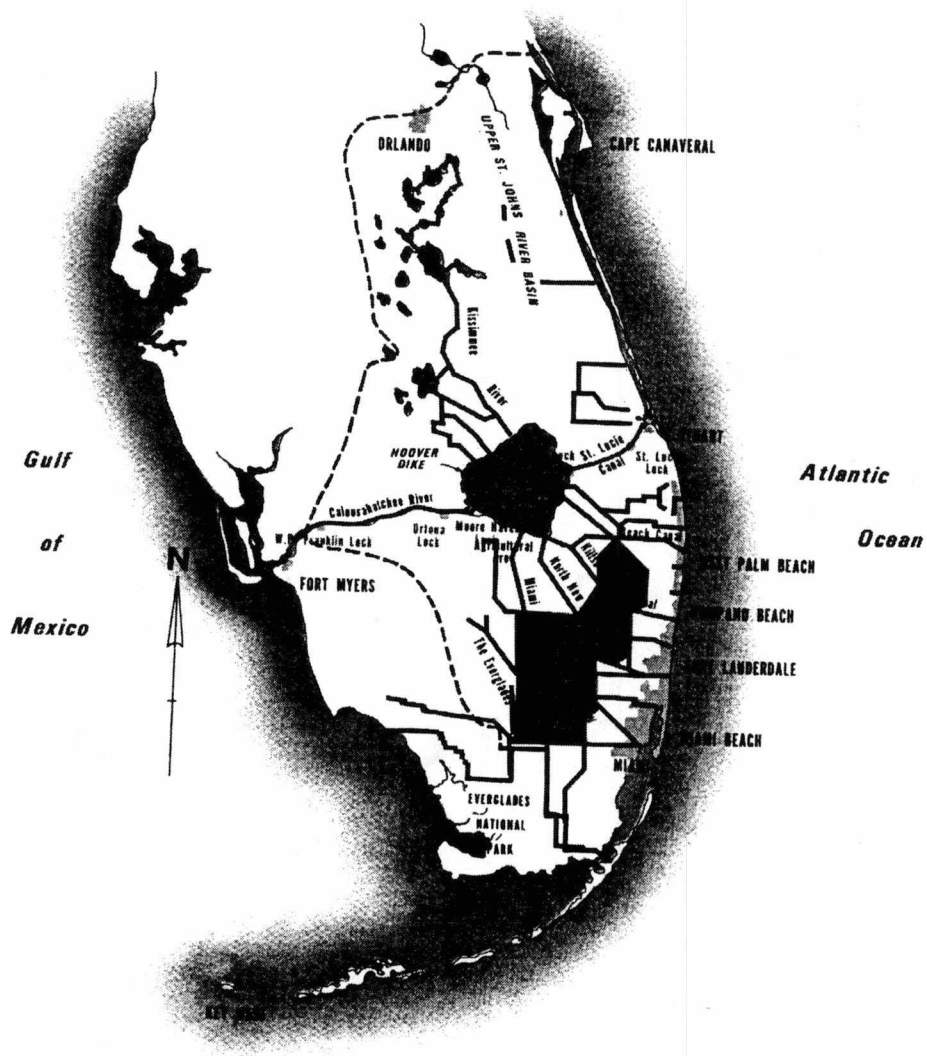


Figure 5.1. Map of the Central and South Florida Project (Buker, 1977: 90).

APPENDIX B

TABLES

Table 2.1. Closed Organization vs. Open Organization.

Characteristics of Closed Organizations	Characteristics of Open Organizations
Routine tasks occur in stable conditions	Nonroutine tasks occur in unstable
Task Specialization (division of labor)	Specialized knowledge contributes to to common tasks
Means (proper way of doing job) is accentuated	Ends are emphasized
Conflict within the organization is adjudicated from top	Conflict is adjudicated by interaction with peers
Responsibility is emphasized	Shedding of responsibility is emphasized
Loyalty to the bureaucratic subunit is emphasized	Loyalty to the organization as a whole is emphasized
The organization is perceived as hierarchical	Organization has a fluid structure
Knowledge is inclusive only at the top of the hierarchy	Knowledge is located anywhere in the organizations
Interaction between people in the organization is vertical	Interaction between the people and horizontal and vertical
The style of interaction is superordinate-subordinate	Interaction based on advice rather than commands
Loyalty to one's supervisor is emphasized	Task achievement and excellence of performance is emphasized

Table 2.2. Characteristic of the Hybrid Organization.

Characteristics of Closed Organizations	Characteristics of Open Organizations
Prestige is internalized (office and rank important)	Prestige is externalized
Routine tasks occur in stable conditions	Specialized knowledge contributes to common tasks
Task Specialization (division of labor)	Ends are emphasized
Conflict within the organization is adjudicated from the top	Knowledge is located anywhere in the organization
The organization is perceived as hierarchical	Loyalty to the organization as a whole is emphasized
Prestige is internalized (office and rank important)	Task achievement and excellence of performance is emphasized

Table 2.3. Examples of Organizational Typologies.

Organizational Model	Example	Key Characteristics
Open	College or University	Knowledge is located anywhere in the organization Ends are emphasized Task achievement and excellence of performance is emphasized
Closed	Military - Army Navy etc.	The organization is perceived as hierarchical Conflict within the organization is adjudicated from the top Task Specialization (division of labor)
Hybrid	Corps of Engineers	Conflict within the organization is adjudicated from the top The organization is perceived as hierarchical Knowledge is located anywhere in the organization Ends are emphasized

Table 3.1. Milestones in the Corps Civilian Mission

Date	Milestone	Result
1775	First Engineering Mission	Corps tasked with construction and development of military installations and infrastructure for the Continental Army.
Early 1800s	Frontier survey parties	Corps' survey the Oregon trail and map routes for the continental railroads.
1824	Rivers and Harbors Act	Congress tasks Corps with improvement of navigable waterways.
1850	Rivers and Harbors Act	Congress expands Corps mission to include flood control.
1899	Rivers and Harbors Act	Congress expands Corps mission to include discharge into waters.
1910	Rivers and Harbors Act	Congress expands Corps mission to include hydroelectric power generation.
1948	Central and South Florida Project	Congressional authorization to construct a massive water delivery system to South Florida.
1969	National Environmental Policy Act	Establishes federal environmental review and compliance procedures.
1972	Clean Water Act	Gives Corps primacy over discharge of pollution into all of the nation's waters.

Table 3.1 (continued)

Date	Milestone	Result
1983	Governor's Save Our Everglades Program	Recognizes that the entire ecosystem needs to be restored, not just parts of it; initiated the Kissimmee River Restoration.
1986	Water Resources Development Act	Requires cost sharing for Civil Works Projects.
1988	Water Resources Development Act	Requires more efficient methods for Civil Works Projects.
1990	Water Resources Development Act	Environmental Restoration made a part of the Corps' organizational mission.
1992	Water Resources Development Act	Authorizes the Central and South Florida Project Restudy.
1993	Federal South Florida Ecosystem Restoration Task Force	Established through a state/federal interagency agreement to coordinate ecosystem restoration efforts.
1994	Florida Everglades Forever Act	A comprehensive plan to restore significant portions of the South Florida ecosystem through construction, research and regulation.

Table 3.2. Environmental and Ecosystem Restoration Milestones.

Date	Milestone	Result
1947	Establishment of the Everglades	Set aside 1.3 million acres as a permanent wilderness; expanded to 1.4 million acres in 1989.
1947	Publication of <i>The Everglades River of Grass</i> - Marjorie Stoneman	Brought attention to the declining conditions in the Everglades.
1948	Central and South Florida Project	Congressional authorization to construct a massive water delivery system to South Florida.
1969	National Environmental Policy Act	Establishes federal environmental review and compliance procedures.
1972	Florida Land Conservation Act	Authorizes issuance of bonds to purchase environmental endangered recreation land.
1983	Governor's Save Our Everglades Program	Recognizes that the entire ecosystem needs to be restored, not just parts of it; initiated the Kissimmee River Restoration project.
1985	Florida Local Government Comprehensive Planning and Land Development Regulation Act	Requires the development and coordination of local land use plans.
1987	Florida Surface Water Improvement and Management Act	Requires the five Florida water management districts to develop plans to clean up and preserve Florida lakes, bays, estuaries and rivers.

Table 3.2 Continued

Date	Milestone	Result
1988	Everglades Nutrient Removal Project	Established a 4,000 acre manmade wetlands to remove phosphorus from farm water.
1991	Florida Everglades Protection Act	Provides water management districts with clear tools for ecosystem restoration.
1992	Water Resources Development Act	Authorizes the Central and South Florida Project Restudy.
1993	Federal South Florida Ecosystem Restoration Task Force	Established through a state/federal interagency agreement to coordinate ecosystem restoration efforts.
1994	Florida Everglades Forever Act	Outlines a comprehensive plan to restore significant portions of the South Florida ecosystem through construction, research and regulation.
1994	Governor's Commission for a Sustainable South Florida	Established to make recommendations for achieving a healthy South Florida ecosystem that can coexist with and mutually support a sustainable economy and quality communities.
1996	Water Resources Development Act	Expands the task force to include tribal, state and local governments, mandates extensive public involvement, allows task force to address full scope of restoration needs.

Table 4.1. The Original Environmental Advisory Board.

Name	Background
Lynton Caldwell	Professor of Political Science, University of Indiana
Roland Clement	Ecologist, Vice President National Audubon Society
Charles Foster	Executive Director, New England Natural Resources Center
Harold Gillman	Environmental Reporter San Francisco Chronicle
Richard Pough	Chairman of the Board, Open Space Action Institute
Charles Stoddard	Former Director of the Bureau of Land Management

Table 4.2. Current Environmental Advisory Board (1998).

Name	Background
Dr. Daniel Loucks	Environmental Engineer
Dr. Jonathan Bulkey	Environmental Engineer
Dr. Beverly Wright	Environmental Sociologist
Dr. Kenneth Dickson	Aquatic Ecologist
Dr. Paul Hosier	Biological Sciences
Dr. Leonard Ortolano	Environmental Policy
Dr. Geraldine Knatz	Environmental Policy/Planner
Dr. Eric Randall	Natural and Social Sciences
Mr. Estus Whitfield	Environmental Policy Specialist

Table 6.1. Jacksonville District Website Statistics.
Reporting Period: June 26, 1997 - November 24, 1997.

Visitor	Visits
U.S. Government (.gov & .mil)	948
U.S. Commercial (.com)	9,966
U.S. Educational (.edu)	1,914
U.S. Organization (.org)	180
Germany	56
Netherlands	30
Thailand	28
Belgium	21
Australia	16
Canada	11
United Kingdom	11

VITA

Donald Gamiles was born in Portland, Oregon on November 21, 1962. He attended schools in the Parkrose Public School System, where he graduated from Parkrose High School in 1981. He entered the University of Oregon, in Eugene, Oregon during August of 1981, where in May, 1985 he received the Bachelor of Science in General Science (physics). He then entered The Ohio State University, in Columbus, Ohio, in August, 1985 where in May, 1987 he received the Master of Science in Nuclear/Mechanical Engineering. In August of 1990, he entered the University of Tennessee, Knoxville to pursue the Doctorate of Philosophy in Political Science. The doctoral degree was received May, 1998.

He is presently the president of his own environmental consulting firm and frequently travels to the Middle East as a weapons inspector, for the United Nation's Special Commission on Iraq.