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Abstract

(March 1994) - History of the Southeastern Fishes Council, 1975-1993. By D.G. Cloutman, 5 pp.

Our Southeastern Fishes--What have We Lost and What Are We Likely to Lose. By D.A. Etnier, 5 pp.

Constitution of the Southeastern Fishes Council, with Amendments (1976-1977).

Corrections and Emendations to "Provenance and disposition of fish specimens appearing in color plates of Kuhene and Barbour's book, The American Darters." By C.R. Gilbert and S.J. Walsh, 1 pp.

Keywords

fishes, history, southeastern fishes council

Southeastern Fishes Council **PROCEEDINGS**

DEDICATED TO THE PRESERVATION OF SOUTHEASTERN FISHES



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HISTORY OF THE SOUTHEASTERN FISHES COUNCIL, 1975-1993

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PREFACE

This document provides a history of the Southeastern Fishes Council from the time of its inception in 1975 to the present. The major impetus for compiling this history is to enable our membership to look back and reflect on the activities and accomplishments of the Council. In doing this, we can compare our activities and accomplishments with the purpose and objectives mandated by our constitution and bylaws. Hopefully, this history will stimulate us to think about what we have done well and what we possibly have not done so well. Then, playing on our strengths, we can set our goals and plan for the future with great expectations.

This history was compiled from numerous sources including the original corporate charter, constitution and bylaws, letters, memos, bank statements, ledgers, *Southeastern Fishes Council Proceedings*, and mailing lists found in the Council archives in the possession of the Historian and files in the possession of the Secretary-Treasurer. A particular debt of gratitude is owed to Werner Wieland and Hank Bart for help in compiling information from the Secretary-Treasurers' files. In addition, the sound memories of some long-standing members were indispensable in gathering some previously unrecorded information. Special thanks in this regard go to Herb Boschung, Bob Cashner, Dave Etnier, Carter Gilbert, and Buck Snelson.

INTRODUCTION

The Southeastern Fishes Council (SFC) was the brainchild of Dr. Royal Suttkus. Prior to forming the SFC, Dr. Suttkus had tried unsuccessfully to form a "National Plan for Freshwater Ichthyology." After this unsuccessful attempt at forming a national fish conservation organization, he reasoned that a regional group, similar to the Desert Fishes Council, could succeed in the Southeast.

An organizational meeting was held at Williamsburg, Virginia, on 11 June 1975, with 26 persons in attendance. Shortly thereafter, on 8 July 1975, the SFC was officially chartered as a not for profit corporation at Knoxville, Tennessee. The incorporator was Joseph P. Congleton, a young lawyer acquaintance of Dave Etnier. Correspondence in the archives and minutes of the organizational meeting show that Herb Boschung, Dave Etnier, Wayne Starnes, Royal Suttkus, and Bill Yambert were instrumental in forming the corporation. The constitution and bylaws, patterned after those of the Desert Fishes Council, were drawn up by Dave

Etnier and Wayne Starnes. The SFC had 65 charter members (Table 1).

Table 1. Charter members of the Southeastern Fishes Council.

Anderson, William D., Jr.	Howell, Mike W.
Barkuloo, James M	Jandebeur, Thomas S.
Bauer, Bruce H.	Jenkins, Robert E.
Beadles, John K.H	Jordan, Ralph, Jr.
Bennett, James A.	Kuehne, Robert A.
Binderim, Gary E.	Loesch, Harold.
Bortone, Stephen	Marion, Ken
Boschung, Herbert T.	Menzel, Bruce W.
Bouchard, Raymond W.	Mettee, Maurice F.
Briggs, John C.	Miller, Robert R.
Buth, Donald G.	Mundy , Phillip R.
Cashner, Robert C	Nester, Robert D.
Clemmer, Glenn H.	Nunziata, C.A.
Cokendolpher, James	Palmer, William M.
Collard, S. B.	Ramsey, John S.
Conner, John V.	Relyea, Kenneth
Cooper, John Edward	Rickett, John D.
Crittenden, Edward	Robinson, Henry W.
Dean, David M.	Scott, Donald C.
deSylva, Donald P.	Seehorn, Monte C.
Douglas, Michael E.	Shipp, Robert L.
Douglas, Neil H.	Snelson, Franklin F., Jr.
Etnier, David A.	Starnes, Wayne C.
Felley, James	Stauffer, Jay R.
Freeman, Harry W.	Stiles, Robert A.
Fuller, Samuel L.H.	Stober, Richard C.
Gilbert, Carter R.	Suttkus, Royal D.
Gunning, Gerald E.	Swift, Camm C.
Harima, Hector	Thompson, Bruce A.
Hastings, Philip A.	Timmons, Tom J.
Heins, David C.	Walker, William H.
Hocutt, Charles H.	Williams, James D.
	Yerger, Ralph W.

OFFICERS

In accordance with the bylaws, officers of the SFC serve for approximately two years. Nine of the most reputable ichthyologists in the southeastern United States have served as

chairman (Table 2).

Perhaps the most demanding position in the SFC is that of Secretary-Treasurer. Eight members have sacrificed their time and energy in this position (Table 2).

MEMBERSHIP

Based on incomplete records, the number of members in the SFC has grown from 65 to 198 during its 18 years of existence (Table 2). The membership has consistently comprised the most knowledgeable and talented ichthyologists in the southeastern United States. The SFC has two life members- H. T. Boschung and R. D. Suttkus. The knowledge and experience of the membership is undoubtedly our most important resource with which to address the issues concerning the preservation of southeastern fishes.

ACTIVITIES

The most notable activities of the SFC have been the annual meetings, publication of the *Southeastern Fishes Council Proceedings*, manufacture of fish buttons (Table 2), and political activism concerning rare fishes and their habitats.

Annual meetings have been held at different locations each year throughout the Southeast (Table 2). They provide an important opportunity for on-the-spot, in-depth exchange and discussion of information and ideas concerning preservation of southeastern fishes. They also allow the membership a forum for open discussion of SFC administrative business.

The SFC has published 26 issues of the *Southeastern Fishes Council Proceedings* (Table 2). In addition to providing information on the various individual activities of the membership, the *Proceedings* has been an important outlet for several fish faunal surveys, life history and ecology studies, and status reports for numerous rare fishes.

Nine different fish buttons have been distributed by the SFC (Table 2). These buttons raise some funds, stimulate interest by commemorating meetings, and provide enjoyable memorabilia for the members.

Perhaps the most important activity of the SFC has been the use of our extensive technical knowledge of fishes in political activism. Two of the hottest topics of political activism involving SFC members occurred early in the history of the Council. Several SFC members made depositions or presentations in court cases and public hearings against the Tellico Dam and Tennessee-Tombigbee Waterway projects in 1976. Battles against these projects raged through the 70's and into the early 80's, but both projects were finally completed. The snail darter appears to be hanging on in the wake of the Tellico project. Although impacts of the Tenn-Tom project have been addressed by Herb Boschung in SFC *Proceedings* No. 19, only time will tell what the full impact will be. For example, there is concern that the gene pool of a unique walleye population in the upper Tombigbee System will be swamped by walleye from the Tennessee System (see

Proceedings No. 22).

Also in 1976, Bob Jenkins appeared at a Salem, Virginia, city council meeting in an attempt to protect the South Fork Roanoke system from a dam. In addition, the SFC contested a proposed dam on the Savannah River (Richard B. Russell). Richard B. Russell was completed in 1984, and has proved to be somewhat of a boondoggle, complete with an expensive oxygen-injected aeration system for striped bass.

In 1978, the Council sent a letter to President Carter supporting Carter's review and re-evaluation of federally funded water projects. Also, members of SFC were encouraged to present their views concerning status of the Cahaba shiner to the Fish and Wildlife Service. The SFC unanimously supported a resolution opposing the Columbia Dam on the Duck River, Tennessee. Letters were sent to the directors of all game and fish agencies in the Southeast, recommending that they intensively review projects involving introductions of non-native fishes, especially grass carp.

As the Tellico and Tenn-Tom projects continued to grind on in 1979, the SFC approached CBS's "60 Minutes" to cover the Tenn-Tom, but CBS "shied away." Letters were sent to President Carter urging him to veto the Tellico project, and to TVA Chairman David Freeman, complimenting him for his open-minded posture regarding dams and other projects.

In 1980, SFC members were encouraged to write senators and congressmen urging opposition to destructive environmental projects on the basis of economics, because it was becoming obvious that endangered and threatened species are not very important to most politicians. This encouragement was spurred on as a result of the 1980 election where relatively environmentally-conscious Jimmy Carter was defeated by economically-conservative and environmentally-unconscious Ronald Reagan.

SFC members were polled at the 1984 annual meeting about localities worthy of purchase by the Nature Conservancy. The Conasauga River was the consensus top choice passed on to the Nature Conservancy, but members were encouraged to "go to bat" for other sites as well.

At the 1989 meeting, the membership unanimously recommended that a letter regarding concerns about effects of effluent from drilling for coal bed methane in the Cahaba basin be sent to the Alabama Department of Environmental Management. In spite of the letter being sent in 1990 by President Buck Snelson, a permit for the project was subsequently issued. Also in 1989, Chairman Bob Jenkins sent a letter to T.F.H. Publications warning aquarium enthusiasts not to release the red shiner outside its native range.

In 1992, the SFC drafted several resolutions in an effort to protect southeastern fishes. These included resolutions opposing increased siltation caused by the chip mill industry in the Mobile, Tennessee, and Cumberland basins; opposing location of a landfill draining into Mill Creek (Conasauga basin); opposing location of a landfill draining into the Etowah River in Forsyth County, Georgia; urging the Corps of Engineers not to proceed with plans to impound the Pea River

Table 2. Administration and activities of the Southeastern Fishes Council, 1975-1992.

Year	Chairman	Chairman-elect	Sec. Treas.	No. member	Total assets	Meeting place/organization	SFC Proceedings & Editor	Buttons
1975	R.D. Suttkus	D.A. Etnier	H.T. Boschung	65		Williamsburg, VA/ASIH		
1976	R.D. Suttkus	D.A. Etnier	H.T. Boschung	106	\$780.76	New Orleans, LA/ASB	1(1), 1(2), 1(3) H.T. Boschung	
1977	D.A. Etnier	H.T. Boschung	F.F. Snelson	82	\$920.71	Gainesville, FL/ASIH	1(4), 2(1) G.H. Clemmer	
1978	D.A. Etnier	H.T. Boschung	F.F. Snelson		\$1,141.14	Tuscaloosa, AL/ASB	2(2) G.H. Clemmer	
1979	H.T. Boschung	H.T. Boschung	R.C. Cashner	167	\$1,921.90	Chattanooga, TN/ASB	2(3), 2(4), G.H. Clemmer	
1980	H.T. Boschung	G.H. Clemmer	R.C. Cashner			Tampa, FL/ASB	3(1), 3(2) C.R. Gilbert	Frecklebelly madtom
1981	G.H. Clemmer	C.R. Gilbert	W.C. Starnes			Knoxville, TN/ASB	3(3) C.R. Gilbert	Cypress darter
1982	G.H. Clemmer	C.R. Gilbert	W.C. Starnes			Richmond, KY/ASB	3(4), 4(1) C.R. Gilbert	Bluenose shiner
1983	C.R. Gilbert	R.C. Cashner	G.H. Burgess			Tallahassee, FL/ASB	4(2) C.R. Gilbert	Barrens topminnow
1984	C.R. Gilbert	R.C. Cashner	G.H. Burgess			Memphis, TN/ASB	4(3) C.R. Gilbert	Maryland darter
1985	R.C. Cashner	R.E. Jenkins	B.A. Thompson			Knoxville, NC/ASIH		
1986	R.C. Cashner	R.E. Jenkins	B.A. Thompson			Columbia, SC/ASB	4(4) C.R. Gilbert	Spring pygmy sunfish
1987	R.E. Jenkins	F.F. Snelson	W. Wieland	192		Athens, GA/ASB	No. 17 M.M. Stevenson	Rustyside sucker
1988	R.E. Jenkins	F.F. Snelson	W. Wieland		\$2,732.29	Biloxi, MS/ASB	No. 18 M.M. Stevenson	
1989	F.F. Snelson	B.H. Bauer	W. Wieland		\$3,202.55	Charlotte, NC/ASB	Nos. 19, 20 M.M. Stevenson	
1990	F.F. Snelson	B.H. Bauer	W. Wieland		\$4,244.34	Charleston, SC/ASIH	Nos. 21, 22 M.M. Stevenson	Cape Fear shiner
1991	B.H. Bauer	D.C. Heins	H.L. Bart, Jr.			Boone, NC/ASB	Nos. 23, 24 M.M. Stevenson	
1992	B.H. Bauer	D.C. Heins	H.L. Bart, Jr.	198	\$4,237.54	Tuscaloosa, AL/ASB	Nos. 25, 26 M.M. Stevenson	Pygmy sculpin
1993	D.C. Heins	S.J. Walsh	H.L. Bart, Jr.	196	\$4,541.20	Virginia Beach, VA/ASB	Nos. 27, 28 M.M. Stevenson	

at Arifton, Alabama; and urging the Alabama Department of Environmental Management and the State of Alabama to establish regulations for the Cahaba River and other outstanding Alabama waters to prevent further lowering and begin restoration of water quality. The Cahaba River resolution was the only one acted upon by the Council.

Besides these official political activities, many SFC members have conducted individual efforts to preserve southeastern fishes. Members have made important and numerous comments on many rare fishes for the Fish and Wildlife Service to help determine threatened or endangered status. In addition, several members in Tennessee have been actively involved in re-establishing the spotfin chub, Smoky madtom, yellowfin madtom, and *Elassoma* sp. into native waters during recent years.

In 1988, Steve Platania of the Desert Fishes Council encouraged SFC members to establish a systematic 4th of July fish count similar to the Christmas bird count. The fish count idea was further discussed at the 1989 meeting. The consensus was that if anyone wished to do such a count, they could pick their own time and method. Steve Ross stated that he had been conducting a "count" since 1975. It is interesting that 1976 SFC Chairman Royal Sutkus called upon each member to establish a regular monitoring program at a local collecting site to determine long term trends in habitat and status of fishes, especially for streams with rich assemblages or unique endemics. Such monitoring is in accordance with Objective 5 of the constitution, which states, "To encourage members to assume responsibility of monitoring one or more local fish populations and their habitats and present report thereon at annual meetings."

One of the low points in the history of the SFC came in 1989 when we were informed that the Council did not have official tax exempt status. This apparent shortcoming was in direct violation of Article VII of the constitution which states "The affairs of the Council shall at all times be managed in such a way as to preserve and safeguard its tax-exempt status. This apparent problem started in 1978 when the Council's corporate charter was sold to a Knox County, Tennessee, restaurant who needed a non-profit charter at least two years old to acquire a liquor license. The restaurant's lawyers offered to pay fees for establishing a new SFC with the same name, officers, constitution, by-laws, and tax-exempt status, and to contribute \$1,000 to the new council. The new SFC was supposedly rechartered under the same name on a second charter, but no charter could be found. Although the Council had a Taxpayer Identification Number on its Paine Webber account when the tax problem arose in 1989, the origin of the number was in question. In addition, there were no records of the SFC ever filing for or receiving recognition of exemption under section 501 (c) (3) of the Internal Revenue Code. In 1991, a certified public accountant advised the SFC to file a return and pay approximately \$300 in back taxes and then file for official tax exempt status with the IRS.

Fortunately, it appears that through the efforts of Secretary-Treasurers Werner Wieland and Hank Bart, this mess is being straightened out. Werner determined that the

Council had indeed received a Taxpayer Identification Number through the Memphis IRS office sometime after May 1981 that matches SFC reports (W-9 Form) of dividends paid by Paine Webber. After consultation with Certified Public Accountant R. Allen Whiteside and the IRS, it appears that the SFC has been in compliance with IRS regulations because the annual income has been less than \$5,000 (see *Southeastern Fishes Council Proceedings* Nos. 23 & 25 for details). However, it appears that members are not able to deduct contributions to the organization under its present status. Secretary Bart is now working on the paperwork to make the SFC tax exempt under Section 501 (c) (3) of the Internal Revenue Service Code.

SUMMARY

The major activities of the SFC have been in accordance with the first two purposes outlined in Article II, Section 1 of the constitution, "(A) To provide for the pursuit and transmittal of information on the status and protection of southeastern fishes and their habitats; (B) to promote the perpetuation of rich natural assemblages of fishes and their habitats as well as the localized unique forms and their habitats..." For 18 years, members of the SFC have expended a commendable amount of effort trying to accomplish these purposes. The SFC's environmental expertise and hard work have been its major strengths.

In spite of all this scientifically sound expertise, hard work, and backing of the Endangered Species Act, it appears that in the political arena, the SFC has lost more battles than it has won. Our major weakness appears to be that we have not learned to push the correct political "hot button"-economics, early enough, hard enough, or long enough. If we wish to become more successful, we must become more savvy with the use of economic issues. Perhaps we should get expert environmental economists involved. We must find quick ways to muster massive public support with economic as well as environmental issues. Getting major TV magazine shows such as "60 minutes" and Cable News Network's "Earth Matters" involved is a good idea that should be tried again when the situation warrants it. And the earlier we get involved in a project, the better. We sometimes get involved relatively late, and politicians are reluctant to stop the ball once it is rolling. We must attempt to stop environmentally damaging projects while they are being considered by Congress, or while private industry proposals are still under regulatory and public review, rather than wait until the bulldozers are rolling. Perhaps SFC needs to form a congressional watchdog committee and maintain regular contact with state regulatory agencies to get an early start on reviewing projects.

With increased population, development and habitat destruction will continue. It has been estimated that over 40% of worldwide net terrestrial primary production is used by humans. This disproportionate use by one species leaves 60% of the net primary production for the remaining 30 (10-100)

million, including fish, to compete over. At the present human population growth rate of 1.8% per year, humans will consume 100% of net primary production in AD 2044, leaving nothing for other species. It is doubtful that humans can carry their consumption this far; however, there is little doubt that continued population growth will to a considerable extent over-run even the best-conceived environmental protection measures. Perhaps the SFC should consider getting actively involved in the controversial area of human population control.

We have looked back and seen obvious strengths-biological expertise and experience, and resolve and sense of

mission in particular. We have also detected some weaknesses-mainly lack of attention to administrative details, insufficient economic and sociopolitical savvy, and inability to create massive public awareness of individual projects. Our weaknesses can be overcome. Increasing population pressures challenge us to continue using our strengths and quickly overcome our weaknesses if we are to fulfill our objectives of protecting the fish fauna of the southeastern United States. We can be effective in the future if we work hard and smart together.

OUR SOUTHEASTERN FISHES--WHAT HAVE WE LOST AND WHAT ARE WE LIKELY TO LOSE

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ABSTRACT

When fish population levels in rivers and large creeks fall below a certain level, it becomes virtually impossible to determine whether the species continues to be present in low numbers and may recover to former levels, or whether it is extirpated from the area. In eastern and central North America, it is conceded that *Lagochila lacera* and *Fundulus albolineatus* are extinct. *Noturus trautmani* (last record 1957) and *Etheostoma sellare* (last record 1988) are likely extinct, but several other species have been absent from collections for much longer periods of time and subsequently recovered to at least moderate levels of abundance (*Noturus flavipinnis*, 75-year collection hiatus; *Erimystax cahni*, 25 years; *Ammocrypta clara* in the Tennessee River drainage, 86 years; *Etheostoma wapiti*, 88 years). Long-term monitoring efforts at key localities are seen as being very helpful in providing early warning of drastic population declines and potential extirpation.

INTRODUCTION

In the early 1800s, when zoologists began to study the aquatic diversity of southeastern United States, there were approximately 228 taxa (species and well differentiated subspecies) of fishes native to the Tennessee River drainage. Only two of these species (*Fundulus albolineatus*, the whileline topminnow; and *Lagochila lacera*, the harelip sucker) are now thought to be extinct. This number has always seemed surprisingly low to me in light of the 33 Tennessee River drainage taxa recognized as being Threatened

or Endangered throughout their range (Etnier and Starnes, 1991). In fact, if we expand our scope to include all of eastern and central North America east of the Pacific slope and north of Mexico, the number of extinct fish species remains very small. Perhaps we have lost one or two taxa of Great Lakes ciscos, and it is feared that the Scioto madtom (*Noturus trautmani*) and the Maryland darter (*Etheostoma sellare*) are extinct (both are discussed below). For the remainder of this discussion, I will focus on the freshwater fish fauna of southeastern United States, with emphasis on those species that occur in Tennessee. Unless otherwise indicated, information has come from Etnier and Starnes (in press). Peggy W. Shute, Tennessee Valley Authority, has provided many of the "last capture dates" for various species from her extensive files.

The fact that only two fish species disappeared from this region during a time when individuals, industries, and government agencies gave little if any consideration to modifying their behavior to prevent fish extinctions might give us cause for being optimistic about the long-term survival of our remaining southeastern freshwater fish fauna. Even though many populations of jeopardized species have been extirpated, our fish fauna is virtually intact. Surely we are doing a much better job of protecting these fishes at present, and perhaps optimism is justified.

On the other hand, application of concepts associated with island biogeography to the small or highly fragmented populations of jeopardized southeastern fishes indicate that additional extirpations of populations and extinctions of species are imminent or already have occurred. I believe the latter scenario is closer to the truth.

CASE HISTORIES

Endangered fish species are often very rare, and it can be difficult to demonstrate whether or not extirpation or extinction has occurred, or if the population is merely so low that collection of even a single individual is difficult. For instance, Woolman (1892) reported *Ammocrypta clara* (as *A. pellucida*) to be abundant in the Powell River in the vicinity of the U.S. 25E bridge in Claiborne County, Tennessee, in 1890. The species was not seen again in the Clinch or Powell river systems until 1976 (Starnes et al., 1977) when it appeared in the same area where Woolman had collected it. Two specimens were taken in the well-collected Clinch River, one in Hancock County, Tennessee, and one in Scott County, Virginia, during June of 1980 by TVA biologists. Both of these rivers originate in Virginia and flow into Norris Reservoir in Tennessee. The species had never been taken in either river in Virginia, and could not have reinvaded from downstream because of absence of darter habitat in Norris Reservoir and the absolute barrier to upstream migration provided by Norris Dam. Furthermore, there are no records of this species from anywhere downstream in the Tennessee River drainage. The inescapable conclusion is that *Ammocrypta clara* had been present in both the Clinch and Powell rivers above Norris Reservoir throughout this 84-year period, but in levels so low that it was not detected in any of the numerous fish collections made in these rivers during that time. A related species, *Ammocrypta vivax*, the scaly sand darter, is known from a preimpoundment collection of two specimens from a western tributary to the lower Tennessee River in Kentucky (probably extirpated) and from a single specimen from the Tennessee River drainage in Tennessee (Starnes et al., 1977). The more recent specimen was collected by Neil Douglas and students at a site in the Buffalo River, Wayne County, Tennessee, in 1976. The site had been visited often by ichthyologists, and additional specimens were not obtained in approximately ten recent collections.

Notropis ariommus, the popeye shiner, was well known to early ichthyologists, but then virtually disappeared from fish collections (only three specimens collected between 1894 and 1949) for over 50 years (Gilbert, 1969). It has been a reasonably abundant species at numerous localities since 1949, and it is virtually certain that this 50-year period of extreme rarity is factual rather than an artifact of lack of collecting effort.

The highfin carpsucker, *Carpiodes velifer*, was questionably included in the Tennessee fauna based on a total of four juvenile specimens collected in both the Cumberland and Tennessee river drainages between 1930 and 1975. Subsequently, adults have been captured in the Nolichucky River (1987), Clinch River (1988, 1990), Duck River (1988, 1990, 1992), lower French Broad River (1990), Little Pigeon River (1990), Sequatchie River (1992), and Hiwassee River (1992). Many of these collections were from sites that had been previously collected, and all of these rivers had received considerable attention from ichthyologists in previous years.

The yellowfin madtom, *Noturus flavipinnis*, is known from the well-collected Powell River from single specimens collected at adjacent sites near Alanthus Hill, Claiborne County, Tennessee, in 1968, 1979, and 1983. This is a species that was not collected anywhere during a 75-year interval between 1893 and 1968, and it was considered to be extinct. It is now known from three localities (Powell River, Copper Creek, VA, and Citico Creek, TN), but it has not been collected again at any of the localities from which it was known in the 1800s. In Copper Creek it was discovered in 1969 (Taylor et al., 1969) and found to occupy the lower 40 miles of the creek where it was rather common. Recent habitat deterioration in Copper Creek has resulted in that population's drastic decline. A single specimen was located there on 24 June 1993 near the mouth of Obey's Creek, Creek Mile 14, during a snorkeling search for the species, but its outlook for survival in Copper Creek appears to be gloomy (pers. comm. P. W. Shute). Yellowfin madtoms were not collected in Citico Creek, Monroe County, Tennessee, until 1981 (Bauer et al., 1983). Ichthyologists previously had spent considerable effort searching Citico Creek for the apparently extinct smoky madtom (*Noturus baileyi*), and the Tennessee Wildlife Resources Agency had routinely conducted surveys to evaluate the status of the trout population. This indicates how difficult it can be to demonstrate the presence of a particular madtom species. Yellowfin madtoms were discovered in Citico Creek during a study of the ecology of the smoky madtom in the same stream. Smoky madtoms were not discovered in Citico Creek until 1980, and were considered to be extinct since they could not be found at the type locality (Abrams Creek, collected only during 1957), the unimpounded upper Little Tennessee River, or the other two major Little Tennessee River tributaries with similar habitats (Tellico River and Citico Creek). Later work indicated that the Citico Creek population of yellowfin madtoms was about 500 adults in a 0.9 mile reach, and that there were about 700 smoky madtoms in a 2.6 mile reach (Shute, 1984; Dinkins, 1984).

During the 1970s my students and I made several unsuccessful efforts to find an extant population of the sharphead darter (*Etheostoma acuticeps*) in the Nolichucky River near Erwin, Tennessee. At present it is sufficiently abundant in that area that a single reasonable collecting effort concentrating on sharphead darter habitat would almost certainly produce specimens. These specimens may be derived from a population that migrated downstream from a persistent population in the Cane River in North Carolina, but I think it much more likely that sharphead darters were present but undetected by our efforts during the 1970s, and subsequently have increased greatly.

I have attempted to indicate how difficult it may be to demonstrate the presence of a fish species in an area, even though it occurs there in viable (e.g., recoverable) numbers. With that in mind, Figure 1 presents my concept of what the long range population density of a riverine fish population might look like. In this hypothetical example, if the population is above the dashed horizontal line, its presence can be demonstrated, but when it drops below that line, our

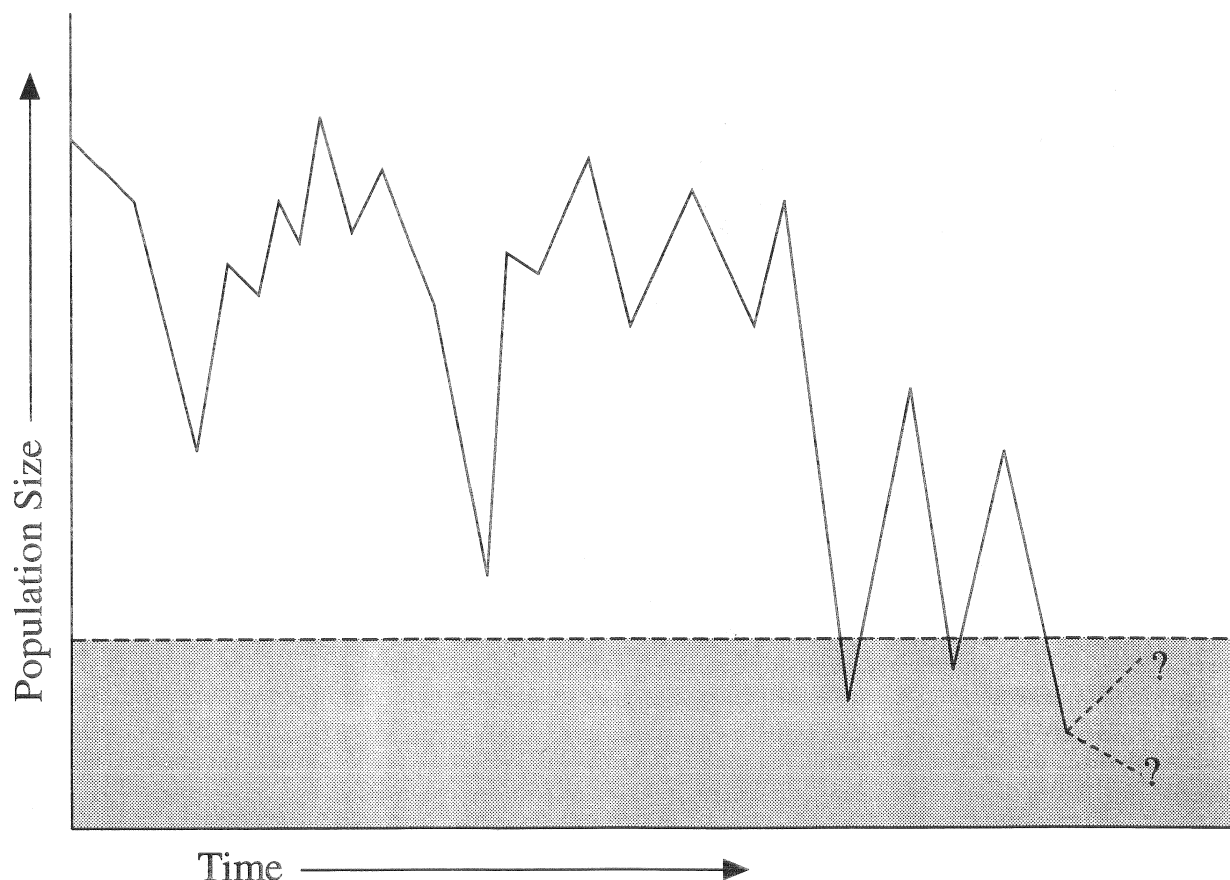


Figure 1. Author's conceptualization of variation of a fish population's numbers through time.

methodology is not likely to produce any specimens in what we would currently consider a concerted effort. When the population is below the dashed line, we will typically be unable to determine whether the population is headed for eventual recovery or extinction (Fig. 1, lower right), and this uncertainty can persist for decades as indicated in several earlier examples. This suggests that several fish species currently on our Threatened or Endangered lists are already extinct.

For instance, the Scioto madtom and Maryland darter, mentioned above, are currently considered as "probably extinct". The Scioto madtom, known only from Big Darby Creek, tributary to the Scioto River, Ohio River drainage, Pickaway County, Ohio, has not been collected since 1957 (Trautman, 1981), even though efforts to find additional specimens have been extensive. The Maryland darter is known only from a small area in Maryland. It was discovered in 1912 in Swan Creek, a small Susquehanna River tributary near Aberdeen, Harford County (Knapp, 1976), and was not seen again until 1962 when a single juvenile was collected from adjacent Gasheys Run, a small creek that enters the lower Susquehanna River (Chesapeake Bay) in the same embayment as Swan Creek. In April of 1965 Knapp collected an adult female in Gasheys Run, and in May of 1965 E. C. Raney and F.J. Schwartz discovered a population in Deer Creek, a considerably larger Susquehanna tributary which has

its mouth 13 river miles upstream from the embayment shared by Swan Creek and Gasheys Run. Later work indicated the Deer Creek population to be substantial but restricted to the lower portion of the Creek. Knapp speculated that the two original types from Swan Creek and the two specimens from Gasheys Run represented waifs that had dispersed downstream from the Deer Creek population. In spite of extensive efforts, Maryland darters have not been collected since 1979, nor seen since 1988 (Raesly, 1992). Both the Scioto madtom and the Maryland darter are feared to be extinct.

In the Tennessee and Cumberland river drainages a number of jeopardized fish species appear to be somewhere below the dashed line in Figure 1, and it may be several decades before we will discover them to have recovered to detectable population levels or place them in the "probably extinct" category of the Scioto madtom and the Maryland darter. Included in this category is the slender chub (*Erimystax cahni*), which has not been collected from the Clinch River system since 1986, nor from the Powell River system since 1986, in spite of several collections targeted for this species and a 1993 status survey conducted by N.M. Burkhead. The single Holston River specimen was collected in 1941 prior to impoundment of Cherokee Reservoir, and the Holston River population is almost certainly extirpated. The slender chub was not collected anywhere between 1939 and 1964, but was often abundant in both the Clinch and Powell

rivers above Norris Reservoir in the 1969-1980 period. Perhaps it will again be abundant in these areas, but its absence from recent collections is foreboding.

An undescribed darter from the Cumberland drainage, related to the bluebreast darter (*Etheostoma camurum*) is known from three 1951 specimens from Pine Creek, tributary to Caney Fork River, DeKalb County, Tennessee, and a single 1961 specimen from East Fork Stones River below the Walter Hill Dam (U.S. Highway 231). Is it extinct?

Additional jeopardized Tennessee fish species appear to be declining in certain areas, and, although extinction is not imminent, extirpation of populations may have occurred already for some. The boulder darter (*Etheostoma wapiti*) has not been collected in Shoal Creek since 1884 (Florence, Lauderdale County, Alabama), and has almost certainly been extirpated from that system (Etnier and Williams, 1989). It persists in lower Elk River in Tennessee and Alabama in low numbers. *Ammocrypta clara* has again dropped below the dashed line in both the Clinch and Powell River systems, where it was last collected in 1980 (Clinch River) and 1987 (Powell River). As mentioned earlier, *Ammocrypta vivax* has not been collected in the Tennessee River drainage since 1976, and *Noturus flavipinnis* has not been seen in the Powell River system since 1983. *Ammocrypta asprella*, the crystal darter, has not been recorded from the entire Cumberland drainage since 1939 and is almost certainly extirpated from that drainage. The blotchside logperch (*Percina burtoni*), known from three Cumberland River drainage localities, was last collected there in the late 1800s, and is probably extirpated from the drainage. It persists in the Tennessee River drainage, but four populations in that drainage (South Fork Holston River, last collected in 1947; French Broad River, 1934; Nolichucky River, 1980; Little Tennessee River, 1957 collection from Abrams Creek and underwater observation by Rick Eager at River Mile 6.8, now Tellico Reservoir, in 1975) are likely extirpated. If these populations are extirpated, extirpation has occurred in 7 of 15 known populations. With remaining populations isolated by reservoirs, additional extirpations are likely and permanent, and the long term outlook for the species is gloomy. The channel darter (*Percina copelandi*) has not been collected in the French Broad River system or the Tennessee River drainage below Knoxville since the 1940s, and its recent absence from areas in the Clinch and Powell rivers where it had been common indicate that it has slipped into the "limbo" area of Figure 1 for the entire Tennessee River drainage. The stonecat (*Noturus flavus*) has been extirpated from much of the upper Tennessee River drainage; Tennessee drainage populations may represent an undescribed taxon (LeGrande and Cavender, 1980). Two of six known populations of the undescribed duskytail darter (subgenus *Catonotus* of *Etheostoma*) have been extirpated, and populations appear to be decreasing in extant populations in Little River, Blount County, Tennessee, and in Copper Creek, Scott County, Virginia. The population in lower Citico Creek, Monroe County, Tennessee, is tiny and very localized, leaving only the lower Big South Fork population as potentially vigorous. About half of the 20 or so known

populations of the longhead darter (*Percina macrocephala*) have likely been extirpated, and the species was last taken in the Cumberland River drainage in 1891 (Page, 1978); other populations appear to be vulnerable to extirpation because of their small size, recent declines, or both. The ashy darter (*Etheostoma cinereum*) is similar to the longhead darter in having 7 of 16 known populations probably extirpated, with 5 of 8 Cumberland River drainage populations probably gone (Shepard and Burr, 1984; Burr and Warren, 1986).

Additional examples could be offered. The point to be made is that several Endangered species and many populations of other jeopardized species have apparently moved into the gray area below the dashed line in Figure 1, and we do not know and perhaps can not know whether they will rebound to detectable abundance or will become or are already extinct or extirpated. Admittedly, our lack of knowledge is in many cases based on a woefully inadequate effort to determine if populations are extant. Additional collecting effort at sites where jeopardized species were formerly known to occur would result in moving the dashed line closer to the horizontal axis of the graph and reduce the "limbo" area. Funding for this sort of work, especially for species not on the federal list of Endangered or Threatened species, has been virtually nonexistent. Survey work to determine the status of these populations has been further hampered by unrealistic requirements for scientific collecting permits for fishes in several states, and additional requirements for collecting permits for other jurisdictions (state and national parks and preserves, etc.). In some cases, requirements and constraints of state and federal endangered species laws designed to protect these species are sufficiently cumbersome and intimidating to thwart survey efforts before they are even attempted.

I feel that some of the uncertainties presented by the gray area below the dashed line in Figure 1 can be resolved with increased effort. I applaud TVA's recent "Index of Biotic Integrity" (IBI) program, an effort to provide long-term and repeatable monitoring of significant aquatic communities throughout the Tennessee River drainage. The National Park Service has initiated additional long-term monitoring of rivers within Great Smoky Mountains National Park. Additional intensive and long-term collecting efforts, especially at large river sites with concentrations of jeopardized fish taxa, are seen as necessary to reduce our current ignorance to a more acceptable level.

LITERATURE CITED

- Bauer, B.H., D.A. Etnier and G.R. Dinkins. 1983. Discovery of *Noturus baileyi* and *N. flavipinnis* in Citico Creek, Little Tennessee River system. *Copeia* 1983: 558-560.
- Burr, B.M. and M.L. Warren, Jr. 1986. A distributional atlas of Kentucky fishes. Ky. Nature Preserves Comm., Sci. and Tech. Series 4. 398 pp.
- Dinkins, G.R. 1984. Aspects of the life history of the smoky

- madtom, *Noturus baileyi* Taylor, in Citico Creek. M.S. Thesis, Univ. Tenn. 50 pp.
- Etnier, D.A. and W.C. Starnes. 1991. An analysis of Tennessee's jeopardized fish taxa. J. Tenn. Acad. Sci. 66: 129-133.
- Etnier, D.A. and W.C. Starnes. In press. The fishes of Tennessee. University of Tennessee Press, Knoxville.
- Etnier, D.A. and J.D. Williams. 1989. *Etheostoma (Nothonotus) wapiti* (Osteichthyes: Percidae, a new darter from the southern bend of the Tennessee River in Alabama and Tennessee. Proc. Biol. Soc. Wash. 102: 987-1000.
- Gilbert, C.R. 1969. Systematics and distribution of the American cyprinid fishes *Notropis ariommus* and *Notropis telescopus*. Copeia 1969: 474-492.
- Knapp, L.W. 1976. Redescription, relationships and status of the Maryland darter, (*Etheostoma sellare* (Radcliffe and Welsh), an endangered species. Proc. Biol. Soc. Wash. 89: 99-118.
- LeGrande, W.H. and T.M. Cavender. 1980. The chromosome complement of the stonecat madtom, *Noturus flavus* (Siluriformes: Ictaluridae), with evidence for the existence of a possible chromosomal race. Copeia 1980: 341-344.
- Page, L.M. 1978. Redescription, distribution, variation, and life history notes on *Percina macrocephala* (Percidae). Copeia 1978: 655-664.
- Raesly, R.L. 1992. Population status of the Endangered Maryland darter, *Etheostoma sellare* (Radcliffe and Welch). Final report prepared for Maryland Natural Heritage Program, Frederick, MD 21701. 13 pp.
- Shepard, T.E. and B.M. Burr. 1984. Systematics, status, and life history aspects of the ashy darter, *Etheostoma cinereum* (Pisces: Percidae). Proc. Biol. Soc. Wash. 97: 693-715.
- Shute, P.W. 1984. Ecology of the rare yellowfin madtom, *Noturus flavipinnis* Taylor, in Citico Creek, Tennessee. M.S. Thesis, Univ. Tenn. 101 pp.
- Starnes, W.C., D.A. Etnier, L.B. Starnes and N.H. Douglas. 1977. Zoogeographic implications of the rediscovery of the percid genus *Ammocrypta* in the Tennessee River drainage. Copeia 1977: 283-286.
- Taylor, W.R., R.E. Jenkins and E.A. Lachner. 1969. Rediscovery and description of the ictalurid catfish, *Noturus flavipinnis*. Proc. Biol. Soc. Wash. 83: 469-476.
- Trautman, M.B. 1981. The fishes of Ohio. Second Edition, Ohio State Univ. Press, Columbus. 782 pp.
- Woolman, A.J. 1892. Report of the examination of fishes of Kentucky with lists of the fishes obtained. Bull. U.S. Fish. Comm. 10: 249-289.

CONSTITUTION OF THE SOUTHEASTERN FISHES COUNCIL, WITH AMENDMENTS (1976, 1977)

Article I - Name

Name - The name of this organization shall be the SOUTHEASTERN FISHES COUNCIL, and shall be referred to here in this document as the Council.

Article II - Purpose and Objectives

- Section 1. Purpose - (A) To provide for the pursuit and transmittal of information on the status and protection of southeastern fishes and their habitats; (B) to promote the perpetuation of rich natural assemblages of fishes and their habitats as well as the localized unique forms and their habitats; (C) and for the dissemination of information to promote better curatorial management and safe guarding of systematics fish collections, particularly of "types" and limited holdings of rare and endangered species. For the purpose of this Council, the term southeastern fishes is intended to include any endemic fish of racial, subspecies, or species status that inhabits the drainages of southeastern United States and additional drainages and endemic fishes as determined by the Council. These drainage areas include the lower Mississippi River and tributaries and all adjacent drainages within the Mississippi Embayment (lower Rio Grande in the west to and inclusive of the Mobile Bay drainages in the east); the main Ohio River and all tributaries flowing into the Ohio from the south side; all eastern tributaries to the Mississippi River south of the Ohio River; the main Missouri River and all tributaries flowing into the Missouri from the south (from mouth of Missouri upstream to junction of Kansas River with Missouri); all western tributaries of Mississippi River south of the Missouri River; all drainages flowing into Gulf of Mexico east of Mobile Bay to Key West, Florida and all Atlantic drainages from the Potomac River southward to Key West.
2. Objective - To stimulate and support studies in all phases of basic systematics, life history, ecology, protection, recreational, and related intrinsic values of southeastern fishes.
 3. Objective - To function in a professional advisory capacity where appropriate, on questions involving conservation and protection of southeastern native fishes and their habitats and to adopt such measures as shall tend to ensure the continued survival of southeastern native fishes and the maintenance of their habitats in a natural state.
 4. Objective - To publish symposium proceedings and proceedings of annual meetings in order to present current information on problems relating to the preservation of southeastern native fishes and their habitats and to commend outstanding action, by the public and professionally engaged individuals, supporting the purpose of the Council.
 5. Objective - To encourage members to assume responsibility of monitoring one or more local fish populations and their habitats and present report thereon at annual meetings.

Article III - Membership

Any person or organization interested in or engaged in protection or scientific study of southeastern fishes and habitats or some related phase of southeastern fish conservation, shall be considered eligible for membership upon application.

Article IV - Officers

The officers of the Council shall be a Chairman, Chairman-elect, and a Secretary-Treasurer, whose duties are described in the Bylaws.

Article V - Meetings

Annual meeting. An annual meeting of the Council shall be held.

Article VI - Management

The Council shall be governed by an Executive Committee.

Article VII - Tax-exempt Status

The affairs of the Council shall at all times be managed in such a way as to preserve and safeguard its tax-exempt status.

Article VIII - Dissolution

Dissolution - Upon dissolution of the Southeastern Fishes Council, the Executive Committee shall turn all assets, accrued income, the Council Library, and other properties over to an educational institution mutually agreed upon, to hold until such a time as another Council may be established, except that the administrative functions shall continue until all supplies, inquiries, and obligations have been exhausted, all income has been received and all debts paid. A letter of termination and accounting shall be sent to Council members when all obligations have been effectuated and the "books are closed".

BYLAWSArticle I - Membership

Applications for membership shall be transmitted in writing to the Secretary-Treasurer on forms provided by the Council.

Article II - Management

- Section 1. Chairman - The Chairman shall have general direction of the Council officers. The Chair (he or she) shall appoint, with the assistance of the Executive Committee (Article III, Par. 4); Chairmen of all regular and special Committees, and the Chair shall preside at meetings of the Executive Committee and Council and shall be exofficio a member of all Committees.
2. Chairman-elect - The Chairman-elect (he or she) shall assist the Chairman in duties where needed. In the absence of the Chairman, or in the event of the Chair's inability to act, the Chair's duties shall be assumed by the Chairman-elect. The Chairman-elect shall assume the office of Chairman immediately following his or her installation as Chairman at the annual meeting. He or she shall serve in the office of Chairman for approximately two years terminating his or her duties at the conclusion of the annual meeting, at the end of tour of his or her duty as chairman, at which time the current Chairman-elect shall assume the office of Chairman.
3. Secretary-Treasurer - The Secretary-Treasurer (he or she) shall serve as general business manager. The Secretary-Treasurer shall issue notices of annual or special meetings, and other materials distributed by the Council to its membership, and shall record the minutes of its meetings. The Secretary-Treasurer shall be responsible for receiving and disbursing all funds of the Council. A report concerning Secretary-Treasurer's activities of the preceding year, and an auditing of accounts for that year, shall be made by the Secretary-Treasurer to the Council at its annual meeting, and at any time requested by the Chairman. In the event neither the Chairman nor Chairman-elect can serve in their capacity, the Secretary-Treasurer shall serve pro-tempore.
4. Term of Office - The officers shall serve for approximately two years, be installed at the annual meeting, take office immediately thereafter and terminate their duties at the conclusion of the annual meeting two years hence from assumption of office.
5. Vacancies - Vacancies among officers shall be filled by the Chairman, Chairman-elect or Secretary-Treasurer, in the same order of successional responsibilities previously indicated, for the unexpired term of office. Should all offices be concurrently vacant, they shall be filled by majority vote of the Executive Committee.
6. Nomination - The three-member Nominating Committee (Article III, Par. 6) shall present a slate of no more than two candidates for each elective position, namely Chairman, Chairman-elect, and Secretary-Treasurer.
7. Approval of Nominations - Prior approval shall be obtained from said candidates.
8. Announcement of Nominees - The Committee's list of nominees shall be sent to the Secretary-Treasurer and shall be included in the meeting program.
9. Floor Nominees - Additional nominations from the floor may be placed on the Nominating Committee's slate at the time of the annual meeting. Such nominees must formally accept the nomination while present on the floor. No person can be nominated who is not present at the annual meeting.
10. Balloting - When more than one nominee for an office has been nominated, written ballots shall be received from members present at the Annual Council Meeting by the Secretary-Treasurer and shall be counted by the Secretary-Treasurer and two members appointed by the Chairman. Balloting for an individual nominee (a single candidate for an office) may be taken by a show of hands or indicated by voice.
11. Alternate - If the Secretary-Treasurer's office is being contested, the Chairman-elect will fill the obligations of Balloting.
12. Election - The nominee receiving the largest number of votes (a plurality) shall be declared elected. No one may hold two elective positions simultaneously in the Council.

13. Order of Business - The order of business at the Annual Business Meeting, unless changed by a majority vote of members present, shall be as follows:
 1. Reading of the minutes of the previous meeting.
 2. Reports of the Secretary-Treasurer.
 3. Reports of the Committees.
 4. Election of Officers.
 5. Old Business.
 6. New Business.
14. Files - The Council shall maintain a file containing: Constitution and Bylaws, minutes of all meetings, correspondence pertinent to Council affairs, all committee reports, financial statements and records, and any other material judged by the Executive Committee as pertinent.
15. Resolutions and Public Statements - Council members shall submit resolutions for consideration to the Resolutions Committee (Article III, Sections 14, 20, 21, 22). These shall be accepted by the Committee and prepared for submission to the Council members 30 days on advance of the Annual Council Meeting. Information regarding previous actions taken by the Council may be issued by the Secretary-Treasurer upon request.

Article III - Committees and Staff

- Section 1. Appointments - The Chairman shall, with the help of the Executive Committee, appoint Chairmen of all regular standing and special committees, except that the Council Chairman shall appoint the chairman and members of the Nominating Committee.
2. Committee Decisions - Decisions of a committee shall be inviolate, and any desired revision or change would have to be appealed.
3. Appeal - Any appeal to change a committee decision shall have to come from the floor in the form of a motion, at the Annual Meeting, or at any special meeting called by the Chairman for this purpose.
4. Executive Committee - Shall be composed of the officers of the Council, the immediate Past Chairman of the Council, and the Editor.
5. Obligation - The Executive Committee shall conduct its affairs to conform with the provisions of the Constitution and Bylaws. The Executive Committee is authorized to act for the Council between meetings and shall report its interim actions to the members at the succeeding Annual Meeting. Any action of the Executive Committee may be overridden by a two-thirds majority vote of the attending membership.
6. Nominating Committee - Shall be composed of three members of the Council appointed by the Council Chairman.
7. Obligation - (See Article II, Sections 6, 7, 8, and 9)
8. Publicity Committee - Shall be composed of five members of the Council.
9. Obligation - It shall be the responsibility of the Publicity Committee to make public contact through news, radio and television media for publicity.
10. Restriction - Publicity, programming, awards and announcements shall be restricted to Council action.
11. Arrangements Committee - Shall be composed of three members of the Council.
12. Obligation - It shall be the responsibility of the Arrangements Committee to make necessary contact to provide meeting places, accommodations and any arrangements that will promote the success of a meeting. Information pertaining to arrangements shall be given to the Secretary-Treasurer 90 days prior to the meeting.
13. Program Committee - Shall be composed of three members of the Council.
14. Obligation - It shall be the responsibility of the Program Committee to develop an interesting and informative program and agenda for the Annual Meeting. The program agenda shall be given to the Secretary-Treasurer 30 days prior to the meeting date.
15. Constitution Committee - Shall be composed of the Council Chairman and Secretary-Treasurer.
16. Obligation - It shall be the responsibility of the Constitution committee to draft changes and revisions in the Constitution and Bylaws and present these changes to the Council for vote at the Annual Meeting.
17. Recommendations - Council members may recommend changes to the Constitution or Bylaws by submitting such changes to the Secretary-Treasurer for Committee consideration.
18. Acceptance - Constitution and Bylaws changes must be voted on and passed by two-thirds majority vote.
19. Resolutions Committee - Shall be composed of three members of the Council.
20. Obligation - It shall be the responsibility of the Resolutions Committee to draft resolutions in the accepted form and grammar, and present the resolution for discussion and vote. Resolutions shall be passed either by (1) majority vote of the assembled membership at the annual Council Meeting or (2) majority vote of the Executive Committee.
21. Recommendations - Council members may recommend adoption of resolutions by submitting such to the Chairman of the Resolutions Committee at least 30 days prior to the annual Council Meeting.

22. Limitations - Resolutions will be limited to subjects directly related to the management, conservation and protection of southeastern fishes or their habitat, or resolutions of gratuity or memorial.
23. Proceedings Committee - Shall be composed of an editor and five assistants of his choice.
24. Obligation - It shall be the responsibility of the Proceedings Committee to publish the annual proceedings.
25. Technical Advisory Committee - Shall be composed of Council members as follows:
The Executive Committee, 2 active field biologists from separate States, 3 faculty members from educational institutions carrying on research on southeastern fishes, and 3 individuals selected from the membership at large.
26. Obligations - It shall be the responsibility of the Technical Advisory Committee to serve at the direction of the Chairman in providing assistance and technical knowledge and expertise directed toward the preservation of the southeastern fishes and their habitats, and to perform other duties as outlined in the Constitution.
27. Selection - Technical Advisory Committee members shall be selected by the officers of the Council when necessary.
28. Awards Committee - Shall be composed of four members of the Council.
29. Obligations - It shall be the responsibility of the Awards Committee to evaluate and determine qualified Council members for consideration for any recognition deemed suitable to the cause.
30. Dissolution Committee - Shall be an automatic committee and shall be composed of the existing officers of the Council and the Technical Advisory Committee.
31. Obligation - (See Article VIII).
32. Miscellaneous Committees - Shall be appointed as needed to fulfill the desires of the Council in pursuing the Objectives and Purposes (Article II).
33. Area Coordinators - Shall be appointed for each of the major subdivisions of the drainage areas designated under Article II, Section 1.
34. Obligation - It shall be the responsibility of the Area Coordinators to function in a liaison capacity between the major subdivision involved and the Executive Committee, and as Chairmen of subcommittees appointed by them with the approval of the Chairman to assist in carrying out their responsibilities.
35. Accountability - All Committees shall be accountable to the Council Chairman.
36. Tenure - All Committees shall serve until new Committees are appointed in their stead, or until the duties assigned have been discharged, in conformance to Article II, Section 4.

Article IV - Meetings

1. Annual Meeting - The Annual Meeting of the Council shall be at the time as determined by the Executive Committee.
2. Location - The Annual Meeting shall be held at the location determined by the Executive Committee.
3. Meeting Notice - Notice of such meetings shall be given to the Secretary-Treasurer at least six months prior to the Annual Meeting. Council members shall be notified at least ninety days prior to the Annual Meeting.
4. Quorum - The quorum shall be over 50 percent of the indexed membership or 20 members, whichever is less.
5. Meeting Rules - The rules contained in the latest revision of Roberts' Rules of Order shall govern the Council in all cases in which they are applicable, and in which they are not inconsistent with the Bylaws or the special rules of order of the Council.
6. Special Meetings - Special meetings may be called as necessary by the Chairman or a majority of the full Council, and shall be called whenever requested in writing by 20 members of the Council.
7. Minutes of Meetings - Minutes of all meetings shall be recorded by the Secretary-Treasurer or any member designated by the Chairman. Minutes of Committee meetings shall be recorded by the designated Secretary of such Committee.

Article V - Finances

- Section 1. Finance - Funds of the Council shall be under the supervision of the Secretary-Treasurer and shall be handled by the Secretary-Treasurer.
2. Disbursement - The Secretary-Treasurer shall make no disbursements of the Council's funds, other than routine purchases, without authorization of the Chairman. The Secretary-Treasurer shall deposit all funds of the Council in a bank approved by the Executive Committee, at frequent intervals, and in the name of the Council. The Secretary-Treasurer shall balance the accounts at the end of each fiscal year and his report shall reflect the adjustments as required by the annual audit.
 3. Audit - An audit of the Council's financial status shall be made at the end of each fiscal year by the officers of the Council.
 4. Bond - The Secretary-Treasurer need not be bonded.
 5. Funds - Funds shall be derived from dues, special assessments, work projects and contributions.
 6. Dues - Annual dues shall be five dollars for members, ten dollars for contributing members, twenty-five dollars for

sustaining members, fifty dollars for sponsoring members, and one hundred dollars for life members, payable at the time of the annual meeting or during any time of the year.

7. Publication - The cost for producing and distributing the Proceedings of the Council shall be covered through dues, the sale of copies and contributions.
8. Fiscal Year - The fiscal year of the Council shall end on December 31.

Article VI - Amendments to the Bylaws

Bylaws may be adopted, amended or repealed at any annual business meeting by a majority vote of members present.

NOTES AND COMMENTS

Correction and Emendations to "Provenance and disposition of fish specimens appearing in color plates of Kuehne and Barbour's book, *The American Darters*"

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It has recently been noted that an error appears in the above paper, which was published in 1991 in Southeastern Fishes Council *PROCEEDINGS* 24. The present note serves to correct this error, and also provides updated nomenclature for all but one of the then-undescribed darter species illustrated by Kuehne and Barbour (1983). We thank Herbert T. Boschung for apprising us of this error.

Specimens appearing in plate 12-LB and RB of the Kuehne and Barbour book were both indicated as having the same collection data and catalogue number (UF 44011). Data indicated for the latter figure (RB) are correct. Corrected data for the other figure (plate 12-LB) are as follows:

Etheostoma (Ulocentra) sp. ("Redbelly snubnose darter") (= *E. zonistium*) (breeding male, 42.7 mm SL). UF 43835. Kentucky: Calloway Co., Dog Creek, 10mi. SE of Murray, at state route 121 bridge, 26 May 1969, R.A. Kuehne and R.W. Barbour (RAK no 93).

Several species were described subsequent to appearance of our 1991 paper. These species are listed below, together with the sources of description and accepted common names, which in some cases differ from those appearing in Kuehne and Barbour's book:

Plate 4-LB = *Percina stictogaster* Burr and Page, 1993. ("Frecklebelly darter").

Plate 12-RT - *Etheostoma colorosum* Suttkus and Bailey, 1993. ("Coastal darter").

Plate 12-RC - *Etheostoma chermocki* Boschung, Mayden and Tomelleri, 1992. ("Vermilion darter").

Plate 12-RB - *Etheostoma brevirostrum* Suttkus and Etnier, 1991. ("Holiday darter").

Plate 13-LT - *Etheostoma tallapoosae* Suttkus and Etnier, 1991. ("Tallapoosa darter").

It is important to note that the specimen appearing in Plate 12-RC was actually intended to represent the Warrior darter, which was subsequently described by Suttkus and Bailey (1993) as *Etheostoma bellator*. By chance, the specimen chosen by Kuehne and Barbour for illustration actually represented another new, and at the time unrecognized, species (later described as *Etheostoma chermocki*), which occupies an extremely restricted range in

the upper Warrior system. Although occurring allopatrically to *E. bellator*, the range of *E. chermocki* is completely encompassed by that of the Warrior darter.

LITERATURE CITED

- Boschung, H.T., R.L. Mayden and J.R. Tomelleri. 1992. *Etheostoma chermocki*, a new species of darter (Teleostei: Percidae) from the Black Warrior drainage of Alabama. *Bull. Alabama Mus. Nat. Hist.* 13: 11-20.
- Burr, B.M. and L.M. Page. 1993. A new species of *Percina* (*Odontopholis*) from Kentucky and Tennessee with comparisons to *Percina cymatotaenia*. *Bull. Alabama Mus. Nat. Hist.* 16: 15-28.
- Kuehne, R.A. and R.W. Barbour. 1983. *The American Darters*. The University Press of Kentucky, Lexington. 177pp.
- Suttkus, R.D. and R.M. Bailey. 1993. *Etheostoma colorosum* and *E. bellator*, two new darters, subgenus *Ulocentra*, from southeastern United States. *Tulane Stud. in Zool. and Bot.* 29(1): 1-28.
- Suttkus, R.D. and D.A. Etnier. 1991. *Etheostoma tallapoosae* and *E. brevirostrum*, two new darters, subgenus *Ulocentra*, from the Alabama River drainage. *Tulane Stud. in Zool. and Bot.* 28(1): 1-24.

ANNOUNCEMENTS

Editor's note.--Effective April 1993, David Heins took over the reins as Chairman of SFC, and Steve Walsh is Chairman-elect. This change was not noted in issue 28, but has been corrected on the inside back cover of this issue.

Seventh Annual Wildbranch Workshop In Outdoor, Natural History and Environmental Writing, 19-25 June 1994. Sterling College, Craftsbury Common, VT 05827. Contact David Brown, Director, 800-648-3591, for more information.

Availability of *Phylogenetic Systematics Video-Concepts and Application*, Copyright 1992, by Eugene G. Maurakis and William S. Woolcott, Biology Department, University of Richmond, Richmond, VA 23173. Concepts and application of phylogenetic systematics are presented in a two-part 24-minute video. Part I describes the development of a cladogram. In part II, cladistics is applied to an ethological phylogenetic analysis of relationships among cyprinid minnows that breed over gravel substrates. The video, accompanied by an Instructor's Manual, is an educational tool that can be used as an introduction to phylogenetic systematics. At cost

(including postage/handling): US standard video format (NTSC), US\$ 55; PAL/SECAM format, US\$ 90. Send US check/money order or purchase order payable to University of Richmond to: Dr. Eugene G. Maurakis, Aquatic Science and Aquaculture Program, St. Pauls College, 406 Windsor Ave, Lawrenceville, VA 23868. 804-848-4100.

ANNUAL SFC MEETING

SFC will meet with ASB at the University of Central Florida-Orlando, 13-16 April 1994. The business meeting will occur from 5-6 PM on Thursday, 14 April, in Salon # 5. There will be an anniversary social at Bruce Bauer's house, Friday, 15 April.

Southeastern Fishes Council PROCEEDINGS

Information For Contributors

The primary purpose of the PROCEEDINGS is to publish research papers, critical reviews of activities, area reports and other pertinent information pertaining to the biology and conservation of Southeastern fishes

Manuscripts should be submitted in duplicate. A good guide for manuscript preparation is the Fifth Edition of the *CBE Style Manual* available from the Council of Biology Editors, One Illinois Center, Suite 200, 111 East Wacker Drive, Chicago, IL 60601-4298.

The entire manuscript including the abstract (required for feature articles only), text, Literature Cited, tables, headings and legends must be double-spaced. The title, author's name and author's address should be centered on the first page. Indicate a suggested running head of less than ten words at the bottom of the first page. An abstract (if necessary) will be placed at the beginning of the text. Acknowledgements will be cited in the text immediately before the Literature Cited. All references cited in the paper will follow the standard format of using the last name of the author(s) followed by the year of publication of the paper. In the Literature Cited, the references will be alphabetical by the author's last name and chronological under a single authorship. The entire reference should be given with the complete name of the journal spelled out if possible.

Tables should be typed on a separate page, consecutively numbered and should have a short descriptive heading. Figures (to include maps, graphs, charts, drawings and photographs) should be consecutively numbered and if grouped as one figure each part block lettered in the lower left corner. In general, high quality prints or photocopies are preferred to the original line art. Legends for figures must be on a separate sheet and each figure must be identified on the back. The desired location of each table or figure should be indicated in the margin of the manuscript.

Manuscripts will subject to editing and will be reviewed by at least two anonymous persons knowledgeable in the subject matter. The edited manuscript and page proofs ("galley") will be furnished to the author. Upon returning the reviewed and corrected manuscript to the editor, a PC disk copy of the final form is also requested. Specific formatting information for the disk will be sent to the author with the edited manuscript. Reprints will be available at a nominal cost.

Regional reports, new notes and other short communications will also be edited and included when possible in the next number.

Only manuscripts from members of The Southeastern Fishes Council will be considered for publication. There is no charge for publishing in the PROCEEDINGS. All manuscripts and short communications should be sent to the editor:

Michael M. Stevenson
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University of New Orleans
Lakefront
New Orleans, LA 70148
(504) 286-7057

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