The Newsletter of
the Texas Chapter of
the American Fisheries Society

Volume 20 (1) January 1994

YET ANOTHER NEW LOOK (cf. Vol 66)

The Executive Committee has agreed to change the Newsletter numbering scheme to match that of many journals. The volume number now reflects the number of years that the TCAFS has been around and the number in parentheses refers to the issue number of the newsletter for the given volume. The old Volume number seems to have referred to the total number of newsletters published, starting from the primordial stirrings of the Chapter.

THE ROLE OF SCIENCE IN THE TEXAS CHAPTER OF THE AFS

by G. Joan Holt

Science should have a prominent position in the action plan for the Chapter. One of our major goals should be to support scientific understanding of issues by our members and to share this information with decision makers and the general public. This can be accomplished by:

1. **Annual meetings** present scientific findings and ongoing studies. This function can be strengthened by (a) special symposia or topics planned for annual meetings that bring together people working to resolve a particular problem and (b) inviting speakers outside of our group to give new insight into a problem of interest to many.

2. **Special symposiums** planned for times other than the during annual meeting would bring national and international attention to a specific topic of interest. The topic could be fairly specific (e.g., The Fish Tagging and Marking Symposium) or could focus a wide variety of interests on a special problem like the Freshwater Inflow Symposium did.

3. **Continuing education** can be developed either in conjunction with current University programs, as an offshoot of them, or may be developed by the Chapter. Another possibility is to strongly encourage our members (by providing information, funding, threats?) to take advantage of continuing education courses being offered by the parent society at their annual meetings and by the Southern Division.

4. **Public education** is an important step in using science to resolve fishery-related problems. The Chapter should take a lead role in getting information out to newspapers, radio and television, local citizens groups, and to policy makers (committee, individual members, training, and assistance?). Another way is to hold special fishing events that are well publicized.

5. **Special awards** acknowledge special efforts of members and could be given to others in policy making positions.

What do you members think of these ideas? Do you have further suggestions on how to accomplish the above (especially 4 and 5)? I will be using this and your input in the development of the Procedures Manual for the Chapter. Thus far I have received 30 responses to the questionnaire that was published in the last newsletter. I will still accept them if you want to send them in. In the next newsletter, I will summarize the results of the responses to the questionnaire.

Please send any suggestions and ideas regarding the Texas Chapter's action plan and Procedures Manual to:

G. Joan Holt
U.T.M.S.I.
Box 1267
Port Aransas, Texas 78373

Thanks for helping your Chapter.

GUIDE TO URBAN FISHING PROGRAMS UPDATE

by Charles Munger

The Urban Fishing Committee of the Texas Chapter of the AFS has completed the Guide to Urban Fishing Programs. All that remains to be done with this latest draft is to collect input from Chapter members at large about content, put the document in final publication format, get final editing comments, and proof the final draft, then publish the document. Unfortunately, I have yet to receive a request for a copy of the document from anyone who is interested in commenting. As it stands now, if no comments are received by 14 March, I will assume the document is accepted as is and will proceed with the publication process. The plan is to have the document ready for distribution by the 1994 Chapter meeting. For a copy of the draft contact:

Charles Munger
P.O. Box 835
Canyon, TX 79015
806-655-4341

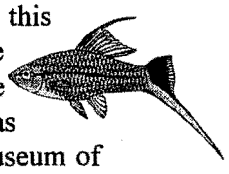
Your input on this document is needed.

GENETIC STOCKS OF *XIPHOPHORUS*

by Ronald B. Walter, Donald C. Morizot, and Klaus D. Kallman

(submitted by Bobby Gene Whiteside)

We wish to inform the scientific community of the current status of *Xiphophorus* fish genetic stocks and our efforts to save and maintain this invaluable and irreplaceable resource for future genetic research. Since the 1930's the *Xiphophorus* colony has been housed first at the American Museum of Natural History, then at the Osborn Laboratories of Marine Sciences, New York Aquarium, initially under the direction of Dr. Myron Gordon, and for the past 35 years under the direction of Dr. Klaus Kallman. Funding reductions in 1992 and the retirement of Dr. Kallman forced relocation of these animals to a new institution. Over the past year, a joint effort by the University of Texas - M. D. Anderson Cancer Center and Southwest Texas State University has resulted in transfer of all the genetic stocks to Texas. These stocks comprise a collection of several thousand animals representing over 70 different pedigrees housed in approximately 900 aquaria. Some of these stocks are extinct or endangered in the wild. The aquaria now are maintained at Southwest Texas State University pending acquisition of a permanent facility to house them. Our ultimate goal is to preserve the colony intact and to continue the line of breeding program that has allowed the provision of animals with documented pedigrees to scientists engaged in several areas of research including: genetics, tumor biology, sex determination mechanisms, sexual selection, endocrinology, and population dynamics. Some of these stocks have documented inbred pedigrees for more than 80 generations of brother-sister matings and thus essentially are genetic clones. The ability to fulfill our goals will depend on success in obtaining funding to maintain the genetic stocks and to breed sufficient numbers of animals to fulfill the needs of the research community. If we do not succeed in our funding efforts, the result is likely to be loss of the collection. Since these stocks cannot be duplicated or replaced, such a loss would be a scientific tragedy.



Xiphophorus strains and hybrids provide a number of unique genetic tumor models, some of which recently have been prominently featured in the scientific literature. In addition, the *Xiphophorus* genetic map represents the sixth largest genetic map among vertebrates, making this animal model an invaluable resource for comparative genetics. Molecular analyses of *Xiphophorus* genes involved in DNA repair and carcinogenesis indicate they possess very high conservation in sequence structure (over 80% amino acid identity) compared with those of humans, further supporting the utility of these animals for a model system. The National Institutes of Health (NIH) have emphasized the importance of the use of non-mammalian vertebrate models for disease research and *Xiphophorus* fish have a large potential for helping to fill this need. However, our informal inquiries regarding the prospects for genetic stock center funding to maintain the *Xiphophorus* colony from the NIH and National Science Foundation have been rather discouraging.

We, and some of our scientific collaborators, have been able to provide limited financial support of the colony through investigator-initiated grants which depend on some *Xiphophorus* stocks; however, a long-term solution for the survival of this resource depends on dedicated funding.

We intend to pursue vigorously all potential avenues of funding to support the *Xiphophorus* colony. If we are to succeed, it will be because the scientific community recognizes the value of this resource and

XIPHOPHORUS (continued)

supports us in our efforts. Since the stock center is now operational, we ask that scientists planning to utilize *Xiphophorus* stocks in their research please send a letter to Dr. Ronald Walter stating their plans with regard to the stocks required, the specific crosses to be made, and the numbers of fishes needed. It will be necessary to charge a fee for requested animals in order to maintain the center. We encourage early contact with the stock center to allow adequate planning for these costs in anticipated or pending research projects. Also, letters of support concerning saving this scientific resource are enthusiastically welcome at this crucial stage in stock center perpetuation. Our addresses are:

Ronald B. Walter, Co-Director
Xiphophorus Genetic Stock Center
Southwest Texas State University
Department of Biology
San Marcos, Texas 78666

Donald C. Morizot, Co-Director
Xiphophorus Genetic Stock Center
University of Texas M. D. Anderson Cancer Center
Science Park - Research Division
Smithville, Texas 78957

Klaus D. Kallman, Past Director
Xiphophorus Genetic Stock Center
American Museum of Natural History
Osborn Marine Laboratories - New York Aquarium
New York, New York 10024

TEXAS FRESHWATER MUSSEL STUDIES

by Robert G. Howells

(submitted by Ronnie Pitman)

Probably no group of organisms in North American fresh waters is following the passenger pigeon's path to extinction as rapidly as are freshwater mussels (Family Unionidae). In recent years, this group finally has started to attract the attention of scientists who have nearly ignored it for far too long. In Texas, early Spanish explorers sought mussels for the gem-quality pearls some produce and in 1909 a pearl rush at Caddo Lake drew national attention. Mussel shells were harvested to make buttons until the development of plastic. Shells also are taken for use as nuclei in the cultured pearl trade. None the less, Texas Parks and Wildlife Department (TPWD) had no programs to monitor either the mussel resource or the sport and commercial fishery it supported. Indeed, except for a few university and museum scientists, Freshwater mussels were all but forgotten by the scientific community in Texas.

In fall 1991, a price war developed among shell buyers who purchased mussels shells for subsequent shipment to the Japanese cultured-pearl farmers. When shell prices reached as much as $10 per pound, such a large number of residents and non-residents were harvesting Texas mussels that the fishery and the resource could no longer be ignored by TPWD. In December 1991, Heart of the Hills Research Station (HOH) personnel were contacted and in 1992 and 1993, a formal mussel studies program developed. It quickly became evident that we knew far too little about this resource in Texas. There were no reference books for the state and the fishery had never been monitored. Licensing requirements in Texas were much less stringent and licenses far cheaper than in many other states.

The first move implemented by TPWD was a questionnaire survey of mussel license holders both in Texas and elsewhere. Data subsequently generated were used to prepare a formal report on the fishery. The Department also began field survey work to determine the present status of Texas mussel populations and associated research to fill in voids in our understanding of native species. Additionally, Dr. Ray Neck (Houston Museum of Natural Science) and Dr. Harold Murray (Trinity University) joined with TPWD to produce a text book on Texas unionids.

These are some areas of TPWD mussel work:

Spawning season studies.--specimens have been collected and examined for 2 years to define this largely unknown aspect of mussel biology in Texas; preliminary data will be presented in the mussel book.

Age and growth of Texas mussels.--grow-out pond studies and shell annular markers are being examined to attempt to define age and growth in Texas.

Glochidial descriptions.--the glochidial stage of nearly half of the local unionid species was unknown; so far we have obtained examples of eight of these. Descriptions will be published.

Host determination.--fish hosts necessary for development of the parasitic glochidial stage were unknown for many local mussels; hosts for several mussels have been determined.

MUSSEL STUDIES (continued)

Revisions in licensing laws.--the Texas legislature was encouraged to modify and upgrade licensing laws in 1993.

Revisions in TPWD mussel harvest regulations.--these were changed both in 1992 and 1993. Regulations now include: minimum harvest sizes, sanctuaries, day-only harvest, and limited harvest on weekends.

Ouachita rock-pocketbook (*Arkansia wheeleri*).--two specimens of this federally endangered species were located in northeastern Texas; previously, less than 100 were known to occur in Arkansas and less than 1,000 in Oklahoma. Discovery in Texas extended the range of this endangered species and brought us our first federally listed mussel.

The following are some mussel publications that TPWD is involved in:

Howells, R. G. 1993. Preliminary survey of freshwater mussel harvest in Texas. TPWD Management Data Series 100.

Howells, R. G. (in press). Preliminary distributional surveys of freshwater bivalves in Texas: progress report for 1992. TPWD Management Data Series 105.

Howells, R. G. (in progress). ibid: progress report for 1993.

Howells, R. G., R. W. Neck, and H. D. Murray. (in revision). Freshwater Mussels of Texas.

Info-mussel newsletter - produced monthly at HOH to keep interested parties informed of progress.

The HOH staff plans to examine new waters for mussel populations and focus on declining species and mussel sanctuaries during the 1994 field season. Unfortunately, many mussel populations are declining rapidly. The threatening invasion of the exotic zebra mussel (now in Oklahoma, Arkansas, and Louisiana) promotes even more concern.

In summary, the HOH staff now is actively involved with freshwater mussel research. A major reference book on these animals should be available shortly. Basic inquiries, identification problems, etc., can be directed to:

Bob Howells
TPWD, HOH
HCR-7, Box 62
Ingram, TX 78025

AFS BBS UPDATE

by Charles Munger

If you have been reading your Fisheries magazine or the Fisheries Action News (or the last TCAFS Newsletter) you have by now figured out that my last article on the AFS Bulletin Board Service (BBS) was wrong. Between the time I wrote the article and when it was published, the AFS BBS closed down and moved to CompuServe. If you do not belong to CompuServe and would like to access the AFS Section, you can get a free subscription by phoning 1-800-848-8199 and asking for representative #190. The free temporary membership (which includes a free $15-value connect time) is courtesy of the Earth Forum on CompuServe. After your free subscription expires you can purchase a regular CompuServe membership at the standard price of $8.95 per month.

SURVEY ON HUMAN DIMENSIONS AND FISHERIES MANAGEMENT

by Gene Wilde

The Fisheries Management Section of the AFS created a committee on the Human Dimensions in Fisheries Management at its annual (1993) business meeting in Portland, Oregon. The committee was created to facilitate better communication between human dimensions researchers and fisheries managers. The committee currently is finalizing a questionnaire that will be sent to state fishery agencies to determine what kinds (e.g., attitudinal, motive, demographic, economic), and to what uses, human dimensions information is being used by these agencies. A list of reports and publications produced by each agency also will be solicited in an attempt to produce a bibliography to facilitate design, analysis, and interpretation of human dimensions studies conducted or contracted by agency personnel.

Results of the survey will be presented in a symposium sponsored by the Fisheries Management Section at the 1994 Annual Meeting of the American Fisheries Society in Halifax, Nova Scotia. For more information about the survey or the Human Dimensions in Fisheries Management Committee contact:

Dr. Robert Ditton
Texas A&M University
College Station, TX 77843
409-845-9841

22ND ANNUAL FISH FEED AND NUTRITION WORKSHOP

by Beverly Villarreal

The 22nd Annual Fish Feed and Nutrition Workshop was held 17-19 November 1993 in Baton Rouge, Louisiana. An unusual characteristic of these workshops is that each is an informal association (no membership roster) of persons interested in the subject and is primarily composed of university researchers, feed company researchers and technical support, and a spattering of other fisheries researchers and producers. At each annual meeting, someone volunteers to host the next year's workshop. This year's host was Louisiana State University Agricultural Center. Registration was $50.00 which included 2 days of presentations, and a half-day tour of a catfish and crawfish farm and the LSU Agricultural Center's Aquaculture Research Laboratory (home of the world's first and only channel catfish sperm bank). Next year's meeting will be held at Twin Falls, Idaho, in October. More specifics on the exact date and format will be forthcoming.

Presentations described cutting-edge research in the field. Categories were: alternative feed ingredients, nutrient requirements/enzymes, larval nutrition, feeds and feeding, and crustacean diets/diet digestibility.

Of the 27 presentations scheduled, seven reported on trout or salmon concerns, and 16 addressed warmwater fish and crustacean concerns. Another three papers were of general interest. Warmwater fish nutrition received a lot of research attention, partly because it is still in its infancy when compared to coldwater fish nutrition, but also because of the meeting location near a hotspot of research centers.

Warmwater fish species research presented at the workshop included:

- Dietary threonine requirement of juvenile red drum. (R. S. Boren and Delbert Gatlin, Texas A&M University)
- Choline requirement of hybrid striped bass. (Paul Brown, Purdue University)
- Sulfur amino acid nutrition of sunshine bass. (C. N. Keembiyehetty and Delbert Gatlin, Texas A&M University)
- Vitamin and mineral supplementation of practical diets for golden shiners. (Rebecca Lochmann and Harold Phillips, University of Arkansas-Pine Bluff)
- Soy-lecithin supplementation of practical diets for goldfish. (Ramone Brown and Rebecca Lochmann, University of Arkansas-Pine Bluff)
- Nutrition and feeding of larval red drum: early weaning. (Joan Holt, University of Texas Marine Science Institute)
- Temperature-dependent responses in lipid metabolism of juvenile channel catfish fed diets containing different sources of lipid. (Yii-Shing Huang and Lou D'Abramo, Mississippi State University)
- Ethanol extraction of soybean meal improves growth rate in fingerling channel catfish. (Bob Wilson, Mississippi State University)
- Effects of dietary fumonisin on growth and histology of channel catfish. (Meng Li and Ed Robinson, Mississippi State University; Tom Lovell, Auburn University)
- Channel catfish broodstock feeds. (Carlos Aceituno and Randy Robinette, Mississippi State University)
- Digestibility of feed ingredients in hybrid striped bass diets. (Andrew Sullivan and Robert Reigh, Louisiana State University)
- Digestibility coefficients of feedstuffs in red drum diets. (Bruce McGoogan and Robert Reigh, Louisiana State University)

THE TCAFS NEEDS YOUR HELP

by Loraine T. Fries

We need volunteers to work on an update of the "Texas Fisheries Workers Directory". If you would like information or be willing to spend time on this project, please contact me at 512-353-3492.

IF YOU MISSED THE MEETING...

The 1993 meeting of the TCAFS was a definite success: we had numerous and informative presentations at the technical session; an exciting and economically productive social; and a lively, thought-provoking panel discussion by a group of renowned professionals. However, you may be one of the few that missed the meeting but really wanted to go or you may be one who simply wishes to relive history. If so, a VHS copy (two tapes) of the entire panel discussion will be available soon. To get a copy of the tapes, contact:

Loraine T. Fries
P.O Box 947
San Marcos, TX 78667

(Subject: Fish Stockings - Pros and Cons)

UPCOMING MEETINGS

by Mark Stacell

26 February-1 March	**Midyear Meeting of the Southern Division of the American Fisheries Society**
location	Camelot Hotel Little Rock, AR
contact	Dr. Mark Peterson Mississipi State University, MS 601-325-8591
12-17 March	**Symposium on Uses and Effects of Cultured Fishes in Aquatic Ecosystems**
location	Albuquerque Convention Center Albuquerque, NM
contact	Delano Graff Bellefonte, PA 814-359-5154
21-25 August	**124th Annual Meeting of the American Fisheries Society** "Managing Now forthe 21st Century: Food, Recreation, Diversity"
location	World Trade Center Halifax, Novia Scotia
contact	Paul Brouha Bethesda, MD 301-897-8616

WALLEYE TECHNICAL COMMITTEE UPDATE

by Charles Munger

The Walleye Technical Committee (WTC) of the North Central Division AFS is exclusively concerned with the biology and management of walleye, sauger, and saugeye (their hybrid). Though not typically thought of as Texas fishes, populations of walleye and saugeye are established in many areas of the state and locally are very important species. As the Chapter representative to the WTC, I thought I would present an update about what happened at the 1993 Summer WTC meeting in Dubuque, Iowa.

The feature presentation at the meeting was an overview, given by Dr. Forney, on 100 years of walleye management at Oneida Lake. Some conclusions he has drawn from a very large data base are:

- ✧Variable larval survival is likely to obscure any relation to future population size.
- ✧Walleye are the major predators of walleye.
- ✧Faster growth rates will result in lower angler catch rates.
- ✧All that stocking 100-200 million fry per year for 100 years has accomplished has been artificially preventing the collapse of the fishery.

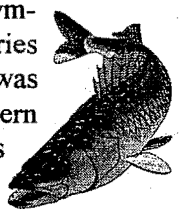
A variety of information was presented by other member states. The following is what I felt was most important:

- ✧The majority of walleye fisheries are driven by single strong year classes.
- ✧Temperature fluctuations in the month immediately after hatching directly affects year class survival.
- ✧Using sectioned dorsal spines to age walleye is becoming more common now, is much more accurate than using scales, and is non-lethal.
- ✧Anglers will fish in the lakes where they have the most success. If they have little success they will move to another lake.
- ✧Minnesota is evaluating an Assessment by Analogy management program that is based on the idea that if management works on one lake it should work on all similar lakes.
- ✧Forty-four classes of lakes have been identified.

Team Saugeye

For those of you on the team, Tom Mosher is now coordinating the multi-state project. Don Gabelhouse has moved on to be the Fisheries Chief for Nebraska. There currently are four Texas lakes involved with Team Saugeye research.

The final bit of information is on the Walleye Length Limit Symposium. The symposium will be conducted as part of the Midwestern meeting in 1995 or will be combined with the Esocid Committee symposium for another Coolwater Fisheries Symposium in 1997. The final decision was to be made at the December Midwestern meeting. I will pass the info along as soon as I find out more.



FISH AND FISHERIES MANAGEMENT IN LAKES AND RESERVOIRS: A FREE PUBLICATION!

by Gene Wilde

The Terrene Institute, under contract with the U.S. Environmental Protection Agency (EPA), has produced a technical guidance manual on fisheries management, "Fish and Fisheries Management in Lakes and Reservoirs," for state and local use in cooperation with the EPAs Clean Lakes Program. This is a companion volume to "The Lake and Reservoir Restoration Guidance Manual" (covering limnological and water quality issues) published in 1990 by the EPA.

The manual covers a wide range of topics including: lakes and reservoirs as ecosystems; fish ecology; setting management goals, objectives, and priorities; management techniques; designing sampling programs; and the role of modeling in fisheries management. The manual is well-documented and includes seven fishery management case histories. The manual should be of interest, and use, to all fishery managers.

The manual can be obtained by writing:

U.S. Environmental Protection Agency
Clean Lakes Program, WH-553
401 M Street SW
Washington, DC 20460

Ask for publication number EPA841-R-93-002 (Fish and Fisheries Management in Lakes and Reservoirs). For those interested, "The Lake and Reservoir Reservoir Restoration Guidance Manual" can be obtained by writing the U.S. Environmental Protection Agency, Office of Water, at the street address above, and asking for publication number EPA440/4-90-006.

MYSTERY REVEALED

In the last issue of the newsletter (Vol. 66) the following puzzle was given:

Mystery of the Pies - If the dependent variable is "filled-in blanks on the membership form" what is the independent variable?

The answer was "money" or, more specifically, "three bucks". It appeared that members tended to fill out the membership form most completely where money was involved.

CURRENT AQUATIC RESEARCH PROJECTS FROM AROUND THE STATE (or Who's Doing What Where)

by Beverly Villarreal

This column was founded as a way to increase chapter awareness of aquatic-related research being conducted at universities and research facilities around Texas and to contribute to the exchange of scientific and technical ideas. The following list summarizes responses from two universities: Southwest Texas State University (SWTSU) in San Marcos, Texas, and the Sea Grant College Program (SG), Texas A&M University, Bryan, Texas. Not all persons or agencies involved in the various projects, and not all projects, were consistently reported so only the student and major professor are given for SWTSU. The names of the investigators are given for SG. For further information contact Bobby G. Whiteside (SWTSU) at 512-245-2284 or Granvil Treece (SG) at 409-845-3854.

Macroinvertebrate Ecosystem Studies (SWTSU)

•Spatial and temporal changes in the distribution, abundance and life history characteristics of the exotic giant rams-horn snail (*Marisa cornuarietis*) in the Comal Springs ecosystem of central Texas and the significance of a predator avoidance behavior. (Michelle C. Badough and T. L. Arsuffi)

•A rapid bioassessment study of Seco Creek. (Lendon E. Gilpin and G. Longley)

•Life histories and secondary production of predaceous macroinvertebrates in managed aquatic ecosystems. (Anita T. Holmes and T. L. Arsuffi)

•Feeding and performance of the giant rams-horn snail, *Marisa cornuarietis*, on different aquatic macrophytes. (Melani Howard and T. L. Arsuffi)

•Intraspecific competition for space among ambush-style predaceous aquatic macroinvertebrates. (Jana R. Obenosky and T. L. Arsuffi)

•Longitudinal and regional patterns in the functional feeding group composition of macroinvertebrates in karst topographic streams of the Edwards Plateau. (J. Murry Owen and T. L. Arsuffi)

•Leaf processing and microbial dynamics in a thermally constant spring-fed stream: A comparison between terrestrial, deciduous and aquatic vascular macrophytes. (Erica B. Schlickeisen and T. L. Arsuffi)

•Interspecific competition amongst a scraper gastropod guild and the effects of an introduced leaf-shredding snail on guild structure. (Renee R. Seaman and T. L. Arsuffi)

•Longitudinal and seasonal variation in taxonomic and functional feeding group composition of macroinvertebrates of a central Texas stream, Cibolo Creek. (Darrel C. Solanik

TEXAS RESEARCH PROJECTS (continued)

and T. L. Arsuffi)

•Life history patterns, diversity and seasonality of caddisflies (Trichoptera) in four streams with contrasting temperature and flow regimes in the Guadalupe River basin. (Sidne G. Tiemann and T. L. Arsuffi)

•Population genetic structure and degree of feeding specialization of giant rams-horn snails, *Marisa cornuareitis*, in different aquatic habitats. (Jody D. Williams and T. L. Arsuffi)

•Taxonomic composition and secondary production of macroinvertebrates associated with snag habitats of Allens Creek, Austin County, Texas. (Chip R. Wood and T. L. Arsuffi)

Fisheries Surveys/Management (SWTSU)

•Food habits and habitat utilization of the black basses in a 10-km section of the Blanco River. (Bryan Farquhar and B. G. Whiteside)

•Development of fisheries regulations for Texas streams. (William Gammel and B. G. Whiteside)

•Ontogenetic shifts in diet composition and prey selectivity by fountain darters, *Etheostoma fonticola*. (Scott Bergin and T. L. Arsuffi)

•Survey of the fish community of the San Marcos River. (Travis Kelsey and B. G. Whiteside)

•Fishery evaluation of streams within the proposed Goliad and Cibolo Creek reservoir sites. (Larry Larralde and B. G. Whiteside)

Water Quality/Aquatic Toxicology (SWTSU)

•Evaluation of the water quality and fishes of the proposed Goliad Reservoir site. (John Findeisen and B. G. Whiteside)

•Evaluation of the water quality and fishes in Cibolo Creek. (Steve Lusk and B. G. Whiteside)

•Mercury uptake in aquatic communities. (John A. Carroll and G. Longley)

Fish Culture (SWTSU)

•Use of formulated feeds for largemouth bass, *Micropterus salmoides*, broodstock maintenance: Effects on gonadal growth and spawning success. (Gordon Garwood and P. M. Rosenblum)

•Dietary effects on ovarian steroidogenesis in largemouth bass, *Micropterus salmoides*. (Heather Horne and P. M. Rosenblum)

•Laboratory culture of longnose darters and San Marcos salamanders. (Joy L. Schulze and B. G. Whiteside)

•The effects of duoculture with striped bass on the winter growth of channel catfish. (Dennis Smith and B. G. Whiteside)

•The comparison of muscle and gonadal tissue composition from broodstock Florida largemouth bass, *Micropterus salmoides floridanus*, fed one of five pelleted diets or a live forage diet. (James Daniel Swim and P. M. Rosenblum)

Fish Culture (SG)

•Role of microbial ecology in larval fish nutrition. (Joan G. Holt and Philippe Douillet)

•Integrated strategies for overwintering red drum with dietary lipid manipulation and thermal refuge technology. (Delbert M. Gatlin and William H. Neill)

•Physiology of somatolactin and actions of recombinant somatolactin in red drum and Atlantic croaker. (Peter Thomas)

•Life cycle studies of the red snapper (*Lutjanus campechanus*) and yellowtail snapper (*Ocyunus chrysurus*). (Connie Arnold and Joan G. Holt)

•Microcomputer-based automation and expert system development for aquaculture. (Phillip G. Lee, Louis C. Sheppard, Hao Ying, and Roger T. Hanlon)

Water Use-Recreational (SWTSU)

•An analysis of recreational uses of the Upper San Marcos River. (David Bradsby and B.G. Whiteside)

Sea Turtles (SG)

•The reproductive and migratory biology of sea turtles in the Gulf of Mexico. (David W. Owens and Richard A. Byles)

•Ecological status of the Kemp's Ridley sea turtle in a Northwestern Gulf of Mexico index habitat. (Andre M. Landry, Jr.)

Shrimp Commercial Fisheries (SG)

•The role of passive acoustics in locating and assessing offshore Penaeid shrimp populations. (Robert H. Benson and William E. Evans)

Hopefully, there will be additional listings in the next newsletter. If you currently are working on a research project that you would like the Chapter to know about, send the information to:

Beverly Villareal
P.O. Box 947
San Marcos, TX 78667

A man may fish with the worm that hath eat of a king, and eat of the fish that hath fed of that worm.
Shakespeare, W. 1600. Hamlet.

EXCOM MEETING NOTES

by Kathy Ramos

The executive committee (EXCOM) met in San Marcos on 11 January 1994. Members attending were Loraine Fries, Pat Hutson, Beverly Villarreal, Bobby Whiteside, Barry Lyons, John Moczygemba, Mark Webb, Mark Stacell, Ronnie Pitman, Bill Seawell, Earl Chilton, and Kathy Ramos.

A financial advisor of Merrill Lynch, Pamela Whitney, visited with the EXCOM and outlined investment options and strategies to help the Chapter meet its goal of providing more financial assistance to fisheries students. A motion was passed that the elected officers would make the final decision on what type of investments would be made.

Loraine Fries asked all committee chairpersons to put together an article for the newsletter outlining the scope, jobs, and operation of their respective committees.

John Moczygemba reported that the Awards Committee will work to better define the selection criteria for the various awards and make this information available to the general membership. There may be a record nine manuscripts published in the next Chapter Proceedings. The Endowments Committee has several new members and is planning to aggressively solicit nominations of students for scholarships. An increase in the number of nominations that may be submitted from one school also is planned.

The Exotic Species Committee will be submitting articles to the newsletter on timely issues and supplying information to the Issues Committee. These two committees will be working to formulate position statements on various issues (e.g., grass carp, integrated control, dredging in coastal areas) that can be presented to the public through different outlets.

According to Ronnie Pitman membership has grown to 203 members. Article submissions to the newsletter have increased. The Nominating Committee welcomed ideas on ways to get a more diverse pool of nominations. It was proposed that the Chapter sponsor a symposium on private pond management for land owners. The possibility of making a video tape of the meeting available to different organizations was discussed. Networking and co-sponsoring with other organizations also was proposed.

The Chapter will have a booth at the upcoming Texas Aquaculture Association meeting to try to attract new members. Pat Hutson will be making a presentation on what the Chapter has to offer this group. Mark Stacell will be setting up the booth and welcomed input on how to best reach this audience. A new brochure is nearing completion and will be available at this meeting. Work is continuing on revision of the membership directory. The Chapter will be represented at several upcoming meetings such as the Midterm Meeting of the Southern Division of AFS.

Proposals that will be considered at the next EXCOM meeting are: sponsorship of an award for outstanding conservation science project by school children, holding float trip and river cleanup activities on various rivers throughout the state, and participation in Fredericksburg Outdoor EXPO in May.

COOPERATIVE INTERJURISDICTIONAL RIVERS FISHERIES RESOURCES ACT

Not too long ago our Issues Committee (B. G. Whiteside, at the time) put together a resolution supporting H. R. 2500 (Cooperative Interjurisdictional Rivers Fisheries Resources Act of 1993). While Congress was in session in the fall of 1993, they passed this legislation. Since Texas has some interjurisdictional waters, we might continue to support this in the following years. Let your Congressmen know how you feel.

A NEW NAME, A NEW GAME?

by Bill Seawell

The San Marcos National Fish Hatchery & Technology Center, formerly with the U.S. Fish & Wildlife Service, was officially transferred in November to a new agency in the U.S. Department of the Interior: the National Biological Survey (NBS). The NBS is charged with providing a national focus for Federal biological research and monitoring the nation's living resources.

The San Marcos unit currently is assigned to the National Ecology Research Center, Fort Collins, Colorado, but re-assignment to another center (maybe Gainesville, Florida, or Lafayette, Louisiana) may occur soon. Future direction of work at the facility is uncertain, but some emphasis is expected to be placed on biological problems related to water withdrawals from the Edwards Aquifer.

GREENTHROAT DARTER EGG HATCH INHIBITED BY AMPHIPODS

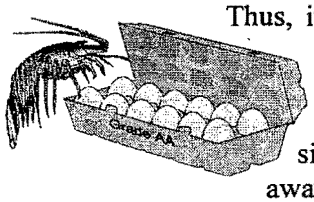
by Casey S. Berkhouse

Darters have been maintained exclusively on live foods at the San Marcos National Fish Hatchery and Technology Center (NFHTC) for several years. Tubifex worms have been the primary food but the diet also has been supplemented with other invertebrates, including amphipods, collected from NFHTC ponds. I have noticed that the amphipods that escaped being eaten often congregated in the spawning substrate. Any eggs on the substrate then became exposed to potential amphipod predation. Pennak (1978, Freshwater Invertebrates of the United States) referred to amphipods as "voracious" omnivores and I suspected that they might impact darter egg hatch at the NFHTC. This article summarizes the results of a study on the effects of amphipods on the hatching success of greenthroat darter eggs.

Methods.--Amphipods used during this study were collected from largemouth bass broodstock ponds at the NFHTC and were retained on an 850µm-mesh screen. Greenthroat darter eggs used were ≤ 2 d of age. Two trials were conducted. For the first trial each of 10 small dishes was filled with 250 ml of water and 10 darter eggs. Five of these dishes received 10 amphipods each. The dishes were checked daily and larvae were removed and enumerated. The second trial was similar to the first except that 15 dishes were used - five with 10 eggs and 0 amphipods, five with 10 eggs and 2 amphipods, and five with 10 eggs and 5 amphipods.

Results.--In the first trial, significantly more eggs hatched in the dishes without amphipods (82% vs. 42%, P=0.003). In the second trial, egg hatch without amphipods was about equal to that where the eggs were exposed to two amphipods per dish (92% vs. 68%, P=0.055). However, egg hatch in the dishes with five amphipods each was significantly lower than that where eggs were not exposed to amphipods (34% vs. 92%, P=0.002).

Discussion.--Amphipods can have an inhibitive effect on egg hatch of greenthroat darters in small containers. Thus, if you are using amphipods as a food and you are producing darter larvae, or perhaps larvae of any small fish, consider keeping the amphipods away from the eggs: remove the eggs from water with amphipods or don't use amphipods during egg production.



PRESIDENT'S MESSAGE

by Loraine T. Fries

One of my goals as President was to get more members involved with Chapter activities. The main tool I have to accomplish this is committee appointment. I am pleased to announce that our Executive Committee is working for you. At our last meeting, we considered ways to improve the quality of our investments so that we can grow our money and improve our funding of scholarships and Chapter activities. Additionally, several of our members will be serving on committees originated by the parent society.

Pat Hutson, our President-Elect, will represent the Chapter at the Texas Aquaculture Association Conference in February. As an invited speaker, he will discuss the role of the AFS in Aquaculture. The Chapter will be operating a booth at the trade show (members attending the meeting are encouraged to get involved and "do some time" at the booth). This meeting also will be the first use of our new and improved membership brochure.

This is your Chapter. If you want to have a voice in what the Chapter does, you must get involved. Join a committee, write a letter to the editor, and attend the annual meeting. We can only be as good as the efforts contributed by you, the membership.

SAFETY AND THE BBS

by Charles Munger

All you ADSOs (Additional Duty Safety Officers) pay attention!

To all the ADSOs (you know who you are) and anyone else interested in safety and job standards. The U.S. Department of Labor has its own Bulletin Board Service (BBS). This BBS contains a lot of information on Occupational Safety and Health Administration (OSHA) regulations, Hazardous Materials training, and general safety information. Many OSHA and Dept. of Labor publications are available on the board including regulations and facility requirement publications. Other areas on the board include hiring and job information, labor statistics, and information from the Equal Employment Opportunity Commission. The board doesn't cost anything except the telephone charge. You can access the board at 202-219-4784. This is a great source of information if you are working on your monthly safety training.

MEMBERSHIP APPLICATION AND RENEWAL
TEXAS CHAPTER OF THE AMERICAN FISHERIES SOCIETY

for the period: 1993 Annual Meeting - 1994 Annual Meeting

Name _____
Address: _____
_____
_____
_____

Primary Field of Interest _____
Affiliation _____

Check the two that apply:

___Regular Membership ($8)
___Student Membership ($5)

___AFS Member
___Non-AFS Member

Send dues to:

Kathy T. Ramos
P. O. Box 947
San Marcos, Texas 78667

If you have an interest in serving on a committee, check one (or more) of the following:

___Awards
___Issues
___Pond Management
___Grass Carp
___Editorial
___Membership
___Publicity/Exhibits
___Procedures Manual
___Endowments
___Nominating
___Newsletter
___Urban Fishing

NEWSLETTER EDITOR

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THE POWER OF TEAMWORK

I (the editor) think this is the biggest and most informative TCAFS newsletter that we've had since I've been a member! Although I'd like to take the credit the truth is that a remarkable amount of membership input and others' efforts have compelled the newsletter to essentially write itself. Count em. There were 14 people, some not Chapter members (yet), who have contributed to this newsletter. That's almost 7% of the Chapter membership. A few people have even contributed more than one piece. I, and presumably the rest of the Chapter, would like to thank those who have helped with this newsletter by sending in the raw materials for what you see as you read this newsletter.

Now...for the next newsletter...if you'd like to help keep the Chapter on this activity-roll, or if you just want to see your name in lights (laserjet print), please think about something you know that the Chapter doesn't know and put it in print (and on floppy in some kind of IBM-compatible format). Release some of that bound-up knowledge and make the TCAFS shine. Send me your input.

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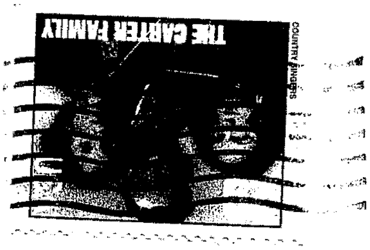

31 JAN
1994
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SAN MARCOS, TEXAS 78666

THE NEWSLETTER OF
THE TEXAS CHAPTER OF
THE AMERICAN FISHERIES SOCIETY