

The Newsletter of  
the Texas Chapter of  
the American Fisheries Society



Volume 21 (1)

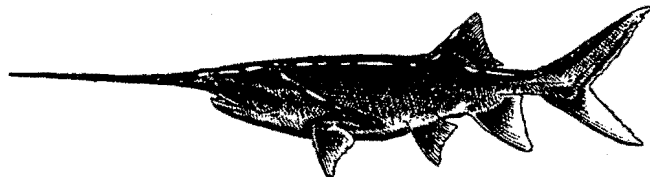
March 1995

**PRESIDENTS MESSAGE**

*by Pat Hutson*

We are about at the half way point for the year, and have made significant progress toward our goals. Hard work by the dedicated committee members made it happen. Loraine has been working hard to organize a continuing education course for fisheries' workers. Mark has the 1995 annual meeting arrangements well in progress. All committees have been active and many accomplishments are expected for the year. As President, I depend heavily on the various committees. I am fortunate to have hard working, dedicated people to serve. The procedures manual should be complete in a few months and recommended chapter by-law changes will be in the next newsletter for membership review.

The chapter had a very successful cooperative effort with the Texas Aquaculture association on a student outreach program. More than 50 students from six different high schools attended a field trip to the A.E. Wood State Fish Hatchery in San Marcos and received hands on training in many aspects of fish culture and management. The students had the opportunity to sample rainbow trout length/weight, harvest channel catfish, identify plankton, determine size distribution, do an age and growth exercise and use a computer to analyze data. Success of this effort was made possible by the staff at the hatchery and the San Marcos management crew. Thanks for a very successful chapter event.



**TCAFS 1995 ANNUAL MEETING**

*by Mark Webb*

College Station has been set as the site for this years annual meeting. Several changes are planned for this years agenda to specifically address our chapter goals of increasing the diversity of chapter participation and becoming more proactive concerning fisheries issues. The meeting will be held on **September 11-12** (Monday and Tuesday) at the College Station Hilton with a special student seminar on career planning on Sunday afternoon September 10. A student professional mixer is planned for Sunday night with all members invited. The purpose of the Sunday-Tuesday meeting dates as well as the location of the meeting in College Station is to try to increase participation by university faculty and students as well as members or prospective members that may find the central location convenient. The other main deviation from the meeting schedule adopted in recent years is a special session of "issues" presentations has been added to better inform members of issue topics before they are discussed in the business session. We hope this special session will help the membership as a whole take enlightened positions on current fisheries issues. To this end we need suggestions from the membership regarding what issues are the most pressing to Texas fisheries professionals. The issues session is being organized by Dr. Nick Parker (chairman for the issues committee 806-742-2851) and Mike Reed (chairman for the exotic species committee 512-547-9712). Contact either of these individuals with ideas and suggestions. Our meetings seem to get better every year and I hope this year's meeting will continue the trend. If you have any comments or suggestions that can help the 1995 meeting better serve the needs of our membership, please contact me at 409-822-5067.



## NEW CATEGORY FOR OUTSTANDING FISHERIES WORKER

by John Moczygamba

Last year during nomination time, someone pointed out that there was a group of fisheries workers who did a whole lot of work but were not able to be recognized for their effort. After discussion among the Executive Committee, we announce Technical Support as a new category for Fisheries Worker of the Year. The new member on the Awards Committee for that area will be Floyd Teat (Texas Parks & Wildlife Department, 8680 LaVillage Ave. #4, Waco, Texas 76712, 817-666-5190). Here are the criteria, as suggested by Floyd, for that award:

-Development of new or improved design and/or construction of equipment used in field sampling, culture operations, lab analysis, etc.

-Participation in outstanding or unique management, research, or culture activities, which contributed significantly to the fisheries profession.

-Participation in programs to educate other fisheries workers or the public (fishing clinics, seminars, articles, brochures, etc.)

-Accomplishments resulting in new or improved techniques or greater efficiency ( data compilation and analysis, improved lab techniques, more productive fish culture techniques, improved fish sampling techniques, etc.).

Gracious volunteers for the rest of the Awards Committee for 1995 include:

**Administration:** Michael Ray, Inland Fisheries Division, Texas Parks & Wildlife Department, 4200 Smith School Road, Austin, Texas 78744, 512-389-4649.

**Culture:** Robert Vega, Texas Parks & Wildlife Department, 469 Paloma, Corpus Christi, Texas 78412, 512-939-7784.

**Education:** Dr. Kirk Winemiller Department of Wildlife & Fisheries Science, Texas A&M University, 210 Nagle Hall, College Station, Texas 77843, 409-862-4020.

**Management:** Jeff Henson, Texas Parks & Wildlife Department, 1004 East 26th Street, Bryan, Texas 77803, 409-822-5067.

**Research:** Dr. Ray Drenner, Department of Zoology, Texas Christian University, Fort Worth, Texas 76129, 817-921-7165.

Look for nomination instructions in the summer issue of the newsletter. Although awards may not be given in every category, there are outstanding fisheries workers in all of the areas. If you know one, send a nomination for this year's award.

## EXCOM MEETING MINUTES

by Kathy Ramos

An EXCOM meeting was held on January 17, 1995 in San Marcos. Members in attendance were Pat Hutson, Loraine Fries, Steve Magnelia, Mark Webb, Mark Stacell, Richard Ott, Mike Reed, Malcolm Johnson, Ray Whitney, John Moczygamba, Ronnie Pitman, Bobby Whiteside and Kathy Ramos. Pat called for the Treasurer's report. Kathy reported a checking account balance of \$4,504.28 and priced portfolio of \$21,555.09. Total chapter assets are \$26,059.37. Reportable dividends for the year were \$1,087.40. Major expenses have been for postage and envelopes.

Mark Webb reported that the annual meeting will be held September 10-12, 1995 at the College Station Hilton. The hotel will provide two complimentary double occupancy student rooms for Sunday and Monday nights. Highlights of the meeting will include a Student Employment Workshop and Job Fair as well as tours of the Texas A&M Aquatic Research Center and Fish & Wildlife Museum. Steve Magnelia will be in charge of the fishing tournament. It is possible that the Texas A&M student chapter will cater the social.

Loraine Fries, Joe Fries, Ronnie Pitman, Beverly Villarreal and Pat Hutson worked together to complete an application for AFS Southern Division Chapter of the Year. Loraine reported that there has been little feedback on having a continuing education workshop. So far there have been requests for GIS training. She will talk with possible instructors and determine the amount of time required, then poll the EXCOM regarding timing of the course.

The Awards Committee is working on defining the criteria for a Technical Support Award in addition to established categories. John Moczygamba has made assignments for contact people for each of the categories, they are as follows: Administration - Mike Ray; Culture - Robert Vega; Education - Kirk Winemiller; Management - Jeff Henson; Research - Ray Denner and Technical Support - Floyd Teat.

Ronnie Pitman reports that chapter membership continues to grow. There are 194 members who have already paid for 1995. This number will increase as we receive memberships that have been paid through the parent society. She will be working with Steve to make sure that all paid members receive their newsletter on schedule.

Bobby Whiteside indicated that the list of potential nominees for President-Elect and Secretary/Treasurer is growing.

Malcolm Johnson has sent the current Stocking Recommendations document to reviewers at Auburn

University for outside comments. Once it has been returned he will contact the Pond Management Committee members for their input.

The Publicity/Exhibits Committee sent out Thank You letters to last year's donors. Mark Stacell is planning to order more of the camouflage TCAFS caps. There were a lot of requests for these after the annual meeting. Both Mark and Richard Ott indicated that they will begin to contact potential exhibitors and donors for the 1995 meeting before March. If members feel that they know of someone who might be interested they should contact either Rick or Mark. The committee will place more emphasis on the trade show and membership numbers when speaking to exhibitors.

Mike Reed is working with Nick Parker on elaborating on and redefining the Chapter's 1991 position statement on Grass Carp. The EXCOM agreed that there should be an elaboration of the current status, problems, needs and long-term ecological effects. Future topics for this committee are black carp, aquarium fishes and exotic shrimp introductions.

Ray Whitney discussed the Guide to Urban Fishing Programs. The committee feels that it should be redone and retitled "Guide to Developing Community Fishing Programs." They will be working to shorten and clarify the information contained within the current document in order to make it more useful.

The Chapter is committed to co-hosting the AFS Southern Division meeting with the Oklahoma Chapter. The proposed meeting site is San Antonio in February 1997. According to Phil Durocher, the Texas Parks & Wildlife Department will lend its support to this endeavor. The Chapter will also be involved in a student outreach project to be held at the Texas Aquaculture Association meeting in February. Students will have a hands-on field trip to the A. E. Wood State Fish Hatchery in San Marcos. The next EXCOM meeting will be at 1:00 P.M. on April 18 in San Marcos.

### NOMINATIONS PLEASE

*by Bobby Whiteside*

Nominations for President Elect and Secretary/Treasurer for the Texas Chapter AFS must be in by **May 15, 1995**. The nominations should be accompanied by a **short resume** that gives the candidates educational background, work background, and committees and offices held at all levels of the American Fisheries Society. One should also provide a short paragraph of information about this candidate that makes him or her suited for the position. The President Elect position is a one year term and the person becomes President the following year. The Secretary/

Treasurer position is a two year term. The Nomination Committee will select two or three candidates from the suggested candidates for each of these positions and short resumes of each will be published in the summer issue of Texas Chapter AFS Newsletter. Nomination should be sent to: **Dr. Bobby Whiteside, Chair Nomination Committee, Aquatic Station, SWTSU, San Marcos, TX 78666**



### INFERENCES AND OTHER MONSTERS

*by Joe N. Fries*

Sometimes fisheries workers, armed with very little objective information, must make their best guess about what's going on in a body of water and then make practical management recommendations, complete with warranty. For example, based on estimates of primary productivity in a "typical" pond of a given size, the numbers, types, and sizes of fishes that can be supported in that body of water can be determined, approximately, kinda. We can even infer, from whatever data we can harvest, something about the quantity and quality of top predators in a given system. The reasoning usually involves trophic considerations with fishes and other known lifeforms. However, a biologist may stray a bit from the norm from time to time.

In a September 1972 issue of *Limnology and Oceanography*, pages 796-798, two authors comment on possible numbers and sizes of large (> 200 lb) aquatic predators in a well-known body of freshwater. The surface area is about 14,000 acres and the system was stated as being able to produce a fish yield of about 0.5 lbs/acre/year. Using the commonly used 1-to-5 trophic relationship seen in many aquatic systems, a 10% predator growth efficiency, and a variety of other life history guesses, the authors determined that about ten to twenty 3,300-lb individuals might make up the breeding population of these top predators. Talk about trophy fishing! There are, however, a few tiny problems with landing one of these prizes: they are "rarely seen and never caught;" they are in a faraway place; they may be endangered; and, although the authors seem to be serious, the creatures may not really exist. The body of water is Loch Ness - the animal is a monster.

## GRASS CARP STOCKING

by Mike Reed

In 1991 the Texas Parks and Wildlife Department (TPWD) developed a policy which allowed triploid grass carp to be legally stocked in the private waters of Texas under a permit system administered by the Department. Prior to legalization of grass carp, the Texas Chapter of the American Fisheries Society issued a statement to the TPWD Executive Director and Commission outlining concerns over legalization of grass carp.

The Department issued a proclamation (57.126) which outlined the terms for issuance of a grass carp permit. The regulation allows a permit to be issued if it is consistent with Department fisheries and wildlife management activities and the Parks and Wildlife Commission's Environmental Policy, does not conflict with specific management objectives of the Department, will not detrimentally affect threatened or endangered species populations, and will not detrimentally affect coastal wetland and estuarine ecosystems. In 1992 the proclamation was amended to grant the Department authority to issue permits for public waters.

The Department biologists responsible for determining stocking site suitability and permit issuance have done very well in not only assisting landowners in managing aquatic plants using triploid grass carp but also in denying permits in areas where stocking criteria would not be met. In doing so they have helped maintain the integrity of aquatic habitat throughout Texas' public inland and coastal areas. However, grass carp of various sizes continue to be collected by anglers and fisheries biologists from Texas' public waters. Fish have been taken from reservoirs, rivers and coastal areas. In most of these collections, no legal grass carp stockings had taken place either directly at the site or within the drainage area. Studies conducted by Texas A&M Department of Fisheries and Texas Parks and Wildlife Department biologists have found alarming numbers of diploid and triploid grass carp in the Trinity river drainage and upper Galveston Bay complex. The continued occurrence of large grass carp in public waters illustrates the fish's strong propensity to move from waters in which it was stocked.

Although the TPWD has regulations governing the stocking of grass carp and has provided information to the public concerning the fish's propensity to escape from sites in which it was stocked, there is growing desire within the public sector to stock grass carp in large reservoirs. Private landowner organizations and businesses which have property adjacent to or vested interest in public reservoirs are strongly urging the

TPWD to alter its grass carp stocking policy to allow large stockings of fish in open reservoir systems. The Guadalupe River chain of lakes in central Texas is one highly publicized situation where the invasion of hydrilla has resulted in numerous landowner associations, local businesses and the controlling authority making a request for a permit to stock grass carp into a public riverine reservoir system which links directly to extensive coastal wetlands and estuaries.

The Exotic Species committee of the TCAFS believes the issue of stocking grass carp in public waters is a matter of serious concern to all aquatic scientists and users of public waters of Texas. The committee believes that an issue statement giving the position of the TCAFS membership is in order and may assist the TPWD in its negotiation with those wishing to stock grass carp in public water. The committee has reviewed the 1991 grass carp issue statement and does not believe it to be current and suitable for reissuance. It is printed here for review by the membership. Comment on the 1991 issue statement and/or the verbiage to be included in any future statement should be directed by 15 April 1995 to: Mike Reed, P.O. Box 116, Mathis, TX 78368.

### 1991 TCAFS POSITION STATEMENT ON GRASS CARP

The Texas Chapter of the American Fisheries Society retains its concern over the impact of grass carp (*Ctenopharyngodon idella*) in all Texas surface waters. We recognize that extensive aquatic vegetation growth causes problems with many uses of surface water. Alternatives to biological control are expensive, labor intensive, impractical, or not tested, leaving the primary control system biological, chiefly via grass carp.

The Texas Chapter is made up of scientists informed about biological effects of actions such as the release of exotics.

Our concerns include the following:

- 1) We support the current regulations against use of diploids in Texas and understand that experiments are now being done on triploids.
- 2) If grass carp are to be used, triploids are the least likely to result in reproducing populations. Any triploids used must be certified and proof of certification must be on-hand through final destination and then filed with the Texas Parks and Wildlife Dept.
- 3) The impacts will be in fresh waters and estuaries (thus secondly on marine ecosystems).

4) Our concerns include areas with endangered species, coastal estuaries, and access to other water bodies.

5) We suggest that any area being considered for release incorporate prior use of other vegetation controls so that the number of triploid grass carp be minimal.

6) We support the use of marks to ascertain responsibility for distribution and escapement.

7) A cautious approach is desirable.

## **PERSPECTIVES on GAINING EMPLOYMENT in the FISHERIES FIELD**

*by Beverly Villarreal*

This first segment gives advice on gaining employment in the fisheries field from a compilation of viewpoints collected from university and agency personnel who are in positions of employing job candidates or acting as liaisons between employers and students. I would like to thank the participants for their time and careful consideration. Their responses were very insightful should be invaluable to students embarking on careers. Students: this is your column so let me know what topics you would like to see discussed.

### **Contributors:**

**David McKee**, Associate Professor of Biology and Coordinator of Master of Science in Mariculture , Texas A&M University - Corpus Christi

**Bobby Whiteside**, Professor and Aquatic Station Director, Southwest Texas State University, San Marcos, TX

**Kirk Winemiller**, Associate Professor, Fisheries and Wildlife Department, Texas A&M University, College Station

**Mike Gonzales**, Chief, Environmental Services, San Antonio River Authority

**Larry McKinney**, Director, Resource Protection Division, TPWD

**Mike Ray**, Hatcheries Director, Inland Fisheries Division, TPWD

**Larry McEachron**, Science Director, Coastal Fisheries Division, TPWD

**Jack Tatum**, Development Coordinator, Sabine River Authority, Orange, TX

**Raymond C. Mathews**, Hydrologist, Environment Section, Water Resources Planning Division, Texas Water Development Board, Austin, TX

**1. What kind of education/experience is most helpful for gaining employment?**

Internships, hands-on labs, field trips. Seeing as

many different facilities/systems as possible and working with as many different species as possible certainly makes one more "marketable" or "saleable" upon graduation--David McKee

Sciences--Biology, Chemistry, Math--students should stay away from any classes that are labeled for non-majors. The more labs a student takes with course work, the more employable he/she will become. Computer skills (IBM PC) are also a big asset.--Mike Gonzales

I think that the fastest growing fields where individuals with a fisheries background will have employment opportunities, and one that is often overlooked until it is, "I'm graduating next month and I don't have a job" panic time, are in environmental regulation and assessment programs of state and federal agencies, and in private industry dealing with the same issues. A fisheries biologist that wants to keep all their options open should include course work on environmental laws, regulations, and issues. One should also look for intern, summer job, part-time work, etc. opportunities with environmental agencies and companies to get a foot in the door.--Larry McKinney

B.S. or M.S. in a fishery-related degree. Any actual field experience performing the tasks of the particular job for which the person has applied. Paid or volunteer experience is important.--Mike Ray

I feel that a broad-based biology undergraduate background and a broad-based aquatic ecology background for a MS degree gives the student the chance for many different jobs in the aquatic-related fields of employment. Because of the competitiveness for the positions that become available, it is important for the students to do paid or non-paid internships or volunteer work with state or federal agencies.--Bobby Whiteside

Education: statistical skills, technical writing skills, knowledge of population dynamics theory, and computer modeling skills--SAS, Harvard Graphics, statistical programs, economics and sociology. Experience: Hands-on experience in the fishery field.--Larry McEachron

Participation in seminars and extracurricular activities that involve students in fisheries are most beneficial. If the latter involves a government agency or non-government agency, so much the better.--Kirk Winemiller

Those that provide experience in design and application of monitoring programs, as well as a strong background in statistics, toxicology and identification of aquatic life, both plant and animal. It is also essential to have a strong chemistry background.--Jack Tatum

We only consider those with graduate degrees and field experience. It helps to be versatile in two or more

specialized areas, e.g., ecology, hydrology, mathematical modeling.--Raymond Mathews

**2. Is there anything students can do to increase the likelihood their application gets a favorable review?**

Call and arrange a visit to the campus/facility and have a one-on-one visit/interview. Follow up on that visit and be very prompt in getting all materials on file. Be "persistent" but not "pushy."--David McKee

Don't leave any blank spaces in the application, provide as much insight as possible. Make sure the application is well written and legible. Attach a well-written one page resume. List all skills, talents, hobbies, certifications, training, etc. (i.e., fishing, scuba diving, auto mechanics, first aid, CPR).--Mike Gonzales

Course work and experience in environmental regulations, laws, and issues is one of the key "screening mechanisms" by which applications are typically sorted. In addition, broad ecological experience and course work is a plus. Environmentally related fisheries work tends to cover a broad range from classic taxonomic skills to familiarity with contaminant issues.-Larry McKinney

Fill out the application completely and submit a resume. Have an upbeat mood in this information. Demonstrate a good work ethic and excellent work record. Discuss previous jobs thoroughly but briefly. Show initiatives, achievements, significance of experience to the job being sought. If you have specific skills, list them.--Mike Ray

Get some hands-on experience even if it is by doing volunteer work. It also helps if the student gives presentations at scientific meetings; this gives them some exposure to potential employers and gives them confidence if they get interviewed.--Bobby Whiteside

Be neat and accurate. No misspellings. Give details about job experience that directly relates to the job announcement.--Larry McEachron

Publish scientific papers. Write your own grant proposals (the amount of funding is not as important as a record of grantsmanship).--Kirk Winemiller

Particular care needs to be taken with attire as well as attitude when interviewing; also familiarity with the agency helps greatly. Always include a copy of your most current transcript.--Jack Tatum

Student experience on grants funded by hiring agencies is important, but only if they make a good impression. We have hired interns for the last few years, and that is a good way to become recognized and develop skills that are important to employers.--Raymond Mathews

**3. What direction do you see fisheries career opportunities heading?**

More saltwater systems stocked with many heretofore unstudied species (Atlantic Croaker, Black Drum, Sheepshead, etc.). Fisheries more linked with habitat, environmental considerations. Gulf species will be considered for fisheries and aquaculture (dolphin, ling, snappers, mackerals). Offshore cage/pen aquaculture (beneath oil platforms).--David McKee

I feel that fishery and hatchery work is limited. The future opportunities will be in biological monitoring using fish as indicators of pollution/water quality.-Mike Gonzales

It is probably no surprise that I think there will be an increasing emphasis on environmental issues related to fisheries. I believe more and more actions outside what is generally perceived as classic management of fisheries will ultimately determine the fate of those resources. Water quantity and water quality issues directly affect aquatic habitat and, in fact, define and limit that habitat. We can now move the content of whole river systems from one basin to another. We can contaminate, for the foreseeable future, whole estuaries through negligent action. This has happened in this country and around the world. The issues with which fisheries biologists are now consumed in the western states is a good example of this and there are numerous other examples that show such a trend.--Larry McKinney

Environmental protection, mariculture, genetics, urban fisheries management/education.--Mike Ray

I think we will see fisheries biologists that need to know a lot about: 1) public relations, 2) economics, and 3) aquatic ecology. They must be able to communicate with other state and federal agencies as well as the private sector and be able to sell their proposals for fisheries management to these groups.--Bobby Whiteside

Fisheries is becoming more involved with advanced mathematical modeling techniques. Use and knowledge of stock assessment methodology will be critical in the future. We need people who are comfortable working with advanced computer assessment programs. Socio-economic information will become more important. Therefore, opportunities should open up more in the future, both in the sociological and economic portion of the field of fisheries. We need better writers.--Larry McEachron

Environmental issues, biodiversity, bioremediation will become more prominent. Traditional commodity-based view of resource will wane but not disappear. The latter will remain important in selected regions (e.g., Gulf Coast Conservation Association, Trout Unlimited, etc.)--Kirk Winemiller

I feel there will be less need for a strictly fisheries

discipline, and more of a broad-based background, both chemical and biological.--Jack Tatum

More specialized information is being required now about environmental impacts from water resource development, especially instream flow needs and inflows to estuaries. Biological backgrounds are not sufficient alone to work in these specialty areas. Considerable knowledge about hydrology is required.--Raymond Mathews

--Raymond Mathews

#### 4. Any other comments?

Students should not try to specialize their education in undergraduate school. A degree in general biology or general chemistry with a diverse transcript is usually easier to market to employers than a specialized degree (i.e., zoology, botany, fisheries). Students should wait until graduate school to specialize. It is also advisable that they research the job market trends before they specialize.--Mike Gonzales

Get some experience in the field; be upbeat. Submitted information must stand out from the others. Put effort into the application and resume.--Mike Ray

I think the days for students that are specifically trained for just being a fisheries biologist are limited. A narrow background in just fisheries limits the prospects for employment in this changing society.--Bobby Whiteside

Students should be versatile. Do not get locked into a very narrow specialty field. Get as many different skills as possible to insure being able to qualify for more than one type of job. Be patient--work hard and learn everything you can. Opportunity will eventually open up for those willing to wait. Be open-minded. Politics is the name of the game in the fisheries field. Learn how to deal with politics and the biology and knowledge you have in fisheries management will be upheld. You have to be able to present information that is logical and has a basis in fact. Work within the system. Writing and publishing are key components to a successful biologist. Too often, students do not take technical writing courses. At least 3 journalism courses in college should be taken. One last item about writing: to be an accomplished writer takes practice. One of the best ways to become a better writer is to read. The more a person reads, the more exposed they become to different styles of writing. This is very important. Don't just read scientific literature, read novels, or any type of subject the person likes.--Larry McEachron

I stress again that the students that get the jobs will be those that establish solid "track records" while in school. This takes place largely outside of the classroom (but draws upon classroom knowledge).--Kirk Winemiller

As stated earlier, prospective employees need a

broad-based background in all aspects of aquatic biology, chemistry and toxicology, as well as knowledge of environmental rules and regulations to make them competitive in the environmental field.--Jack Tatum

I also suggest students present papers at AFS chapter meetings, the Texas Academy of Science annual meeting, etc. and attend specialty meetings such as the Texas Lakes Management Society meetings to make contacts and determine what specialties are most interesting to them.--Raymond Mathews

## TEXAS' WINTERING CORMORANTS

by Steve Magnolia

Orange rays of faint sunlight broke the horizon as the shapeless dark objects rose into the dimly lit sky. Fusing together they moved as one across the acres of twisted timber. Interpretation, whether real or imagined has a funny way of shaping reality. Geese? Swarms of killer bees? "Aliens doing what?" "Tractor beams and anatomical experiments?" "You saw it where?" "Oh, last weeks X-Files." "No, I don't believe in that supernatural stuff." "You're not joking....Now wait a minute, aren't you the same guy that swears by pyramid power and has been known to set out tape recorders in cemeteries." "Yea, yea you usually catch more fish than me, but you haven't been the same since you got caught downwind of that fertilizer plant fire." "They won't take me alive!" Frantically rummaging around the bottom of the boat for makeshift weapons we kept our eyes upon the impending doom. The telltale S-shaped necks and black slender bodies of the individuals making up the formations became apparent. "Ha, ha just a big bunch of *alien* cormorants."

Roosting in large numbers in flooded timber, wings opened to dry in the sun, making strange gut wrenching sounds, some anglers think of them as a curse upon our fisheries. A diet consisting solely of fish, and congregating in large numbers on many Texas reservoirs anglers have raised the question about the impact they may have on our gamefish populations. This bird has gained a nasty reputation from anglers not only in Texas but from across the country. Does this fish eating predator deserve the criticism or is it a case of being misunderstood. The answer isn't as straight forward as many think.

Double-crested cormorants, commonly called water turkeys, are a common sight in Texas from November through March when they move into the state from their summer homes in Canada and the Northern United



States. If you think you've noticed an increase in their numbers lately you're right. Since the 70's when the agricultural pesticide DDT and other toxic contaminants were banned cormorant populations have made a remarkable comeback. These birds also seem to be remarkably adept at finding new locations for breeding, roosting and fulfilling their dietary needs. Population increases ranging from 15 to 63 percent have been reported from across the country. The U.S. Fish and Wildlife Service estimates there are now approximately 750,000 cormorants living in North America.

As cormorant populations have grown conflicts between anglers and birds have increased. Knowing the birds eat fish many anglers assume they are having an impact on gamefish populations in large reservoirs. Is this the case? In a study published in 1988 the diets of 420 cormorants were investigated on eight public reservoirs in Texas. These reservoirs included Lake Fork, Purtil Creek, Palestine, Whitney, Sam Rayburn, Conroe, Braunig and Falcon. The study found that while cormorants will eat gamefish diets on these reservoirs consisted primarily of shad species, common carp, blue tilapia, freshwater drum, minnows and other non-sport fish species. These results are in agreement with other cormorant diet investigations from South Dakota, Wisconsin and Canada. There has never been any indication that the removal of these prey species had a direct affect on a reservoirs gamefish population. While few gamefish are taken the authors pointed out that cormorants appeared to eat the fish species that were the most abundant. For example, at Falcon and Braunig Reservoirs where blue tilapia are high in abundance they made up the majority of the diet. If cormorants eat the fish that are the most abundant what does this mean for aquaculture ponds ?

Fish raised for profit by private companies and for stocking by state and federal hatcheries are normally raised under high density situations. A fish farmer wants to get the highest production out of his water. In that situation the fish in the greatest abundance is the fish species that is being cultured for profit. When cormorants come to visit these small, shallow, often cover free ponds what do you suppose gets eaten? Results from studies done at aquaculture facilities have shown cormorants can cause serious damage under certain circumstances. For instance a study focusing on the impact of cormorants on the Mississippi delta regions catfish industry concluded that cormorants were removing approximately 4% of their catfish fingerlings at a cost of \$2 million dollars annually. An Arkansas study found a seasonal shift in cormorant diets. During the fall cormorants congregated in areas where shad were abundant. The authors speculated cormorants took advantage of lethargic shad behavior caused by falling

water temperatures. In the spring cormorant diets shifted exclusively to aquaculture fish as these fish probably represented the best concentration of fish available to the birds. Some states have reported predation by cormorants on recently stocked fingerlings. In either case depredation of hatchery raised fish in ponds or at stocking locations seems to be a problem.

Cormorants are a migratory bird family protected by a 1972 amendment to the Migratory Bird and Game Mammal Treaty with Mexico. Since they were never thought of as a game bird cormorants are listed under a non-game category. Until this treaty can be renegotiated they cannot be legally hunted without a federal permit. According to the U.S. Fish and Wildlife Service the chances of changing this treaty are almost non-existent. Renegotiation could potentially open up a whole new range of issues with the Mexican government. The treaty itself, or parts of the treaty that were never meant to be changed could be put in jeopardy. Permits are currently granted to fish farmers for the limited take of cormorants and other fish-eating birds which are documented to be causing detrimental economic impacts. However, many fish farmers are unable to fill their permits because they say the birds are difficult to safely shoot. As it stands now experts seem to be unsure about the best course of action; however, some effective non-lethal means of discouraging cormorant predation in aquaculture ponds and at stocking locations have been developed. At the A.E. Wood State Fish Hatchery in San Marcos nets have been suspended above ponds to keep the birds from eating valuable brood fish. Some other methods which may have some merit for deterring cormorants include stringing monofilament line across roosting areas to deter birds and using reflective mylar to frighten birds away from roosting areas. Stocking fish in several different locations ensures that predator naive hatchery fish won't be concentrated in any one area, reducing the likelihood that cormorants or other predators will hone in on them. Since a hunting season is unlikely further development of effective non-lethal means for deterring birds from eating commercially valuable species is needed.

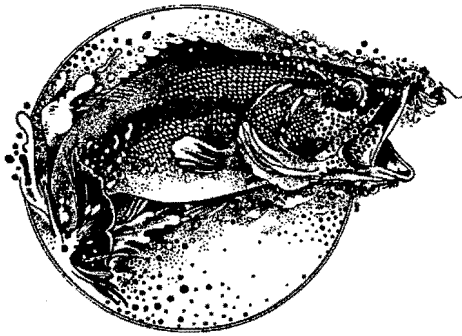
Are cormorants impacting gamefish species on large Texas reservoirs? Certainly not by directly eating gamefish in the reservoir itself. Some argue that the reduction in forage due to cormorant predation may be having a negative impact on gamefish populations. The complexity of predator/prey interactions in reservoir environments is mind boggling. Water level changes, habitat alterations, water quality changes, natural forage die offs, impacts from other predator species etc. could potentially all play a role in the rise and fall of forage





populations. The task of separating reductions in forage due to cormorants from other things which could be occurring simultaneously would be difficult. On the other hand effects on aquaculture ponds seem to be substantial and well documented in the scientific literature.

Predators are essential components of any large reservoir system. Cormorants, striped bass, gar, sunfish eating bass eggs, bass eating sunfish, bass eating bass; no remorse, no internal conflict; the predatory instinct pushing towards one goal, survival. If cormorants weren't here what about other aquatic predators? Is their impact any less important, or are cormorants just more visible? The answers are not as simple as many think. "Hey! You can put the can of insect/alien fogger down, they're just birds...And stop talking about that occult stuff, it makes me nervous!" "I'm telling you, I did hear voices on those cemetery tapes....."



### **HONEY HOLE USING TCAFS TOURNAMENT WEIGH-IN KIT**

The Central Texas region of HONEY HOLE bass tournaments is using the TCAFS tournament weigh-in kit at all of its 1995 tournaments. Reservoirs where tournaments will be held include Buchanan, Belton, Travis, LBJ and Limestone. This kit is a complete weigh-in system designed to minimize handling and stress of tournament caught bass. It also educates anglers on proper weigh-in and handling techniques. The money for building this kit was donated to the Texas Parks and Wildlife Department Inland Fisheries Branch by TCAFS in 1993. The TCAFS logo is found on the major components of the kit. Additional kits are available for loan from the Texas Parks and Wildlife Departments Abilene and San Marcos Inland Fisheries Management offices.



### **1995 RENEWAL NOTICE OR "WHAT THE HECK DO THESE COLORED DOTS MEAN"**

Hey you! Yes you! It's time to renew your dues if you haven't done so already. Check your newsletter address label to see if it has a red dot or a green dot. A green dot means all systems go, you're paid up and we won't have to send those guys in the black suits after you. Those labels with a red dot mean your 1995 dues have not been paid. I got a message for you from Bugsy, big ugly guys and fifty lashes with a dead carp! Just fill out a membership renewal form on the next page, or you can pay with your annual AFS dues. Either way, we know where you live.

### **SERVE ON A TCAFS COMMITTEE**

Would like to be on the leading edge of fisheries issues in Texas and make some new friends along the way? Accomplish that and more by signing up to serve on a TCAFS committee. When you renew your membership just check the box next to the committee you're interested in serving on, or contact the committee chair directly. Committee chairs and their phone numbers are; Newsletter-Steve Magnelia (512-353-0072), Endowments-Dick Luebke (210-866-3356), Awards-John Moczygemba (903-786-2389), Issues-Nick Parker (806-742-2851), Editorial-Bob Edwards (210-381-3537), Membership-Ronnie Pitman (210-866-3356), Pond Management-Malcolm Johnson (512-396-1231), Nominating-Bobby Whiteside (512-353-0072), Publicity/Exhibits-Richard Ott and Mark Stacell (903-566-2161 512-353-0572), Exotic Species-Mike Reed (512-547-7225), Stocks-at-Risk-Gary Garrett (210-866-3356), Procedures-Joan Holt (512-749-6716), Student Outreach-Beverly Villarreal (512-353-0572), Urban Fishing-(915-692-0921).



**MEMBERSHIP APPLICATION AND RENEWAL  
TEXAS CHAPTER OF THE AMERICAN FISHERIES SOCIETY**

for the 1994 calendar year       for the 1995 calendar year

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Work phone \_\_\_\_\_ Home phone \_\_\_\_\_

FAX \_\_\_\_\_

Primary Field of Interest \_\_\_\_\_

Affiliation \_\_\_\_\_

Check the two that apply:

Regular Membership (\$8/yr)  
 Student Membership (\$5/yr)  
(full-time students only)

AFS Member  
 Non-AFS Member

Send dues to:

Kathy T. Ramos  
11045 Spur 164  
Tyler, Texas 75709

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

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Awards           | <input type="checkbox"/> Editorial                   | <input type="checkbox"/> Endowments    |
| <input type="checkbox"/> Issues           | <input type="checkbox"/> Membership                  | <input type="checkbox"/> Nominating    |
| <input type="checkbox"/> Pond Management  | <input type="checkbox"/> Publicity/Exhibits          | <input type="checkbox"/> Newsletter    |
| <input type="checkbox"/> Exotic Species   | <input type="checkbox"/> Procedures Manual           | <input type="checkbox"/> Urban Fishing |
| <input type="checkbox"/> Student Outreach | <input type="checkbox"/> Fisheries Workers Directory |  |

**EXECUTIVE COMMITTEE**

PRESIDENT..... Pat L. Hutson  
PRESIDENT-ELECT..... Mark Webb  
PAST-PRESIDENT..... Loraine T. Fries  
SECRETARY-TREASURER..... Kathy Ramos

**COMMITTEE CHAIRPERSONS**

AWARDS..... John Moczygemba  
EDITORIAL..... Bob Edwards  
ENDOWMENTS..... Dick Luebke  
ISSUES..... Nick Parker  
MEMBERSHIP..... Ronnie Pitman  
NOMINATING..... Bobby Whiteside  
POND MANAGEMENT..... Malcolm Johnson  
PUBLICITY/EXHIBITS..... Mark Stacell/Richard Ott

**AD-HOC COMMITTEES**

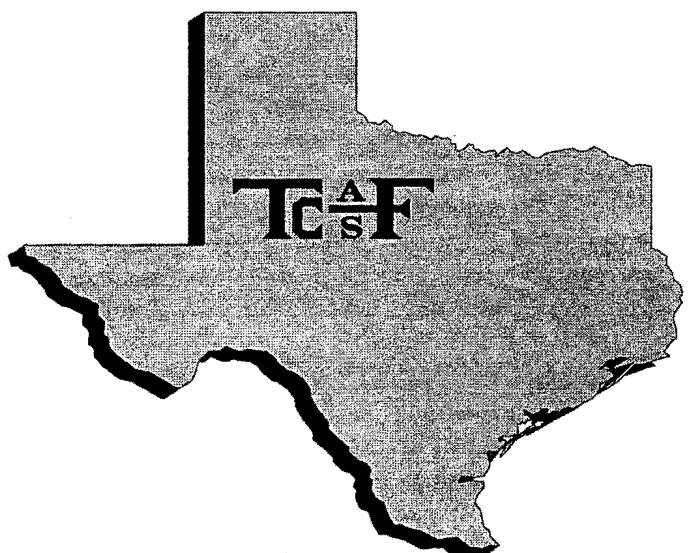
EXOTIC SPECIES..... Mike Reed  
FISHERIES WORKERS DIRECTORY..... Lance Robinson  
PROCEDURES MANUAL..... Joan Holt  
URBAN FISHING..... Ray Whitney  
STUDENT OUTREACH..... Beverly Villarreal  
STOCKS-AT-RISK..... Gary Garrett

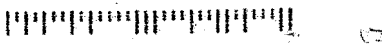
**NEWSLETTER EDITOR**

Steve Magnelia  
P.O. Box 947  
San Marcos, Texas 78667-0947  
512-353-0072

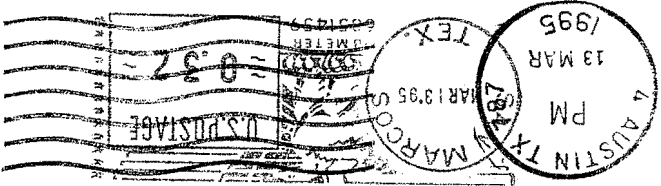
**Newsletter submission deadlines:**

May 15, 1995..... June Issue  
July 15, 1995..... August Issue  
August 1, 1995..... Special Meeting Issue  
Submissions are encouraged. Both a hardcopy and a MS-DOS compatible diskette should be submitted. Disks will be returned.

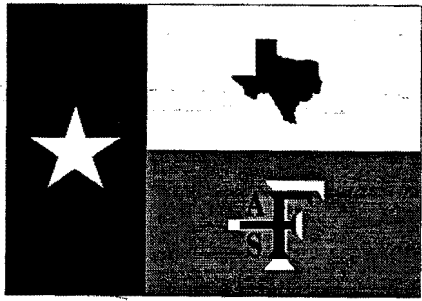




025548 NM  
 ROGER MCCABE  
 1601 EAST CREST DRIVE  
 WACO, TX 76703



NEWSLETTER EDITOR  
 P.O. BOX 947  
 SAN MARCOS, TEXAS  
 78667



**THE NEWSLETTER OF**  
**THE TEXAS CHAPTER OF**  
**THE AMERICAN FISHERIES SOCIETY**

**RECEIVED**  
 MAR 14 1995  
 PARKS AND WILDLIFE DEPARTMENT  
 WACO, TEXAS