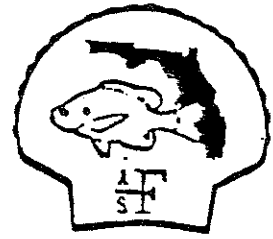


The Shell-cracker

FLORIDA CHAPTER OF THE AMERICAN FISHERIES SOCIETY



VOLUME 9 (2)

DECEMBER 1989

- - A N N O U N C I N G - -

10TH ANNUAL MEETING

FLORIDA CHAPTER - AMERICAN FISHERIES SOCIETY

WITHLACOOCHEE FORESTRY TRAINING CENTER
BROOKSVILLE, FLORIDA
26 - 28 FEBRUARY, 1990

THE TENTH ANNUAL MEETING OF THE FLORIDA CHAPTER OF THE A.F.S. WILL BE HELD AT THE WITHLACOOCHEE FORESTRY TRAINING CENTER NEAR BROOKSVILLE, FLORIDA, FEBRUARY 26-28, 1990. THE MAIN TOPIC OF OUR 1990 MEETING WILL BE THE INCREASING MERCURY AND OTHER POLLUTANT CONTAMINATION PROBLEMS WE ARE FACING WITHIN OUR FISHERY RESOURCES. DURING THE PAST YEAR, HIGH LEVELS OF MERCURY HAVE BEEN DETECTED WITHIN SEVERAL FISH POPULATIONS THROUGHOUT THE STATE AND A CONSIDERABLE AMOUNT OF RESEARCH IS NOW BEING CONDUCTED TO ADDRESS THIS PROBLEM. THIS SPECIAL SESSION WILL ADDRESS THE NATURE AND EXTENT OF THE PROBLEM WITHIN OUR FRESH AND SALTWATER AREAS, HEALTH IMPLICATIONS, POTENTIAL SOURCES AND CURRENT RESEARCH, FUTURE CONCERNS, AND NEEDED MANAGEMENT ACTIONS.

FINAL CALL FOR PAPERS

IN ADDITION TO THE SPECIAL TOPIC SYMPOSIUM, A SESSION WILL BE PROVIDED FOR CONTRIBUTED PAPERS. PRESENTATIONS CONCERNING CURRENT RESEARCH, ONGOING PROJECTS, OR INTERESTING FISHERY ISSUES YOU ARE DEALING WITH ARE WELCOME. HELP MAKE OUR CHAPTER MEETINGS INTERESTING AND INFORMATIVE BY CONTRIBUTING A PAPER. THE CONTRIBUTED PAPER SESSION WILL INCLUDE \$25.00 CASH AWARDS AND CERTIFICATES FOR THE BEST PROFESSIONAL AND STUDENT PAPERS PRESENTED. SPEAKERS WILL BE ALLOTTED 12 MINUTES FOR THEIR PRESENTATIONS AND 3 MINUTES FOR QUESTIONS.

SUBMIT ABSTRACTS FOR CONTRIBUTED PAPERS (THERE MAY STILL BE SOME ROOM IF YOU DID NOT MAKE THE PREVIOUSLY ANNOUNCED JAN. 1 DEADLINE) TO:

JIM TILMANT, NPS SOUTH FLORIDA RESEARCH CENTER, EVERGLADES NATIONAL PARK, P.O. BOX 279. HOMESTEAD, FL. 33030.

RAFFLE

We are planning to hold a raffle again this year to help with our Chapter finances. We are looking for prize contributions if you know of potential sources (No Mudbugs Please!). Plan to participate.

MEALS / LODGING

Meals and dormitory-style lodging will be offered at the training center. The total meal and lodging package costs \$54.00.

Partial packages are available (see registration form).

NOTE: Due to dorm repairs, A LIMITED NUMBER OF LODGING ACCOMMODATIONS WILL BE AVAILABLE. These will be assigned on a first to register basis.

Alternative accommodations within the Brooksville area include:

Brooksville:

Oaks Motel (904-796-4807)	\$26.00	Single
	29.00	Double
Sunrise Motel (904-796-8634)	\$24.00	Single
	28.00	Double

I75 & Hwy. 50:

Holiday Inn (904-796-9481)	\$41.00	Single
	46.00	Double
Days Inn (904-796-9486)	\$35.00	Single
	35.00	Double

1990 ANNUAL MEETING REGISTRATION

Please complete and submit this form with a deposit to reserve a space (NOTE: Lodging is limited). Please check the appropriate lines on this form that correspond to the meals and lodging that you would like reserved.

NAME: _____

ADDRESS: _____

_____ PHONE _____

AFFILIATION: _____

Registration Fee: (before 2/1/90) (\$25.00) _____

(after 2/1/90) (\$35.00) _____

Total Lodging and Meals: (6 meals & lodging) (\$54.00) _____

Partial Packages: Monday (dinner & room) (\$20.00) _____

Tuesday (3 meals & room) (\$27.00) _____

(lunch only) (\$ 4.00) _____

(lunch & barbecue) (\$ 9.00) _____

(barbecue only) (\$ 5.00) _____

Wednesday (breakfast & lunch) (\$ 7.00) _____

(lunch only) (\$ 4.00) _____

TOTAL ENCLOSED: (Minimum \$10.00 Deposit) _____

BALANCE DUE: _____

Please make checks payable to: FLORIDA CHAPTER, AFS

Return to: Jim Tilmant
NPS South Florida Research Center
Everglades National Park
P.O. Box 279
Homestead, Florida 33030

TENTATIVE AGENDA

10TH Annual Meeting, Florida Chapter, AFS
Withlacoochee Forestry Training Center, Brooksville
26 - 28 February, 1990

Monday, Feb. 26

3:00pm - 7:00pm	Early Registration
5:00pm - 6:00pm	Committee Meetings
6:00pm - 7:00pm	Dinner
7:00pm - 10:00pm	Social

Tuesday, Feb 27

7:00am - 8:00am	Breakfast
8:00am - 12:00am	Registration
8:30am - 12:00pm	Symposium "Mercury and other contaminants within Florida's fishery resources"
12:00pm - 1:00pm	Lunch
1:00pm - 5:00pm	Contributed Paper Session
6:00pm - 7:00pm	Barbecue
7:00pm - 10:00pm	Social / Raffle

Wednesday, Feb 28

7:00am - 8:00am	Breakfast
8:30am - 9:30am	Contributed Paper Session
9:30am - 12:00pm	Business Meeting
12:00pm	Adjourn

ADDRESS QUESTIONS TO: Jim Tilmant, Everglades N.P., P.O. Box 279,
Homestead, Fl. 33030

A MESSAGE FROM THE CHAPTER PRESIDENT

I would like to take this opportunity to encourage your participation in our annual meeting. Although the Symposia and Contributed papers are certainly key ingredients to the success of our annual meetings, the business meeting is important to the success of the Chapter. During the meeting we formulate plans for many of our activities for the following year.

I would ask that each of you come to the business meeting with thoughts on how we can make our Chapter better. Please consider that we should do more than simply host an annual meeting; we need to increase our membership, enlist more academic involvement (faculty and students), and make our professions more visible. There are a host of issues that we need to identify and actively pursue. Think about it!

Ken Haddad

Nominating Committee Candidates

The nominating committee has selected candidates to compete for the offices of President-Elect and Secretary-Treasurer. Please consider their choices and be prepared to vote for them or persons nominated by the membership during the business meeting in Brooksville.

Candidates Selected by the Nominating Committee for the Office of President-Elect

R. Grant Gilmore, Jr., Ph.D. Florida Institute of Technology, Melbourne, 1988; M.S., University of West Florida, Pensacola, 1972; B.S., University of West Florida, Pensacola, 1969. Research interests: Fish ecology, life histories, systematics, biogeography and evolution. Associate Scientist and Division Director, Harbor Branch Oceanographic Institution, Inc. 18+ years.

Churchill B. Grimes is Leader of Fish Ecology at the National Marine Fisheries Service Laboratory in Panama City, Florida. He is a native North Carolinian, where he earned his BS and MS degrees in biology from East Carolina University and his Ph.D. in marine sciences from the University of North Carolina. Dr. Grimes is a former employee of FDNR, Marine Research Institute (1969-71), the NMFS laboratory in Beaufort, N.C. (1972-76), and was Associate Professor of Marine Fisheries at Rutgers University in New Brunswick, N.J. (1977-1984) prior to assuming his present position. His research experience has included various aspects of the life history population dynamics, habitat and behavior of

reef fish, tilefish, weakfish, Spanish mackerel, and king mackerel which has resulted in over 30 scientific publications. Current research interests involve the potential role of the Mississippi River discharge plume in fish recruitment processes.

"I think our Florida Chapter is doing just fine and requires no significant changes to its goals or directions. We have a well-attended annual meeting with a program of good quality technical presentations on some timely topics. I have a few ideas to attempt to improve our already good organization. For example, we would profit from greater participation at the annual meeting by academic fisheries scientists in Florida and the Florida Marine Fisheries Commission, and I would encourage that. In addition, I would try to expand our program to include sponsoring or co-sponsoring a special session of technical papers at the AFS Southern Division Meeting."

Candidates Selected by the Nominating Committee for the
Office of Secretary-Treasurer

Samuel P. McKinney is currently employed by the Florida Game and Fresh Water Fish Commission as a Biological Administrator I in the Central Region (Ocala). He supervises a team of biologists involved in lake restoration, Surface Water Management and Improvement (SWIM) projects, evaluation of the effectiveness and longevity of various fish attractor materials in fresh water, and routine regional fish management tasks.

He conducted research on hydrilla control using multiple de-waterings, co-authored and presented paper on this research, and received second best paper award. He also contributed a portion of the text of Florida Aquatic Habitat and Fishery Resources.

He is a member of American Fisheries Society, AFS Florida Chapter, Fish Management Section since 1980 and a certified Fisheries Scientist.

He attended Auburn University and received a B.S. in Fisheries Management in 1970. Afterwards he worked for one year in the pet store industry before employment with the Game and Fresh Water Fish Commission in 1972; promoted to assistant regional biologist in 1975. This is his current position which was upgraded to Biological Administrator I.

"I believe that there is a reluctance of biologists working outside of the fisheries biology discipline or in private industry to join the Chapter and participate in Chapter activities. The fisheries biologists appear to have a difficult time communicating with those outside our profession. Employees of public agencies or private industry who have a direct impact on the management of fish should be recruited. Through membership in a

common society, communications between fisheries biologists and those outside the fisheries field may be improved."

Robert J. Wattendorf (Watt) earned a Masters degree with honors in Fisheries Science from North Carolina State University, where he also did his undergraduate work. He began his career as a Game and Fresh Water Fish Commission biologist on the Non-Native Fish Research Project in Boca Raton, during 1979. His primary responsibilities included research on impacts of blue tilapia and grass carp. He was responsible for developing a certification program for triploid grass carp using a Coulter counter. Subsequently in 1984 he was promoted to a Biological Administrator I at the Eustis Fisheries Research Laboratory over the Herbivorous Fish Project and began developing a Fish Genetics Project. In 1985, he was transferred to Tallahassee and became Assistant Director of the Division of Fisheries.

As Assistant Director, his primary role is to help provide guidance, and administer the Division which is responsible for scientifically managing the freshwater fisheries resources of Florida for optimum sustained use. This resource is valued at well in excess of one billion dollars, and the Division has 161.5 full-time employees and a budget of 8 million dollars. In addition to his role as Assistant Director, he is also the Surface Water Improvement and Management (SWIM) Act Coordinator for the Commission. Other responsibilities include serving as the Federal Aide to Sport Fisheries Restoration Coordinator and the Division of Fisheries representative to the Regulation Review Committee that recommends rules pertaining to Florida's fish and wildlife. He is also a registered lobbyist for the Commission.

With regard to his participation in the American Fisheries Society, he is a certified fisheries scientist and has been an active Society member since 1977. He has been a member of the Florida Chapter since its inception and presented invited papers at 1987, 1988, and 1989 annual meetings. Currently he is completing his last year as President of the Fish Genetics Section and is also active in the Introduce Fish, Computer Users and Fish Administrators Sections.

His future desires for the Chapter revolve around the opportunity it provides fisheries biologists to develop through professional interactions and by being an active lobbying force. The Chapter has the ability to be instrumental in voicing a united opinion on issues related to the state's fisheries resources and the biologists who are responsible for the resources future.

Excerpts from the AFS Diary

FISH LINES is the name chosen for the "experimental" newsletter to be produced by AFS in response to member's desire for more non-AFS-related fisheries news. AFS staff members Yanin Walker, Beth McAleer and Toni Brome have supported its production. The first "strawman" issue is included with this Shellcracker issue.

AFS FISH LINES

SAMPLE ISSUE

DECEMBER 1989



Fish Lines Debuts

AFS members have expressed the need for additional and more timely summarized news of aquatic resource issues and events which concern the fisheries science profession. *Fisheries* is published too infrequently to serve as a "newspaper" and the AFS DIARY is reserved for news from the Society and its subunits. In response to this need-for-news, the AFS Executive Committee has directed that staff develop a new, experimental newsletter to be mailed as a companion piece with the DIARY. This is our initial attempt to respond to the Excom directive. We have attempted to present news items from all segments of fisheries science, and we've tried also to publish information which you'll want to file away for future reference. Circulation is temporarily limited to DIARY subscribers so we ask that you share your copy with colleagues. We also request your written comments on this new communication initiative. Its evolution and its future will be determined by membership response, plus funding and staff availability.

New Law Bans Ocean Garbage

New laws signed by the U.S. and 37 other nations bar disposal of plastics in navigable waters. The law (Annex V of Marine Pollution Treaty) also restricts disposal

of all other refuse within 12 miles of shore and requires marinas, ports, fish processors, and commercial dock operators to provide containers for easy disposal by mariners. Information, brochures, decals, videotapes, posters, coloring books, and curriculum materials are available from NOAA, Debris Info, 312 Sutter Street, Suite 316, San Francisco, CA 94108.

Canada Gets Tough on Driftnets

OTTAWA - Canadian Fisheries and Oceans Minister Tom Siddon says Canada is clearly opposed to unregulated use of high seas driftnets and said, "We are prepared to take action in concert with strong and committed allies." Canada banned this type of fishing within its 200-mile zone in 1987 and has played a leading role in focusing international attention on the adverse impact of driftnet fishing on fisheries, sea birds, and marine mammals. For details call (613) 992-3474.

Fabulous Lake Erie

COLUMBUS, OHIO - Sea Grant Associate Director Jeffrey Reutter reports the following interesting fish facts about Lake Erie: Lake Erie is the shallowest, warmest, and most biologically productive of the Great Lakes. Lake Erie is the 12th largest freshwater lake in the world, the 4th largest Great

Lake and the smallest by volume. Western Lake Erie is the "Walleye Capital of the World" producing more walleye per unit area than any lake in the world. Lake Erie produces more fish for human consumption than the other 4 Great Lakes combined. For even more statistics contact Reutter at Ohio State University, 1314 Kinnear Road, Columbus, Ohio 43212, (614) 292-8949.

FAO and World Fish Production

FAO Director-General Saouma reports world fisheries production up from 20 million tons in 1946 to 90 million tons in 1987, and the need for 110 million tons by 2000. World fish product values have increased from \$1.3 billion in 1960 to \$22 billion 1986. Saouma cautions that "the effort exerted on many major stocks approaches or exceeds maximum sustainable yield." Almost all important world stocks of bottom-dwelling species and crustaceans are heavily exploited or depleted. To meet world demands Saouma says, "We must promote aquacultural development giving close attention to effects of environmental degradation." World aquaculture production is expected to reach 23 million tons in the next decade, double the 1985 level. For details contact Robin L. Welcomme, FAO, Via delle Terme di Caracalla, Rome, Italy.

Striped Bass Spawning Success

Chesapeake Bay striped bass reproduction is the best in 19 years and plans are underway to lift the 4-year fishing moratorium. The spawn exceeded all expectations in virtually all areas of the Bay and is regarded as very good news. No reasons for the success are given except that the 1982 year class, preserved by a fishing moratorium, has reached sexual maturity. Improved water quality at spawning time is also thought to be a contributor. Plans for a limited reopening of fishery to commercial and recreational fishermen are being worked out. For further information contact the Atlantic States Marine Fisheries Commission, 1717 Massachusetts Avenue, NW, Washington, D.C. 20036, telephone (202) 387-5330.

Sport Fishing Economic Data Available

WASHINGTON, DC - An "Economics of Sport Fishing" report recently completed by the Sport Fishing Institute (SFI) and the American Fishing Tackle Manufacturers Association (AFTMA) is now available. The statistical studies and market research were done by Dr. David Rockland of SFI with information garnered from the 1985 U.S. Fish and Wildlife Survey of Fishing, Hunting and Wildlife-Associated Recreation. To obtain the data

for your state or region write AFTMA, 1 Thomas Circle, NW, Washington, DC 20005, or call (202) 293-2931.

International Swordfish Quotas

Atlantic-wide reduction in swordfish harvest has been urged by the U.S. members of the International Commission for the Conservation of Atlantic Tuna (ICCAT). The U.S. advisors based their concern on a recent NMFS study documenting a 60% decline in swordfish spawning stock and a 50% decline in dressed weight.

Need A Speaker?

Outdoor Writers Association of America, Inc. has a national listing of 360 speakers. Fishing/Boating/Tackle are three of the five speech topic categories available. The listing includes speakers names, addresses, phone numbers, fees, and other pertinent information. Details: (814) 234-1011.

FISH LINES STAFF

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Mitch Rosenfeld
Editorial Staff: Yanin Walker

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AFS FISH LINES is published bimonthly by the American Fisheries Society and mailed first class to leaders in AFS and the fisheries science community as well as subscribers. Yearly subscription rate is \$10.00. Items in AFS FISH LINES are tightly edited summaries of non-AFS fisheries news published elsewhere or developed independently by the staff. When possible the source of additional information is identified. American Fisheries Society, 5410 Grosvener Lane, Bethesda, Maryland 20814, (301) 897-8616

Fish America Foundation

Fish America Foundation, founded in 1983 by the Zebco Corporation, has provided more than \$1,000,000 in grants to 186 public and private grass roots fisheries programs. The foundation is built around Zebco's belief that the fishing tackle industry must take a leading role in preserving and enhancing sport fishing as a great American pastime. For additional information plus grant conditions and application requirements contact Steven Phillips, Fish America Foundation, 1010 Massachusetts Avenue, NW, Washington, DC 20001, telephone, (202) 898-0869.

New Anglers' Coalition Formed

CHICAGO -- Leaders from 50 sportfishing organizations have formed a coalition to identify the extent of fishery problems in the U.S. and to take remedial positions for their solution. The coalition will strive for increased political influence for better fishing and conservation practices. Initiated by the American Fishing Tackle Manufacturers Assoc. (AFTMA), the Coalition members represent 7.7 million anglers. First issues identified include wetland preservation, water quality control, COE project oversight, exotic fish introductions, water diversions, and drift gillnets. Additional freshwater fishing groups are invited to affiliate by contacting AFTMA, 1250 Grove Avenue, Barrington, IL 60010 or phone (312) 381-9490.

Korean Driftnet Agreement

Korea and the U.S. have reached an agreement which allows the U.S. increased monitoring and boarding of Korean high seas driftnet fishing vessels. The agreement reached after President Bush granted Korea a 30-day extension of the Driftnet Act deadline, is similar to an agreement reached with Taiwan in August. The agreements avert threatened embargoes on all-fish product imports from both countries. For additional details and other information on U.S. efforts to restrict the environmental abuses of high seas drift-netting contact Mr. Larry Sneed, Director, Office of Fisheries Affairs, U.S. State Department, 2201 C Street, NW, Room 5806, Washington, DC 20520, telephone (202) 647-2335.

Most Endangered Rivers

According to the American Rivers organization, the 10 most endangered rivers in the U.S. are (in order of the dangers posed): the Platte (CO, NE); Damath (OR); American (CA); Payette (ID); James (VA); Illinois Bayou (AR); New (NC); Animas (CO); and Little Big Horn (WY). American Rivers has also named 10 additional threatened rivers: Greenbrier (WV); Smith (CA); Yampa (CO); Lower Kern (CA); Oswegatchie (NY); Allegheny (PA); Niobrara (NE); North Fork of Mokelumne (CA); Clavey (CA); and Big River in (RI). For information write American Rivers, 801 Pennsylvania Avenue, SE, Ste. 303, Washington, D.C.

20003, telephone (202) 547-6900.

Job Prospects Bright

"It doesn't get any better than this," may describe today's fisheries science employment opportunity. Word of mouth reports from around the country tell of many openings, and recent correspondence from Missouri lists 5 state fisheries biologists jobs awaiting candidates. It's a good time to find an entry level position but it's also a good time for those presently employed to seek out new and better challenges. For more information on the Missouri jobs write: Personnel Section, Department of Conservation, Box 180, Jefferson City, MO 65102.

Carp Skin Leather

VANCOUVER, BC -- Carp skin makes beautiful and durable leather according to Bruce J. Bott of Vancouver. Bott heads a company that has perfected the tanning of the skins and has uses for the remainder of fish after skinning. The Canadian firm is purported to be willing to establish plants in the U.S. where adequate tonnage of carp can be assured. The processor of carp skins wants the largest piece of skin available and they want both sides of the skin left joined at the belly. Skins, once scraped free of flesh and scales, are soaked for 4 to 5 hours in heavy salt solution and packed in plastic for shipment. Anyone interested in providing carp skins should contact Bruce J. Bott, Suite 908, 510 W. Hastings St., Vancouver, BC, Canada V6B 1L3 or phone (604) 683-6880, Fax (604) 683-6885.

Cowboy Aquaculturists

JACKSON, WY -- The Wyoming Fish Ranchers Association is holding meetings around the state to discuss progress toward establishment of an aquaculture industry in Wyoming. The logo reproduced below pretty much says it all and is but the latest indication of the aquacultural revolution which is sweeping over North America. For information contact the WY Fish Ranchers Assoc., Box 20149, Jackson, WY 83001, (307) 733-1796.



Texas Aquaculture Conference

CORPUS CHRISTI, TX -- The Texas Aquaculture Association is planning a Texas-size aquaculture conference for January 29-February 1, 1990. Featuring educational presentations, publications, species workshops, poster sessions, a trade show, and social events. The conference will mark the 20th anniversary of the association. Registration is \$70 members, \$85 nonmembers (before January 15) and attendance is open to anyone. For more information call Mary Boston (512) 265-9203.

Seafood Safety

WASHINGTON, DC -- How

are seafoods inspected? Are all fish safe to eat? Is sushi risky? What are the health benefits of fish? The answers to these and many other questions are provided in the National Fisheries Institute's new video training tape entitled "Seafood Q&A." The tape is now available for training seafood industry personnel who are asked tough questions by consumers. Experts from the Federal Drug Administration, National Marine Fisheries Service and the National Fisheries Institute help set the record straight in areas of ten confused or distorted by the general media. For copy of video or information contact NFI, 2000 M Street, NW, Ste. 580, Washington, DC 20036, telephone (202) 296-3428.

Aquaculture Suppliers Organize

The new U.S. Aquaculture Suppliers Association will hold the first meeting in New Orleans during the Fish Farming Expo. Interim chairman Red Ewald of Karnes City, Texas, will preside over the 7:00 a.m. December 11 breakfast meeting at the New Orleans Marriott Hotel.

USFWS Commits to Aquaculture

The U.S. Fish and Wildlife Service reaffirmed its interest in aquaculture with a recent commitment by Director John Turner, to make the Service's scientific and technical resources available to further development of private aquaculture. Turner highlighted seven areas where the Service will focus

efforts with the private fish farming industry.

1. Increased efforts to make practical fish culture information readily available.
2. Establishment of channels for regular exchange of information, concerns, and problems with the aquaculture industry.
3. Operation of its system of national fish hatcheries to serve as a model for aquaculture development.
4. Maintenance of adequate fish health inspection and certification services.
5. Continuation of research efforts in fish health, nutrition, genetics, registration of drugs and aquacultural chemicals, maintenance of water quality, and development of culture techniques and systems.
6. Certification of triploid fishes such as the grass carp.
7. Continued research in the registration of drugs and aquacultural chemicals.

Catch and Release Walleyes

The live release of fish taken in bass fishing tournaments brought about monumental changes in competitive fishing programs and eliminated most of the criticism that had been leveled at the practice. It was a wise and prudent move in terms of environmental impact and it overcame public relation problems which threatened the future of the tournament concept. An unanticipated by-product of live release has been the wave of support for catch and release angling at all times. This is primarily a fishermen-led phenomenon which makes an enormously important contribution to the future of fishing. In north central U.S. and Canadian "walleye country," sponsors

of mushrooming walleye fishing have profited from BASS angler experiences and are championing live release policies. To measure the effectiveness of such releases, angling tournament officials are working with the Minnesota DNR to measure short and long-term survival. There are some favorable and interesting results which merit the attention of all fisheries managers and anglers. For details we suggest contacting the Minnesota Department of Natural Resources, 500 Lafayette Road, St. Paul, Minnesota, 55155, Attention Richard Hassinger, Fish Chief. Note: Readers with an interest in learning more about walleye tournament rules and regulations should request copies from the In-Fisherman, Walleye In-Sider, P.O. Box 994, Brainerd, MN 56401 and send along a stamped, self-addressed envelope.

FWS Fishery Courses

The USFWS Fisheries Academy 1989-90 listing of courses is now available. Courses are open to individuals desiring to further their skills in a wide variety of fisheries management areas. Most offerings run less than 2 weeks. For details on fees, dates, and locations call, (304) 725-8461 ext. 5239.

Bighead Carp in Missouri

Bighead carp, which probably escaped from a commercial hatchery in 1986, have successfully spawned in the Missouri River. This species can reach nearly 100 pounds, with 60-pound fish having been reported in Missouri. Bigheads feed on the same

(cont. on pg. 4)

food as paddlefish, whose numbers are diminishing due to habitat destruction and the illegal take of their roe. MO biologist Bill Pflieger says "They should never have been brought into the country." For details call, (314) 751-4115.

Fishing Hall Of Fame

The National Freshwater Fishing Hall of Fame publishes world records annually, prints a quarterly newsletter, maintains a library and a museum. Located in Hayward, WI, the Hall is in its 29th year of operation. Details: (715) 634-4440.

Control of Iln

First discovered in 1953, no cure has yet been found for this disease of salmonids. Recourse is usually to destroy infected fish. New methods to control this disease are being developed with encouraging results by the Western Reg. Aquaculture Consortium. For details: School of Fish., WH-10, Univ. of WA, Seattle, WA 98195.

Fish Eat Chicken

In recent years, fish meal made up a significant portion of poultry feed. In a relatively new reversal, researchers have found that poultry by-product meal could replace 50-75% of the conventional food of salmonids without ill effect. For details: School of Fisheries, WH-10, Univ. of WA, Seattle, WA 98195.

Taiwan Aquaculture

In 1985, Taiwan produced

660,000 metric tons of fish products compared to 390,000 in North America. China led the world with 2.75 million metric tons, with Japan in 2nd place with 1.1 million metric tons. Combined world production totaled about 10.6 million metric tons.

Gratis Aquaculture Bibliographies

Bibliographies on aquaculture development, disease control, farming, culture, water management, and related topics are available from National Aquaculture Library, Aquaculture Information Center, Room 304, Beltsville, Maryland 20705.

Unwelcome Aquatic Immigrants

Two years ago the ruffe, a small perch-like fish, was identified by biologists at the Wisconsin DNR in Saint Louis Bay. The introduction is believed to have been caused by ballast water discharge of a European vessel. Experts fear that the ruffe will spread throughout the Great Lakes and disrupt native fish populations.

The zebra mussel was first spotted in Lake St. Clair in 1988, it is multiplying rapidly in Lake Erie - and expected to soon become established in Lake Ontario. Concentrations of 30,000 mussels per square meter have been reported. This organism clogs industrial water intake pipes, and is expected to be detrimental to the area's fisheries. The Great Lakes Fishery Commission states that pumps are already breaking and that maintenance and repairs

costs will be hundreds of millions of dollars. For details call, (614) 265-6300.

Strength In Numbers

Aquaculturists throughout North America recently formed the National Aquaculture Association and held their first meeting in Chicago in July, 1989. Major focus of the Association is expected to be: bird depredation, licenses, permits, and government aquaculture regulatory issues. Joe McCraren of the U.S. Trout Farmers Association is serving as interim association board chairman. A few of the groups active in the new "coalition" are American Fish Farmers Association, U.S. Trout Farmers Association, New York Aquaculture Association, Florida Aquaculture Association, U.S. Aquaculture Suppliers Association, Louisiana Crawfish Farmers Association, Catfish Farmers of America, Wisconsin Trout Growers Association, and the Illinois Aquaculture Association. For details call, (304) 876-6666.

Top Seafood Items

The National Fisheries Institute announced that tuna, shrimp, cod, pollock, flatfish, clams, catfish, salmon, crabs, and scallops were the top selling seafood items in 1988. Compared to 1987, tuna, shrimp, cod, and pollock sales increased slightly; clam and flatfish sales decreased. For details call, (202) 296-3428, or write National Fisheries Institute, 2000, M Street, N.W., Suite 580, Washington, DC 20036.

Black Market Paddlefish Roe

Three men were recently indicted in Chattanooga, Tennessee, for illegally taking paddlefish in Missouri. The eggs from the fish were sold for \$2,500. Assistant U.S. Attorney Gary Humble said that Chattanooga is a middle ground for resale to New York and elsewhere. He stated that the final retail price is \$350 per pound. Additional information may be available from the Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102.

Nix to Carp Rearing

Louisiana considers carp an exotic fish and prohibits their cultivation. Catfish farmers say they can get an extra \$1,000 per acre for also raising filter-feeding big head and grass carp in combination with catfish. Catfish farmers have filed suit against the state in an attempt to gain rearing rights. For details: (601) 853-1989.

China Active in Fish Culture

In the countryside of China's Tianjin Province, lay 20,000 hectares of "wastelands." Twenty-five percent has been converted to fish ponds and crop lands. A 25 million dollar project resulted in intensively mixed agricultural crops including wheat, fish and other live stock. Excavations to create ponds resulted in balanced soil salinities. Four different kinds of carp are raised. Average per capita income increased 190 percent in four years.