



# NEWSLETTER

C.V.C.A.  
RECEIVED

Oct 21 1 22 PM '86

## Fisheries Management Section American Fisheries Society

David K. Whitehurst, President

Volume 6, Number 2

September, 1986

### President's Corner

I have received a lot of positive feedback on the Section's latest projects: the Competitive Fishing Committee, the development of a text on inland fisheries management, and the Regional Editors' reports. Your response to these projects is encouraging because it indicates that the Section is addressing the interests and/or needs of its membership. The ability to identify and respond to those interests is paramount to the vitality of our organization. I feel that we are "on track" with our programs, and I would like to credit the Executive Committee, the Newsletter Editor, and those of you that have taken the time to give your input for our progress to date. However, your interest has created a heavy correspondence load for me so I thought I better update you before all of you write me!

Formation and staffing of the Competitive Fishing Committee was completed shortly after the Fisheries Administrators meeting in April. The Committee is being chaired by Kevin Richards from Missouri who represents the Management Section. The Administrators Section has named three representatives and our Section has several more. The Committee's first order of business is to develop the objectives of the committee. Such objectives will concentrate on the study of potential impacts (positive and negative) of competitive fishing on the resources, the users, and the managers.

The development of this committee has elicited widespread interest from the membership so we will try to keep you updated as to its progress through the Newsletter. However, feel free to contact Kevin if you have thoughtful input for this group. Kevin's address is as follows: Kevin Richards, Route 71, Box 1456, Camdenton, MO 65020.

Our joint endeavor with the Educators Section to

produce a book on fisheries management is also proceeding nicely. A steering committee has been formed with five representatives from each Section. Wayne Hubert (FMS) and Chris Kohler (ES) are co-chairing this committee. The group has decided to restrict the text to inland fisheries management and has drafted a preliminary outline of chapters. Current plans call for a manager and an educator to coauthor each chapter. Please contact Wayne if you have comments concerning the text or if you are interested in helping with the writing. Wayne's address is as follows: Dr. Wayne Hubert, WY Coop. Fish and Wildlife Unit, University of Wyoming, Box 3166, University Station, Laramie, WY 82070.

I am very pleased with the quality of our Newsletter. It was recognized as the second best newsletter from the Sections at last year's annual AFS meeting (although I thought it was the best). Since then we have established Regional Editors that report on management-oriented news from all areas of North America. Your responses indicate that they are doing a great job. Please keep the membership informed by passing along newsworthy items to your Regional Editor.

The Executive Committee has always placed great emphasis on the newsletter. We recognize it as the most important vehicle for communication within the Section; and as such, a very ambitious publication schedule of quarterly issues was established for 1986. We have found, however, that such a schedule is too taxing on our finances and our volunteers. Therefore, the schedule has been adjusted to three issues per year. We should be able to maintain an orderly flow of timely information with this schedule.

This writing will probably be my last chance to address the membership before my term of office expires. I would like to express my appreciation to

you for allowing me to serve in this capacity and for the thoughtful support and consideration that you have displayed to me throughout my term in office. The Executive Committee, the various appointed committees, the Newsletter Editor, and the AFS officers and staff have been so helpful to me and are directly responsible for the progress that we have made in our programs. Correspondence from individuals within the Section has been very useful in providing the ideas and the direction that the EXCOM has needed to plot new courses. Thank you for your interest and involvement.

Our Section has become the largest section in the Society, and membership levels have been fairly stable. I believe that our membership will increase as our management-oriented programs come to fruition and as we make sure that the interests and concerns of managers are recognized within AFS and society (general; not AFS). In September, I will turn the reins over to Don Duff. Don's capabilities are well recognized within our profession, and we are currently selecting a new Executive Committee from an excellent slate of officers. I am confident that the section will prosper under the leadership provided by Don and his EXCOM, especially when supported by the active and involved membership that we have.

Thank you once again for your support.

Sincerely,

David K. Whitehurst

## President-Elect's Corner

I will be taking over the helm from President David Whitehurst at the AFS annual meeting in Providence, Rhode Island in September. Although FMS elected officers serve 2-year terms, the time flies and one never seems to gain all the pre-president experience that is needed. However, I will look forward to working with all members of the FMS and continuing the work that President Whitehurst and the other past-presidents have started. I commend David, the EXCOM and all FMS members who have actively participated in section business the last 2-years. They have led the section down the AFS road and as such you can be proud that your section is involved in issues of international concern relative to the fisheries management profession. I will try to emulate these ideals and keep the section "on-track" in all needed issues. I will look to you, the members, for suggestions and recommendations for the next 2-years. Feel free to contact me or any member of the EXCOM if you wish to suggest ideas or get

involved. You all have different areas of expertise, so share it with us! This is your section, so let's continue to make it No. 1. We're a team, and we're all in this procession together!

Sincerely,

Don Duff

## Section Business

### FMS Helps Sponsor Reef Conference

In the last newsletter, I reported that an International Artificial Reef Conference was in the making, and pledges of financial support were being sought. The FMS Executive Committee recently voted to provide \$500.00 for support of the conference, which should help the sponsors in planning. EXCOM members also suggested that the title be changed to "Fishery Habitat Enhancement Conference" to encourage greater participation from inland fishery biologists as well as reflect the habitat work done in a wide variety of aquatic habitats. FMS is happy to be able to support what appears to be a valuable and worthwhile get-together on a current topic.

I haven't received any word yet on the where and when of the conference. I'll keep you posted as I hear about them.

### FMS Annual Report

Each year, the Fisheries Management Section presents an annual report of activities at the AFS annual meeting. The following is an edited version of that report.

Section membership has grown rapidly over the last year. Membership stood at 1,069 on June 30, 1986, as compared to 973 and 966 on the same date in 1985 and 1984, respectively. The quality of our Newsletter, our low membership dues, membership campaigns, and (hopefully) our programs and activities have probably been responsible for this growth. The FMS EXCOM voted to leave the membership dues at \$3 for 1986-1987.

A major objective of the Section is to encourage professional growth among fisheries managers by sponsoring workshops and symposia to disseminate management-oriented information. This objective was met in 1986 by supporting the Large Rivers Symposium (LARS), the Fourth International Conference on Artificial Habitats for Fisheries, and the Fifth Trout Stream Habitat Improvement Workshop. A demonstration entitled "Micro-Fish II: Hatchery

Applications. Microcomputers in Bioengineering and Fish Culture" scheduled for the annual meeting in Providence has been cosponsored with three other sections.

The section continues to maintain sectional committees and representation on inter-sectional committees and AFS boards and committees. Summaries of major committee activities and accomplishments for 1985-86 are given below.

There is a lot of interest for a fisheries management text so FMS entered into a cooperative venture with the Education Section to publish this book. This project has moved quickly through organizational and early planning stages. A steering committee has been established, and an outline of the text has been drafted and subjected to Committee review.

Lee Redmond completed a summarization of the Competitive Fishing Symposium which was jointly sponsored with the Fisheries Administrators Section (FAS) at the 1985 annual meeting. Lee's report included a recommendation for the formation of a committee to continuously monitor the social and biological opportunities and impacts associated with tournament fishing. FAS and FMS established a joint committee during the summer that is chaired by Kevin Richards (FMS) and includes three members from FAS and four from FMS. This group is currently working to clearly define its objectives for 1986-87.

The Fisheries Techniques Standardization Committee has received responses to its fish sampling and analysis survey from all 50 states and 11 Canadian provinces. These data have been computerized and errors or missing information are being corrected. Once such corrections are made, analyses will begin. Preliminary results are expected by late fall, 1986.

The Mail Ballot Committee enacted plans and a schedule for counting the ballots for the 1986-88 elections. Ballots will be received through September 1, and the committee will make its report at the Section's business meeting on September 15. The Committee also made a recommendation to change the current election procedures required by the Bylaws, which will be considered at the Section's annual business meeting.

The Newsletter was expanded to include three issues per year, and Rich Wehnes has established a network of regional editors to provide coverage of management-oriented news from across North America. The membership has responded very favorably to this format, and the quality of the Newsletter has been excellent.

The Nominations Committee was organized in December and quickly produced excellent procedures for generating a slate of officers. The Committee submitted its report to the President on March 10. Candidates were selected, and the slate of officers was forwarded to the Newsletter Editor along with biographical sketches for inclusion in the Newsletter.

The Riparian-Stream Habitat Management Committee reviewed the WDAFS Glossary on fisheries terminology, and will assist the Society in expanding that document into a North American glossary during 1986-87. It also reviewed a number of riparian management and grazing issues. Don Duff, chairman, helped to organize the Fifth Trout Stream Habitat Improvement Workshop, which was held August 12-14 at Lock Haven University and was cosponsored by FMS, AFS, the Central Pennsylvania Chapter, TU, USFS, and Sport Fishery Research Foundation.

The Steering Committee for the Role of Fish Culture in Fishery Management has made arrangements for printing and sales of the proceedings. Final editing has been completed, composition is underway, and the book should be available by October 1. The AFS central office will handle sales of this publication.

The Urban Fisheries Committee continues its work on the development of a position statement on urban fishing. Progress on the development of this statement has been somewhat slow, and the Executive Committee will review the objectives and organization of this committee at its next meeting.

## News From The Regions

### Canada

Chris Brousseau, Canadian Regional Editor  
Ontario Ministry of Natural Resources  
Box 3000  
Cochrane, Ontario P0L 1C0  
705/272-7038

Walleye Proceedings Available

In September of 1984, the Northwestern Ontario Chapter of the AFS held its annual meeting and conference at Quetico Center, west of Thunder Bay, Ontario. The theme of the conference was "Walleye and Tourism: Future Management Strategies", and by all accounts, it proved a success.

The theme evolved from a perceived need to establish better communications between fish managers and

tourism outfitters, who are a major user group of our fish resources. Essentially, we tried to make the conference a learning experience for both the manager and the operator, by identifying problems which they both face, and discussing possible solutions to those problems. By providing such a forum for discussion, all involved came away with a better appreciation of each other's positions and problems. The major message which came out of the conference was the need for shared responsibility for managing our walleye resources.

The conference was organized into five major sessions: Introductory, Habitat Protection and Rehabilitation, Harvest Regulations (both Traditional and Experimental Approaches), Walleye Culture and Stocking, and a Summary Session. The latter session was set up to allow participants to form small groups and discuss issues which emerged from the conference.

The proceedings of the conference were compiled and edited by Dominic Baccante, Walleye Research Unit, Thunder Bay, Ontario P7C 5G6; 807/475-1636, and the printing was co-sponsored by the Northern Ontario Tourist Outfitters Association and the Canadian National Sportsmen's Shows. If anyone is interested in a copy of the proceedings, please send \$5.00 to Dominic, at the above address.

#### Brook Trout Blood Coagulation Info Needed

Peter Steele, a PhD student (Dept. of Zoology, University of Western Ontario, London, Ontario, N6A 5B7; 519/679-6671) has been studying the Hudson Bay sea run brook trout on the Sutton River for the past few years. He has found that hooking mortality of angler caught and released fish is very high due to a lack of blood clotting which causes the fish to bleed to death upon release. Peter states that blood clotting time in fish is prolonged at low temperatures. For some species, clotting may require 90 seconds at very low temperatures (-2°C: Komtsu et al. 1970). The mechanism responsible for prolonging coagulation at low temperatures is not known.

In cold-adapted anadromous brook trout, (*Salvelinus fontinalis*), coagulation was completely inhibited during the return migration into the Sutton River from Hudson Bay. This inhibition occurred regardless of river water temperature or fish maturity. At present, we have not determined how blood coagulation is inhibited. One possible mechanism under investigation involves the degradation by-products of excessive amounts of growth hormone characterizing this population.

Laboratory results indicate that these fish possess

elevated plasma calcium and tri-glyceride concentrations. Neither of these are known to inhibit coagulation at the observed concentrations. In fact, plasma calcium is required for blood coagulation and tri-glycerides have been reported as anti-fibrinolytic agents in mammalian studies. However, we suspect that elevated blood plasma tri-glyceride concentrations act as blood antifreeze permitting survival in the very cold (<0°C) marine waters of Hudson Bay.

Please contact Peter if you have any ideas. This phenomenon has important management implications for this world class fishery. The average angler catches and releases over 100 trout on his trip down the river, many over 45 cm in length. To manage this unique fishery, the Moosonee District of the Ministry of Natural Resources has prepared a plan to reduce hooking mortality by instituting barbless hook regulations. For more information contact Ralph Wheeler (Moosonee District, Box 190, Moosonee, Ontario P0L 1Y0; 705/336-2987).

#### New Lake Winnipeg Commercial Fishery

Manitoba Natural Resources Minister Sam Uskiw has announced that a new quota system for commercial fishermen on Lake Winnipeg is being introduced.

The new system, called Quota Entitlement, was introduced and explained to Lake Winnipeg fishermen by their advisory board members and by a government consultant who visited the fishing communities around the lake. "Subsequently, we ran an experimental 'pilot project' in the Pine Dock-Matheson Island area to see if the system would work as we anticipated," said Mr. Uskiw.

He pointed out that a referendum vote was conducted in each of the community licensing areas to determine if they wanted the proposed quota entitlement system to replace the quota allocation system that has been in place since 1972. Ninety percent of the fishermen in all but one area have voted in favour of the new system. The exception was Berens River which will not be included in the new system.

Quota Entitlement, which grants certain rights of ownership to fishermen, will allow them to gain access to fishing quotas relative to their individual needs by transferring quotas from one individual to another. A fisherman will own the quota rights allocated to him and will be able to transfer or sell it to any other qualified individual within his community licensing area.

The minister said the system will also provide a means for fishermen or their families to recover the money they have invested in fishing equipment when

they retire from the fishery.

"Quota Entitlement will be initiated during the start of this year's winter fishing season and will be fully operational by next spring," Mr. Uskiw said.

Mr. Uskiw noted that Lake Winnipeg is Manitoba's largest and most important commercial fishery. It produces more than 12 million pounds of pickerel, sauger, pike and whitefish each year and provides about 800 fishermen with a livelihood and way of life. Yet in spite of continuing good harvests and increasing fish prices, the economic viability of this fishery has been increasingly threatened because the cost of catching fish has increased more than the price fishermen are paid for their catches.

"The new method of allocating fishing quotas will significantly improve the income opportunities of Lake Winnipeg commercial fishermen and allow their individual operations to become more viable," Mr. Uskiw said.

Fisheries Enhancement Chief, Joe O'Connor (Box 40, 1495 St. James Street, Winnipeg, Manitoba R3H 0WA) states that the new approach basically involves privatization of the industry, permitting fishermen, within limits, to buy and sell quotas.

Biologically the strategy is healthy for the fishery because fishermen have been told that there will be no more quota increases — if they want more fish they have to go and buy quota from another fisherman. Economically the fishery should be more viable — fewer fishermen, less capitalization and increased individual catch.

If you wish further information, please contact W. Hayden, Director, Fisheries Branch 204/945-7814 or L. Thompson, Chief of Commercial Fishing 204/945-7805.

## North Central

Mike Vanderford, North Central Regional Editor  
Federal Aid Office  
U.S. Fish and Wildlife Service  
660 Federal Building  
Ft. Snelling, Minnesota 55111  
612/725-3596

A symposium on Catfish Management and Culture and a symposium on the Missouri River are scheduled for the 48th Midwest Fish and Wildlife Conference to be held December 7-10, 1986, at the Red Lion Inn, Omaha, Nebraska. These symposia are scheduled in addition to the normal full slate of fisheries

technical papers over the 4-day session. Robert Summerfelt (Dept. of Animal Ecology, Iowa State University, Ames, Iowa 50011; 515/294-6107) is chairman for the Catfish symposium and Chuck Sowards (USFWS, P.O. Box 986, Pierre, South Dakota 57501; 605/224-8693) is chairman of the Missouri River symposium.

## Agency Newsletters

The Fisheries divisions of the Kansas Fish and Game Commission and the Minnesota Department of Natural Resources are both issuing monthly newsletters from their Central Offices for the purpose of keeping state conservation organizations and the public in general informed about Division directions and decisions. The Kansas "Fisheries Division Update" is solely a fisheries publication (contact Bob Hartmann, Kansas F & G Commission, RR 2, Box 54A, Pratt, Kansas 67124; 316/672-5911), while the Minnesota publication is a combined fisheries/wildlife/ecological services newsletter called "A Few Words" (Editor: Derrick Hicks, Div. of Fish & Wildlife, Box 20, 500 Lafayette Rd., Saint Paul, Minnesota 55146; 612/296-3325).

## Ohio

The Ohio Department of Natural Resources - Division of Wildlife has begun a tightly controlled, intensive fisheries management program at the La Su An Wildlife Area in the extreme northwestern corner of Ohio. The approach is similar to the intensive management of state lakes in some of the southern states. Because of an existing desirable population of bluegill and bass, and knowing that uncontrolled harvest would seriously degrade the fisheries, the Division of Wildlife decided to intensively manage the system of 11 small lakes on the wildlife management area to maintain quality bluegill fishing and high bass densities. Fishing on the area is controlled by one day permits and a complete census of harvest is kept through a manned check station. Fish population numbers are estimated annually to determine quotas (40% BG>6" harvested/yr) or length limits (for LMB). Public acceptance has been very good and desirable population characteristics have been maintained. (Larry Goedde, Ohio DNR, Div. of Wildlife, 952 Lima Ave., Findlay, Ohio 45840).

## Iowa

The Iowa Department of Natural Resources - Fisheries Section is undertaking a study to determine if the fish hatchery water intake through the COE Rathbun Dam can be modified to provide for greater flexibility and therefore efficiency in the hatchery operation. As originally installed the water intake is stationary, which makes it difficult to maintain

consistent water temperatures and quality coming into the DNR's hatchery, which is located immediately below the dam and reservoir. The DNR hopes there is a way to be able to move the intake vertically as needed as the reservoir stage or thermocline moves up or down. (Martin Konrad, Iowa DNR, Fisheries Section, Wallace State Office Bldg., Des Moines, Iowa; 515/281-8664).

#### Wisconsin

The Bureau of Fish Management - Wisconsin DNR has published a most remarkable document. It's called "Fish Management Workload Analysis" (Fish Management Administrative Report No. 21, by Betty L. Les, 1984). The significance of this 140 page document can be glimpsed in this quote from the preface to the "Recommendations", on page 5. "The workload analysis clearly demonstrates that expected work far exceeds available human resources to accomplish it. Yet, we also recognize that it is not possible to expand our work force by the 167 positions needed to carry out the work. Therefore, we recommend the following:...". I've never seen anything quite like it, and think it would be a great value to any fisheries management supervisor or biologist by causing you to think about the effectiveness of what you are doing and why. (Dennis Schenborn, Fish Mgmt. Bur., Wisconsin DNR, Box 7921, Madison, Wisconsin 53707; 608/266-7025).

#### Minnesota

The Minnesota DNR - Fisheries Section has begun a long term project of "constructing" or improving existing walleye spawning sites in large lakes in the northern 2/3rds of the state. The justification for using the technique of laying out piles of stone on the ice in winter comes largely from a study done by MN DNR biologist Huon Newberg (Evaluation of an improved walleye spawning shoal with criteria for design and placement. MN DNR, Section of Fisheries, Irw. Rpt. No. 340, 38 pp). The first two new shoals were constructed on Lake Winnibigoshish and Dixon Lake last winter at a cost of \$60,000. (Jim Groebner, MN DNR, Fisheries Section, Box 12, 500 Lafayette Rd., Saint Paul, Minnesota 55155; 612/296-0789).

## South

Tim Cross, Southern Regional Editor  
Turcotte Research Lab  
Route 3, Box 70  
Canton, Mississippi 39046  
601/859-3421

#### Texas

Phil Durocher, Fisheries Management Coordinator for Texas Parks and Wildlife, 4200 South School Road, Austin, TX 78744; 512/479-4860, has proposed a

series of new regulations to restrict harvest of largemouth bass and crappie. Largemouth regulations are based on recruitment and growth rate criteria as follows: for average recruitment and growth rates, a 14" size limit with a daily limit of five is proposed; for average recruitment and fast growth rates, a 16" size limit and a daily limit of three is advised; for high recruitment and average growth rates, a 14" - 18" slot length limit would be recommended; and for high recruitment and fast growth rates, a 15" - 21" slot length limit is indicated.

Many Texas reservoirs contain small crappie. In earlier years this condition was interpreted to be the result of stunting. Recent age-growth studies have shown that a majority of the "stunted" crappie were only 1-2 years of age reflecting a problem of overexploitation. As a result, a 10 inch minimum size limit has been placed on 10 lakes. A statewide aggregate daily bag limit of 25 has also been added for crappie.

#### Georgia

The Georgia Game and Fish Division has three projects currently underway that represent innovative approaches to fisheries management. In one situation, they are evaluating 6 different trout strains in a tailwater fishery and 5 different trout strains in a 2-story lake. The objective of the studies are to determine which trout strains are best suited for certain environments. Some preliminary results have shown interesting differences. For more information contact Chris Martin, Game and Fish Div., Route 2, Box 119, Social Circle, GA 30279; 404/557-2591.

Lake Notely, located in Northern Georgia has historically received stockings of walleye; however, a respectable walleye fishery has never developed. As part of a study to determine the potential of walleye in Lake Notely, the Game & Fish Div. is stocking the lake with walleye fry from New Mexico and Pennsylvania. Fry stockings have been scheduled for 1985, 1986, and 1987. Results are being evaluated by Reggie Weaver, Georgia Game & Fish Division, 2150 Dawsonville Highway, Gainesville, GA 30501; 404/535-5498.

Tim Hess (Game and Fish Division, Suite 1362, Floy Towers East, 205 Butler Street SW, Atlanta, GA 30334; 404/656-3524) is leading a project in which potential public fishing lake sites are being evaluated for construction. The Georgia Game and Fish Division has determined from surveys that the Georgia public desires to fish in small lakes. They have identified 10 to 12 areas of greatest demand and are in the process of contracting their first lake and in the preliminary stages of a second lake.

## Virginia

Researchers at Virginia Tech are studying the 8,100 hectare Smith Mountain Reservoir, located near Roanoke, Virginia, to determine how complementary alewives (*Alosa pseudoharengus*) are in combination with gizzard shad (*Dorosoma cepedianum*). While it is known that in reservoirs, alewives differ from gizzard shad with respect to size, spatial distribution, and the time of spawn, other questions remain unanswered. Virginia Tech investigators under the direction of Dr. John Ney, (Department of Fisheries and Wildlife Sciences, Blacksburg, VA 24061; 703/961-7292) have previously addressed alewife introductions in a reservoir devoid of gizzard shad with work done on Claytor Lake, Virginia.

## Gulf Coast

A new cajun recipe for red drum called blackened redfish has become so popular with restaurant patrons that it has forced the NMFS to limit the harvest of red drum (redfish) in federal waters. The recipe involves coating the fish with hot flavored seasonings and then searing it on an extremely hot grill until it becomes black.

The increased demand for red drum has elevated prices and increased fishing effort directed at the large "bull reds" that are the backbone of the spawning stock. Biologists are concerned that because the species is relatively long-lived (average age of 25-30 years), it would take considerable time for overfished stocks to recover. Further information can be obtained from Paul Leach, NMFS, 9450 Koger Blvd., St. Petersburg, FL 33702; 813/893-3721.

It is interesting to note that other species of fish including freshwater channel catfish are now being prepared with this new cajun recipe.

## Chesapeake Bay

The Cooperative Chesapeake Bay Striped Bass Program as outlined in the last FMS Newsletter 6(1):7 has been moving along smoothly. According to Charles Wooley, Chesapeake Bay Fisheries Coordinator, (C-2 Tawes State Office Bldg., Annapolis, MD 21401; 301/269-2241) "the striped bass brood stock, spawning and stocking program is designed to protect discrete stocks and genetic integrity".

In 1985, approximately 200,000, 4-10 inch stripers were released in the bay after first being tagged by binary coded wire tags. Binary coded tags were chosen because they could provide identification of agency, hatchery, stocking location, and year tagged. In 1986, a large percentage of the projected hatchery production (1.0 - 1.5 million 4-10 inch fish) will be tagged.

## Items of Interest

### Wader Safety

"Wader Safety" is the title of a new film prepared by the Department of Fisheries and Wildlife at Utah State University, and if the summaries I've seen bear any resemblance to the real thing, it's something that all fisheries folks should see. Available on videotape and 16mm film, this 15 minute presentation explains and visually demonstrates how to survive in chest waders. The film depicts the training of fishery students at Utah State University to prepare them to survive in the event of an accidental fall in deep water.

Demonstrations of feet-first and head-first entry, floating, swimming, belt vs. no belt, removal and inflation of waders while in the water, effects of water displacement on weight of waders and swimming while carrying objects are covered. For those of you who learned how to inflate a pair of bluejeans in some previous survival swimming course, this should be a real challenge, as well as a must if you work in chest waders.

The film is suitable for university classes, agency training sessions, and sportsman groups. For information on availability and price please contact Dr. William T. Helm, Department of Fisheries and Wildlife, Utah State University, Logan, Utah 84322-5200; 801/750-2543 or 2459.

### Underutilized Species

One of the challenges of meeting ever-increasing demands for sportfishing is to provide a satisfactory catch rate to participating anglers. But it is often difficult to do that when the object of anglers' demands is one or a few species. The solution? Get 'em interested in species that few fish for.

That is exactly what the National Marine Fisheries Service and the University of North Carolina Sea Grant College Program is doing. Under the title of "A Program to Increase the Demand for Underutilized Species by Sportfishermen in the Southeast Region", these agencies are out to increase the demand for certain species not now generally considered as sport species. A series of educational products was developed that includes fishing, cleaning, or cooking methods of underutilized species that heretofore have been perceived by anglers as being poisonous or containing parasites.

Several educational materials are now available (or will be shortly) from the UNC Sea Grant College Program: a slide/tape and video/tape program

designed for club meetings, brochures and posters, a booklet on how to use these species in fishing tournaments, a recipe book, and a technical study "Perceptions and Preferences for Marine Fish". To obtain any of these write the UNC Sea Grant College Program, Box 8605, North Carolina State University, Raleigh, North Carolina 27965.

Since over a third of all finfish landed in the southeast region are caught by recreational anglers, and since many traditionally popular recreational species are fully exploited, the program offers one of a variety of ways managers can reduce fishing pressure on some species while allowing the angler to continue fishing...

## Illinois Computer Fishery Management

According to the Sport Fishing Institute, and as reported by Mike Vanderford in the December, 1985 FMS Newsletter, the Illinois Department of Conservation has adopted a computerized, comprehensive database management and analysis system to enhance its fisheries management and information capabilities. The micro-computer based data system, called Fish Analysis System (or FAS), is actually a network, with each fish management district having microcomputer capability, and each in turn patched into a centralized mainframe computer.

With the FAS system, each district biologist can input and store all field-collected data. FAS will enable each biologist to do a complete analysis of their data and produce tables and graphs to illustrate results that can be used in research reports, requests for regulation changes and the like.

In addition, all the data obtained and analyzed in each district can be transferred to a centralized mainframe computer which will provide substantial capabilities for fisheries research and management on the state level. Since Illinois' data collection procedures are standardized, statewide data will be comparable and the large size and quality of the database will give researchers greater statistical power when examining statewide fish population parameters and trends.

For more information on FAS, contact Dr. Peter B. Bayley or Douglas J. Austen, Aquatic Biology Section, Illinois natural History Survey, 607 East Peabody Drive, Champaign, Illinois 61820; 217/333-0006.

## Freshwater Reefs

Several newsletters ago, I reported on an Ohio plan to construct artificial reefs in Lake Erie. Now

comes word that the U.S. Forest Service has constructed one in Michigan that appears to be successful in attracting walleye.

The Brevoort Lake Reef is being developed in this 4,230-acre lake to improve the number of fish, particularly walleye, in the lake. In a cooperative project with the Michigan Department of Natural Resources, Forest Service and State biologists designed the reef to provide suitable spawning substrates for walleye. If successful, they felt, expensive walleye stocking programs could be eliminated or reduced while meeting the increasing demand for walleye fishing.

The reef was carefully thought out, with suitable sized rock placed in a layered arrangement on the windward side. This arrangement provides crevices where eggs can settle keeping them safer from predators, while the waves breaking over the top agitates the water, keeping dissolved oxygen high, cleaning the eggs, and keeping the rock free of algae. The reef must be fairly successful, for the walleye were reported to be spawning in great numbers last June, even before reef construction was completed. It has been estimated that within the first five years, an additional 5,000 pounds of legal (15-inch) walleye will be produced, at an annual value of \$145,000.

An additional project consisting of stabilizing several thousand feet of eroding lake shore has been planned, which should provide additional spawning substrates.

For more information on this project, contact the Forest Supervisor, Hiawatha National Forest, P.O. Box 316, Escanaba, Michigan 49829; 906/786-4602.

## Fishing Is Number Two...And Gaining!

The 1985 Gallup Leisure Activities Audit reports that 34% of American adults went fishing at least once last year, which is an increase of 4% over last year. And it was sufficient to propel fishing to the number two spot on the list of favorite leisure activities, behind swimming (41%) and ahead of bicycling (32%).

Fishing was the top activity of men, with 44% of American males participating, followed by swimming and bicycling. Among women, swimming, bicycling, aerobics and bowling ranked ahead of fishing. Only 24% of American women fished last year.

The 1985 Gallup figures were derived from a random sample of 1,528 individuals in over 300 sites. The 95% level of confidence is that the results are plus or minus 3 percent.



## Anchoring Damage to Coral

According to the Gulf Fishery News, careless anchoring in the Gulf of Mexico which damages protected coral and coral reefs could result in federal charges being filed against the guilty boater. Regulations in effect in accord with the fishery management plan for coral and coral reefs prohibit taking or damaging stony corals and sea fans. However, there is no regulation on the books that regulates anchoring.

The Magnuson Fishery Conservation and Management Act provides for penalties for the destruction of protected species. Rather than regulating anchoring, the Gulf of Mexico Fishery Management Council felt that using the protected species sections of the Magnuson Act was sufficient to prevent damage to coral reefs. The Council considered comments from its coral advisors and concluded that, in general, the management plan is working as intended. There is a minimum of coral poaching and most damage to these animals is incidental to other activities.

The Council considered naming additional coral areas as coral habitats of particular concern where special fishing restrictions would apply, such as the use of bottom traps, pots and longlines. However, the Council declined to name additional areas at this time.

## Oregon Salmon Rebound

In this newsletter, we like to highlight management efforts that have brought fish populations back from low levels. One of the latest we've heard about is a successful turnaround in the population of chinook salmon in Oregon's Rogue River. The 1983 and 1984 chinook runs were record lows, and yet through a little help from Ma Nature, some understanding of physical factors and increased hatchery production, this year's run is likely to be a record high.

Some factors contributed to the success. Improved ocean conditions helped. Commercial salmon fishing was closed in some areas and restricted in others. A better understanding of dam tailwater thermodynamics, as well as an altered release regime from these dams, helped natural survival by preventing eggs from developing too quickly. And a doubling of spring chinook smolt releases made in the early 1980's provided more fish that could potentially return.

The result was a successful return of chinook to the Rogue River, which is bound to please recreational and commercial fishermen alike.

## Georges Bank Herring

Another restoration project that probably ranks as one of the more ambitious ones is that of reestablishing herring stocks off Georges Bank. This is the goal of Joseph Graham of the Maine Department of Marine Resources. The demise of the herring has been traced to the distant-water fishing fleets during the 1960's and 1970's. Overfishing was so extensive and over such a wide area, that the fish stocks have not been able to build up their numbers.

Graham wishes to convene an international workshop to examine the feasibility of inoculating Georges Bank with young Atlantic herring, and has asked the AFS Early Life History Section for help in convening the workshop. The Section endorsed the workshop concept and formed a committee to determine how they might best contribute to this effort. Of greatest interest will no doubt be the theory and practicality of restoring fish stocks in large ecosystems.

This has to be one of the largest restoration projects attempted, and one which has probably interested the Fish Culture and Marine Fisheries Sections, as well as some FMS members. We'll try to keep you posted.

## Publications of Interest

### Paddlefish

The Paddlefish: Status, Management and Propagation is a new publication of the North Central Division that contains most, if not all, of the known information on paddlefish. Ten papers, presented at a 1983 Paddlefish Symposium, cover topics such as paddlefish distribution and abundance, current management practices, effects of commercialization and propagation procedures. Of particular interest is the extensive bibliography, which lists all known publications (555 in all) on paddlefish from the 1700's to 1985. This is an important book for paddlefish managers, biologists and anyone who wants to know more about this intriguing and valuable fish. And since I know the editors, I was able to get a peek at the book - the bibliography alone is worth the price. To purchase your copy, send \$9.00 payable to North Central Division/American Fisheries Society (in U.S. currency or equivalent) plus \$2.00 for outside-USA shipment to Joe Dillard, Missouri Department of Conservation, 1110 College Avenue, Columbia, MO 65201.

### Stream Habitat Improvement

The Indexed Bibliography of Stream Habitat Improvement by Don Duff is a revised version of the 1982

publication with the same name, and is now available to fishery managers. The 99-page publication was prepared for the Fifth National Stream Habitat Improvement Workshop at Lock Haven University, Pennsylvania, August 12-14, 1986. It contains over 1,100 references on both structural and non-structural habitat improvement, indexed by 20 key word subjects. Revision of the bibliography was sponsored by the U.S. Forest Service, Intermountain Region, the Department of Fisheries and Wildlife, Utah State University, and the Sport Fishery Research Foundation, Washington, D.C. The bibliography carries a \$6.00 price tag and is available from the Librarian, Department of Fisheries and Wildlife, Utah State University, Logan, Utah 84322-5210; 804/750-1332. For more information, contact the Librarian or Don Duff, U.S. Forest Service, 324 25th Street, Ogden, Utah 84401; 801/625-5662.

### New York Bass

The New York State Bass Study by David M. Green, Bernard J. Schonhoff, III and William D. Youngs is the result of a 1977-1980 study in the use of angler-collected data to determine bass population dynamics. The study was conducted by the New York Department of Environmental Conservation and Cornell University with the assistance of the New York State Bass Anglers Sportsman Society and trained volunteers. New York Bass discusses the methodology and use of angler-collected data, population characteristics of largemouth and smallmouth bass in 12 lakes, a discussion of the status of New York bass populations, and management recommendations. It is a well-written publication that will be of interest to anyone involved in bass management. Copies are available at \$5.00 each from New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York 12233-0001. Make checks payable to the New York State Conservation Fund.

### Fisheries Economics

The Economics of Fisheries Management by Lee G. Anderson is a considerably-updated revision of the original text published in 1977. Seventy-five percent of the material is new, reflecting the changes that have occurred in the last decade. Among the topics are multipurpose fleets, different types of biological models for harvesting fish, fisheries development, recreational fisheries, and the share system of remuneration. There is extended discussion of the concept of user cost, and of the various types of fishery regulations, as well as additional material on developing and operating a fisheries management program. Economics is an excellent reference that will serve as a useful guide to fishery managers who want to understand

what economics contribute to the management of fishery resources. It is available for \$29.95 plus \$2.00 shipping from The Johns Hopkins University Press, 701 West 40th Street, Suite 275, Baltimore, Maryland 21211.

### Florida Fishery Resources

Florida Aquatic Habitat and Fishery Resources edited by Bill Seaman is the first book of its kind in Florida, dealing with freshwater and marine fishery resources and habitats - how they function, their current status, management issues and trends, and potential solutions to problems. Many habitat types are covered: lakes, rivers, salt marshes, mangrove forests, estuaries and the ocean. Subjects include the ecology of different aquatic systems, fish population dynamics, catch rates in different fisheries, current problem issues such as eutrophication and contaminants, and management practices including fish attractors, drawdowns, etc. The book is informative for lay audiences and interested citizens, yet contains sufficient detail for use by scientists, planners and resource managers. This 560 page publication is quite an undertaking for the Florida Chapter of the American Fisheries Society, and represents a state-of-the-art reference for Florida's valuable fish and aquatic habitat resources. For your copy, send your \$15.00 check, payable to the Florida Chapter of the American Fisheries Society, to Florida Chapter AFS, P.O. Box 1903, Eustis, Florida 32727-1903.

### Upcoming Events

September 14-18, 1986. **The 116th Annual Meeting of AFS.** Biltmore Plaza, Providence, Rhode Island. For more information regarding sessions and programs, contact Roy A. Stein, Department of Zoology, 1735 Neil Avenue, Columbus, Ohio 43210; 614/422-7826.

September 14-16, 1986. **National Boating Facilities Conference.** Georgian Inn, Roseville, Michigan. For more information, contact Ron Stone, The National Marine Manufacturers Association, 2550 M Street NW, #425, Washington, D.C. 20037; 202/296-4588.

September 14-21, 1986. **International Large River Symposium.** Delwana Inn, Toronto, Ontario. Participation is by invitation, only. For more information, contact Doug Dodge, c/o Fisheries Branch, Ontario Ministry of Natural Resources, 99 Wellesley Street, West, Toronto, Ontario, CANADA M7A 1W3; 416/965-7887.

September 23-25, 1986. **Oceans '86 Conference and Exhibition.** Sheraton Washington Hotel, Washington, D.C. For more information, contact Oceans '86 Committee, Marine Technology Society, 2000 Florida Ave., N.W., Suite 500, Washington, D.C. 20009; 202/462-7557.

September 25-27, 1986. **Urban Waterfronts '86: Developing Diversity.** For more information, contact The Waterfront Center, 1536 - 44th St., NW, Washington, D.C. 20007; 202/337-0356.

October 12-15, 1986. **Estuarine and Coastal Management - Tools of the Trade.** International Hotel, New Orleans, Louisiana. For more information, contact Dr. M.P. Lynch, P.O. Box 890, Gloucester Point, VA 23062; 804/642-7150.

October 20-22, 1986. **International Rockfish Symposium.** Sheraton Anchorage Hotel, Anchorage, Alaska. For more information, contact Brenda Melteff, University of Alaska Sea Grant Program, 590 University Avenue, Suite 102, Fairbanks, Alaska 99701.

October 21-23, 1986. **Stream Habitat Enhancement Evaluation Workshop.** Airport Sheraton, Portland, Oregon. For more information, contact Paul L. Bohne, Buell & Associates, Inc., Rt. 3, Box 706, Beaverton, OR 97007; 503/649-9205.

October 21-23, 1986. **Third International Atlantic Salmon Symposium.** Biarritz, France. For more information, contact Alex Prichard, Courtleigh Manor, Sunningdale, Berkshire SL5 9QH, England.

October 21-24, 1986. **Thirteenth Annual Natural Areas Conference.** Trout Lodge Conference Center, Potosi, Missouri. For more information, write Natural Areas Conference, P.O. Box 180, Jefferson City, MO 65102.

November 5-8, 1986. **Land and Reservoir Management: Influences of Nonpoint Source Pollutants and Acid Precipitation.** Thunderbird Inn, Portland, Oregon. For more information, contact Spencer A. Peterson, U.S. EPA, Corvallis Environmental Research Laboratory, 200 SW 35th Street, Corvallis, OR 97333; 503/757-4605.

November 9-14, 1986. **Twenty-second Annual American Water Resources Association Conference.** Marriott Marquis Hotel, Atlanta, Georgia. For more information, contact Phillip E. Greeson, U.S. Geological Survey, 75 Spring Street, S.W., Suite 772, Atlanta, GA 30303; 404/221-5174.

November 20-23, 1986. **40th Annual Conference of the Southeastern Association of Fish and Wildlife Agencies.** For more information, contact Sean McKewen, Maryland Forest, Park & Wildlife Service, Dept. of Natural Resources, Tawes State Office Bldg., Annapolis, MD 21401; 301/269-3195.

December 7-10, 1986. **Forty-eighth Midwest Fish and Wildlife Conference.** Red Lion Inn, Omaha, Nebraska. A symposium, "The Missouri River - The Resources, Their Uses and Values" will be one of the highlights. For more information, contact Harold Edwards, P.O. Box 4558, Lincoln, NE 68504; 402/464-0641.

March 20-25, 1987. **52nd North American Wildlife and Natural Resources Conference.** Le Chateau Frontenac Hotel, Quebec City, Quebec. For more information, contact L. R. Jahn, Wildlife Management Institute, Suite 725, 1101 Fourteenth St., NW, Washington, D.C. 20005; 202/371-1808.

May 26-29, 1987. **Coastal Zone 87. The Fifth Symposium on Coastal and Ocean Management.** The Westin Hotel, Seattle, Washington. For more information, contact Delores Clark, NOAA External Affairs, Rockville, MD 20852; 301/443-8031.

The Fisheries Management Section Newsletter is a publication of the Fisheries Management Section, American Fisheries Society. Address all correspondence to Richard E. Wehnes, Editor; P.O. Box 180; Jefferson City, MO 65102; 314/751-4115.

**Richard E. Wehnes, Editor**  
**AFS-FMS Newsletter**  
**P.O. Box 180**  
**Jefferson City, MO 65102**

**Nonprofit Organization**  
**Bulk Rate**  
**U.S. Postage**  
**PAID**  
**Permit No. 263**  
**Jefferson City, MO 65102**