



NEWSLETTER

Fisheries Management Section American Fisheries Society

David K. Whitehurst, President

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President's Corner

I had hoped to have the minutes of the annual business meeting ready to include in this issue of the newsletter, but transcription is not complete. I will submit them for the next issue. As for now, I would like to summarize some of the Section-related business that occurred during the 115th Annual Meeting of the Society that was held from September 6-12 in Sun Valley, Idaho. Members of the Section's Executive Committee stayed busy during the meeting with the AFS Executive Committee meeting, a FMS Executive Committee meeting, the competitive fishing symposium, the Section's annual business meeting, and the various sessions.

The Section made a recommendation to the AFS EXCOM that they approve the development of a North American glossary of stream fisheries terminology. This proposal was formulated by our Riparian Management Committee after working with the Western Division, AFS, to develop a glossary for the western states and provinces. The committee recognized the need to develop a North American glossary and offered to coordinate this effort for the Society. President Reinhart thought our suggestion had merit and promised to take action on it.

The EXCOM (AFS) meeting was very long and touched on many subjects. An excellent summary of the meeting is given in Volume 11, Number 35 of the "AFS Diary". I will only mention a couple of items here that stimulated a lot of interest. The EXCOM completed a long-needed update of the Society's constitution and bylaws which, if passed by the membership, should result in a much more readable document. EXCOM also approved the principle of using the services of "volunteer editors" to edit AFS journals. The editor would receive an honorarium plus secretarial services. This approach will be tested by seeking a volunteer editor for the "Transactions". The purpose of this change is to give the managing editor greater freedom to assume a much

broader role in AFS publications. Mercer Patriarche has announced his retirement after 1986, and a volunteer editor is planned for the "North American Journal of Fisheries Management" if volunteer editing for the "Transactions" works properly.

As for Section business, the EXCOM (FMS) voted to provide \$500 for support of the International Large River Symposium (LARS) which is scheduled for September 14-21, 1986 in Toronto. The purpose of LARS is to focus attention of fishery resource managers, planners, and developers on the need for the rational management of large rivers and to promote the development of productivity models and inventory and assessment techniques. This symposium will have a structure similar to the SCOL, PERCIS, and STOCs symposia which were very successful and should produce much needed information for the management of large rivers.

I thought that the symposium entitled "Competitive Fishing - Challenges and Potential Impacts" went well except possibly for the moderator (me). The papers were well developed, the presentations were good, and the discussion was stimulating. We taped the session and will produce a summary that gives us some direction. I think that the consensus of opinion was that little evidence exists to indicate that competitive fishing is seriously impacting fish populations, but sociological and administrative problems are occurring. The FMS EXCOM has been considering the formation of a competitive fishing committee to follow this complex issue and to produce information, recommendations, etc. as needed. We have decided to wait until the symposium summary is complete and to coordinate with the Fishery Administrators Section about establishing a joint committee. What do you think? Is this committee needed, and if so, would you like to serve on it? I would like to hear from you if you have an interest.

Several interesting new ideas surfaced during our annual business meeting. The Educators Section has

proposed that we work together to publish a textbook on fisheries management which would be similar to the Fisheries Techniques text. A good, up-to-date book on management is certainly needed but should prove to be a very challenging endeavor. I think the Section should participate. I am looking for your comments and offers to work on this project.

Other ideas came up for the Section's consideration which should certainly produce a response from the membership. It was suggested that the Section consider developing a certification program for fisheries managers. Another proposal was for the Section to search for ways to develop continuing education courses for managers to help them keep up-to-date, to meet requirements for certification, and to improve our professionalism. The Fish Health Section has its own certification program. Do fisheries managers need one or does the current AFS certification program meet your needs?

If you feel that the Section should be involved in these areas, let us know. One thing is for certain; if we are going to work in any of these areas, we need volunteers. How about it?

I would like to make one final note before I close. Al Elser, Secretary-Treasurer, had a last minute change in plans and was unable to attend the annual business meeting. We did not present a financial report at the business meeting. I have asked Rich to include it in this newsletter for your review. Please contact your Regional Representative or me if you have questions.

Sincerely,

David K. Whitehurst

Section Business

LARS Contribution

In a recent action, the FMS executive committee voted to support the International Large River Symposium (LARS) with a \$500 donation, as well as a hearty endorsement.

LARS is planned for September, 1986, near Toronto, Ontario, and aims to provide an understanding of large river management for fish production. The symposium will consist of a series of overview papers, case history papers describing large rivers throughout the world, and synthesis papers dealing with global values of production, yield and standing stocks, as well as considering effective management strategies. Participation is by invitation only.

While the limited participation provisions are not a traditional approach to symposia, the IARS planners state that the six days of meetings will be for the attendees to work towards a synthesized approach to large river management. Because of the emphasis on management as well as the fact that the proceedings will be published, FMS Executive Committee members felt the symposium was a very worthy recipient of our financial support.

FMS Financial Report

At the last Fisheries Management Section meeting, the annual financial report was submitted. Below is a summary, edited to meet the newsletter's space requirements. If you have any questions or wish further clarification, contact Al Elser, P.O. Box 67, Kalispell, Montana 59901; 406/755-5505.

FISHERIES MANAGEMENT SECTION

Financial Report

August 9, 1984 through August 30, 1985

BALANCE (Aug. 9, 1984)	\$ 4,347.50
INCOME	
Dues	\$ 3,098.23
Stream Habitat Workshop Payment	500.00
Interest	235.14
TOTAL INCOME	\$ 3,833.37
TOTAL ON HAND	\$ 8,180.87
EXPENSES	
Permanent Home Fund	\$ 1,000.00
Reynolds Printing	207.60
Past President's Plaque	37.50
Postage	209.64
Newsletters	214.97
Bulk Mailing Permit	40.00
Sport Fishing Institute	50.00
Lewis Electric Motor Service	175.00
Wagner Photo	118.00
Skinner Memorial Fund	100.00
Stream Habitat Workshop	500.00
TOTAL EXPENSES	\$ 2,652.71

BALANCE (Aug. 30, 1985) \$ 5,528.16

Bob White Elected

In what was being described as a close race, FMS's own Bob White was elected AFS 2nd Vice President, narrowly defeating Howard Tanner. Bob, who is leader of the Montana Cooperative Fishery Research Unit at Montana State University, served as program chairman for the annual meeting in Sun Valley, Idaho. He became AFS second vice president at the annual AFS business meeting on September 11. Congrats, Bob!

1986 AFS Annual Meeting

You'd think that once an annual meeting concluded, no one would want to talk about another one for a while. Yet the ball for the 1986 AFS Annual Meeting scheduled for Providence, RI is already rolling. I recently received a 6 page letter from Roy Stein summarizing the upcoming meeting and asking that I put this announcement in our newsletter. There's no way I can do justice in a short space, so I've covered the highlights. Write or call Roy for more information.

Under the theme of "Basic Science and Effective Fisheries Management: Bridging the Gap", the meeting will feature symposia, contributed paper sessions, poster sessions, social events, and business meetings. Symposium topics already planned are: Creative approaches to fishery science; Community ecology and fisheries biology: can we be predictive?; Understanding fish: physiology and its applications; Genetics and fisheries: today and tomorrow; Micro-Fish I: stock dynamics; Micro-Fish II: hatchery applications; Little fish and big numbers: do early life history events govern population dynamics?; Human perspectives in fisheries management; Fish behavior: assessing sublethal effects of toxicants. In addition, three more general sessions are planned: Anoxia in coastal waters: how are living resources affected?; Fisheries policy and legislation: understanding the processes; Supply side fisheries: assessing prey availability to predators. Other contributed presentations in the following areas are also needed: Applications of experimental research to real-world problems; field hypothesis testing; integration of life history tactics with population dynamics, behavioral ecology, physiological ecology, ecological theory and modeling; and mechanistic studies of all aspects of individual, population, community and systems ecology. Proposals for other symposia or sessions will be received until December 1, 1985.

If your work fits in with any of the nine symposia or three special sessions, note the session on your abstract and contact Roy Stein for more information on symposium procedures. Titles and abstracts for poster and contributed paper sessions will be due January 15, 1986. An original and six copies of the abstract must be submitted and, if authors wish to be notified concerning their papers, they should also send two self-addressed, stamped postcards bearing the title and author's names.

All special session proposals, abstracts and questions regarding the program should be directed to Roy A. Stein, Department of Zoology, 1735 Neil Avenue, Ohio State University, Columbus, Ohio 43210; 614/422-7826 or 422-8088.

1986 FMS Elections

Nominations Committee Chairman Ben Jaco has reminded me that the election of new FMS officers is scheduled for early next year, probably in conjunction with the first 1986 newsletter in April. Traditionally, our membership rolls are at their lowest point early in the year, and pick up later. Since only members of record at the time of balloting are eligible to vote, I urge you to pay your 1986 dues prior to then. Why not pay them now?

News From The Regions

Canada

Chris Brousseau, Canadian Regional Editor

ASPY Symposium: A Great Success

An international symposium on stock assessment and yield prediction (ASPY) was held in August 1985 at Quetico Center, Ontario. The purpose of the symposium was to advance the understanding of how aquatic production is best apportioned to maintenance, rehabilitation and surplus production, to achieve optimal fishery productivity and benefits for the Great Lakes community.

The symposium emerged out of a general perception that fishery management and science are entering a new era in the Great Lakes. After decades of apparently uncontrolled loss of fishery resources, the 1970's saw the beginning of a new optimism that rehabilitation could be achieved. The symposium co-chairman, Jack Christie (O.M.N.R., Glenora Fisheries Station, R.R. #4, Picton, Ontario, 613/476-2400) reports that the conference was a great success and provided me with a preliminary overview. Jack states that the Great Lakes fisheries now face a new suite of problems. Sea lamprey control, municipal phosphate control and hatchery programs have been very successful and show us that much is possible but we need to know how best to sustain the biological production of the Great Lakes. He also states that we are more conscious than ever of the need to give the user community good advice on what they can reasonably and realistically expect of the production of the Great Lakes, so they can take part in effective and careful regulation to prevent recurrence of the past disastrous resource losses.

The symposium was based on a design used at the 1971 Salmonid Communities in Oligotrophic Lakes Conference. Scientists were selected from the leading edge of various areas of fisheries science and came from seven countries, ten of the United States and four of the Canadian provinces. The symposium's structure was initially divided into production theory, yield theory, community dynamics and stability ecology. Information was synthesized in the topic

areas of assessment methodology, estimation of the production potential of the Great Lakes, partitioning yield by species, and defining the status of fish communities. The main product of the symposium will be a special issue of the Canadian Journal of Fisheries and Aquatic Sciences in December, 1986. It will contain the background papers which define the state of science as of now, the over forty contributed papers on specific topics and a number of synthesis papers.

Jack states that it is too early to put it all together in broad generalizations. However, he notes that a number of new mathematical models and innovative improvements on old ones designed to improve our ability to predict the behaviour of fishery systems were presented. The viability and potential of the Great Lakes to produce large sustainable yields into the future was reassured and new perceptions were gained about the sensitivity of the system to man-made stresses and about the constraints on the recovery from stresses. This reinforces the need to avoid the disastrous mistakes of the past. Jack predicts that the impact of this conference will be felt for years to come. The conference was sponsored by the Great Lakes Fishery Commission.

Kesagami Lake Trophy Fish Proposal

Kesagami Lake, located within Kesagami Lake Wilderness Park near Cochrane, Ontario, represents an important fishery resource. The lake was the site of an active commercial fishery between 1958 and 1966, and a commercial outpost camp has been located on the lake since 1967. While Kesagami Lake is a large lake known for trophy pike population, the fishery is by no means inexhaustible. The proposed Kesagami Lake fisheries management objective is to maintain Kesagami Lake as a high quality trophy lake for northern pike and, to a lesser extent, walleye.

A fisheries assessment and creel census programme conducted during the spring and summer of 1984 revealed information on the characteristics of the walleye and northern pike populations. Proposed regulations are based on evaluations of this information. A protected slot-length limit of 71-86 cm was recommended on northern pike, with a limit of one fish above 86 cm. Under a slot-length limit, intermediate-sized fish which contribute the bulk of the reproductive capability would be protected, while anglers fishing for food would harvest the smaller fish. A limit of one is placed on the number of "trophy" pike above the slot-length limit as these fish are slow growing, relatively old, and relatively few. This also promotes the trophy fishing and catch-and-release concepts.

These new regulations should protect the reproductive capabilities of northern pike and aid in the

creation and promotion of a tourist lake managed for a trophy fishery. These proposals have been met favourably by the tourist outfitter involved and by a small sample of creel anglers. It is anticipated that the new regulations will be in effect in the near future.

Comments on this approach to fish management are welcomed. Please forward them to Chris Brousseau at the following address: Ministry of Natural Resources, P.O. Box 3000, Cochrane, Ontario, P0L 1C0, 705/272-7038.

Kenora District Fish Habitat Improvement

Bruce Ranta (O.M.N.R., Kenora District, Box 5080, Kenora, Ontario, P9N 3X9) reports that they have been very active over the past couple of years with fish habitat improvement. Seven walleye spawning bed projects have been approved to date and others are in the initial stages of assessment. These have mostly involved the clearing of debris from spawning creeks and the addition of several tons of clean rock cobble. Tourist camp owners, cottage associations and the local fish and game club have all been involved in one or more projects.

On Longbow Lake, lake shoal areas were the only suitable walleye spawning areas, because river sites did not exist. However, usable shoals were limited, so existing shoals were expanded and new ones were built.

In all, three shoals were enlarged while two new ones were built by trucking out tons of rock cobble on ice roads. Three of the areas are on windswept points, one in a narrows and one in the end of a shallow, weedy bay. To prevent the rock from sinking into soft substrate in the shallow bay, the rock was placed on top of a large industrial rubber matt. On average, the five shoals measured 65 m long by 3.5 m wide, with the rock cobble piled to a thickness of slightly more than 0.5 m. The total cost of the project, including rock and equipment rental, came to \$15,000.

Shoal construction is presently being undertaken via barge on Dogtooth Lake. Three sites have been chosen for improvements to walleye spawning areas, all in creeks or in the lake where there is considerable current.

Sturgeon Management Workshop

The social acceptance of lake sturgeon has evolved in recent years. It has gone from being scorned to become known as the "King of Fishes" and the "Fish of Kings" and now commands one of the highest prices for its flesh and eggs than any other fish in the province. This increase in popularity has also resulted in declines in populations everywhere. The lake sturgeon is extremely unproductive as it

matures late, spawns irregularly, and is slow growing. In response to increasing demand the Northern Region of the Ontario Ministry of Natural Resources is holding a Sturgeon Management Workshop in Timmins, Ontario in January, 1986. The Region has collected data on this species in large northern rivers and plans to assimilate the material and design new management guidelines for both sport and commercial fisheries.

If you would like more information on the workshop, please contact Chris Brousseau at Cochrane Regional Office (705/272-7038).

North Central

Mike Vanderford, North Central Regional Editor

Meetings

The annual gathering of the Central States Small Impoundment Work Group will be held March 10-12, 1986, at the Howard Johnson Motel in Terre Haute, IN. In addition to summations and discussions of the year's fisheries work in each of the state's impoundments, special emphasis sessions will be held regarding the work group's grass carp project and the use of computers to enhance fisheries management. Contact Thomas Flatt, Regional Fisheries Supervisor, Indiana DNR, P.O.Box 16, Avoca, IN 47420; 812/279-1215.

Illinois

Jim Mick (Impoundment Program Manager, Division of Fisheries, Illinois DOC, 600 N. Grand Ave. West, Springfield, IL 62706, 217/782-6424) seems near ecstatic over the fisheries management projects underway in Illinois. Through a joint effort with the Illinois Natural History Survey, the DOC has initiated a project to: 1) standardize sampling methods, 2) calibrate the efficiency of sampling gear, 3) have district biologists put field data into microcomputers, and 4) develop a computer program to compile all district field data, analyze data within and between lakes, and provide graphics and tables to assist in management evaluations and decisions.

The effort will benefit district biologists and central office staff as well. The project has placed Apple IIe microcomputers in each district office with some IBM PC's to be placed in districts which have particularly large data loads. In the process of implementing this project Jim Mick has become a computer addict, actually passing up most of his summer's fishing opportunities to work on the Department's computer system.

Indiana

A year ago Jed Pearson (District 3 Fisheries Manager, IN DNR, Tri-Lakes Fisheries Station, R.R. 4, Columbia City, IN 46725, 219/691-3181) led an army of DNR fisheries personnel in an impressive, 3-day

total fish kill operation in the Sylvan Lake watershed (N.E. Indiana near Fort Wayne). It was impressive both because of the planning, preparation, and operational skill used in the fish kill itself and because of the complexity of the watershed treated. Sylvan Lake is a 150-year old impoundment of 669 acres (268 hectares) which drains a watershed of 21,000 acres (8,400 hectares) containing 13 small natural lakes and many miles of ditches and streams. The lake is heavily developed with lakeshore cabins and some of the watershed lakes and ponds are completely in private ownership. Sylvan is highly eutrophic and is a bass-bluegill system.

Preparations for the eradication included many public meetings, long negotiations with landowners, TV and radio releases and interviews, close coordination with the local lake association, as well as preparing a detailed logistics plan for the numerous DNR crews actually assigned to do the work. Fisheries Chief Bill James and Regional Supervisor Gary Hudson were both deeply involved with planning, preparing for and implementing the effort. A well prepared, informative brochure describing the why's and how's of the total renovation project were available at meetings and the project sites as well.

The 3-day eradication and restocking costs were approximately \$150,000. Bluegill, bass, channel catfish, and walleye were stocked in the fall of '84 and evaluation surveys were conducted in the fall and last spring. Although no carp have been seen in the follow-up surveys, several "non-stocked" species have shown up. The effort is considered a great success by DNR staff. Anglers will make their evaluation come next spring when the lakes will again be open to fishing (note: 14" minimum size limit on bass, 12" on walleye).

Ohio

Fifteen years ago Lake Erie was pronounced "dead" by one and all. The lake shore along northern Ohio from Cleveland to Toledo was considered a hazard rather than an asset to Ohio citizens. However, combined effects of pollution control efforts, a 4-foot rise in lake level, and a decline in heavy industry on the lake's shores have resulted in a revival of the Lake Erie fishery that can only be called miraculous.

The walleye and perch fishing in Lake Erie are now a tremendous recreational and economic boon. However, shore and boat angling access along the western basin of the lake is very limited. Ohio's Angler Access Development project, is in part providing greatly increased access to Lake Erie's fisheries for the "average" Buckeye angler.

In 1983 the Ohio DNR completed a major offshore fishing pier on Cleveland's lakefront. The 175-foot

long cement structure provides excellent access to a good yellow perch fishery for the population of Cleveland. The \$600,000 cost is considered a good investment to provide fishing opportunities to a large urban population which would otherwise have only very limited access to angling.

In 1985 the DNR completed a major boat and angling public access on Sandusky Bay of Lake Erie. The facility includes a breakwater/fishing pier, boat docks, a 4-lane boat ramp, parking for 150 car/trailers and 50 cars, and latrines. The \$1¼ million project provides a 68 acre lakefront site, only a portion of which is used for the current facility. The remaining acres are to be held pending the need for an enlarged and/or enhanced facility.

The Cleveland fishing pier and Sandusky Bay public access make Lake Erie shore and boat fishing for perch and walleye much more available to Ohio's 1-million licensed anglers. In a state with a small amount of inland water and a large angling population, providing more and better access to the state's biggest and best fishery resource is an excellent fisheries management effort according to Thomas Goettke, Fisheries Program Coordinator (Division of Wildlife, Building C, Ohio DNR, Fountain Square, Columbus, OH 43224, 614/265-6346).

Southeast

Tim Cross, Southeastern Regional Editor

Streams

Fisheries managers have been known to transfer fish from their native rivers and streams into new watersheds. The ultimate technique to accomplish this feat is routing one major drainage into another. This scenario became a reality recently when a channel was cut to connect the Tennessee River, a major tributary of the Ohio and Mississippi Rivers, with the Tombigbee River, a tributary of the Mobile River flowing into the Gulf of Mexico. Fisheries Biologist C.A. Schultz (MS Dept. of Wildlife Conservation, P.O. Box 137, Aberdeen, MS 39730, 601/256-4087), reports that introductions of white and yellow bass, sauger, and smallmouth bass from the Tennessee River have not yet developed major fisheries in the new Tenn-Tom Waterway outside of minor occurrences immediately below the point of connection near Pickwick Reservoir. An "instant" fishery has developed for largemouth bass and crappie, as a result of the inundation of several previously inaccessible oxbow lakes and sloughs which were easily reached with raised water levels resulting from the lock and dam structures on the waterway.

Lakes

Researchers at Auburn University are currently evaluating a 16-inch minimum size limit imposed on largemouth bass in West Point Reservoir, GA. As a result of their extensive databases on fish populations and creel surveys in West Point, the re-

searchers hope to document changes in gizzard shad populations as well as the largemouth bass. Project leaders Steve Malvestuto and William Davies (Auburn University Swingle Hall, Dept. of Fisheries & Allied Aquacultures, Auburn University, AL 36849, 205/826-4786), had originally hoped to evaluate an 18 inch minimum size limit; however, they feel they are documenting changes with the 16 inch limit. The Georgia DNR, Game and Fish Division, is currently creeling West Point Reservoir under the direction of Les Ager (912/825-6354).

The Louisiana Department of Wildlife and Fisheries has initiated a study in which Florida strain largemouth bass stocked in a newly formed 5,000 acre lake are to be compared with native stocks of largemouth occurring in similar lakes. Project leader Janice Hughes (P.O. Box 4004, Monroe, LA 71211, 318/343-4044), reported the study will entail creel census, fish population estimates, and life history studies. This is a unique opportunity to examine the Florida largemouth bass and their relationship to fish populations in a large, newly formed lake.

Steve Miranda (MS Cooperative Fish and Wildlife Research Unit, Mississippi State, MS 39762, 601/325-2647) recently tackled the problem of relating largemouth bass recruitment to YOY bass populations. As a result of work done on bass populations in West Point Reservoir, GA, while Steve was at Auburn University, he observed that bass recruitment was a function of the growth rate and size of YOY bass. He theorized that fast growth rates of YOY bass minimizes mortality due to predation. Bass that spawn earlier seemingly grow faster because they are able to utilize a greater availability of YOY prey. Steve has recently determined that large bass have a higher gonosomatic index and spawn before smaller bass in Mississippi.

Marine

The Gulf of Mexico Fishery Management Council recently conceptually endorsed 7 proposed measures designed to sustain a high availability of billfish for U.S. recreational fishermen. In a nutshell, these regulations restrict commercial fishing for billfish except for a Caribbean subsistence fishery. Measures taken include restrictions on the use of entanglement or gill nets, prohibition on the sale of billfish, and designating billfish species (blue marlin, white marlin, sailfish, and spearfish) as gamefish species. Restrictions also include minimum size limits and a possession limit of one per boat per trip for commercial fishermen. An unlimited possession will be allowed when fish are caught by rod and reel while fishing in a recreational fishery.

A recent joint U.S.-Japanese squid survey in the Gulf of Mexico arranged by Congressman John Breaux

produced some interesting results. The survey, which covered an area from approximately 87 degrees to 91 degrees west longitude at 20 to 300 fathoms, revealed a great abundance of butterfish. Butterfish is a relatively small fish averaging $\frac{1}{4}$ pound with a short life span. The species is presently utilized very little in the United States but is very popular in Japan. According to Chris Gledhill (NMFS, Pascagoula Lab, Frederick Street 8, P.O. Drawer 1207, Pascagoula, MS 39567, 601/762-4591), preliminary estimates put the standing crop biomass of butterfish in the survey area at 125,000 metric tons and an estimated MSY of 50,000 metric tons. The export value calculated on the MSY is 75 million dollars.

West

Chuck Willis, Western Regional Editor

Volunteers

As managers we are continually able to identify more projects, activities and needs than available funds can support or provide. Most of us have observed an ever increasing disparity between needs and funds in light of faltering local, state and national economies. Aside from available dollars, many of us also face reduced ceilings on staffing levels.

Fish management agencies are increasingly turning to the use of volunteer assistance to accomplish programs which otherwise would not be possible. Use of volunteers not only helps to circumvent financial and staffing restraints, it promotes public understanding and support of agency goals and programs through first hand involvement. Successful volunteer programs, like other program types, require careful planning, coordination and supervision. Those currently involved in such programs can provide valuable guidance to new program developers. Likewise, shared experiences and new ideas can result in substantially improved ongoing programs.

While some tasks are better left to professionals, the variety of tasks which can be successfully completed by volunteer groups is extensive. Typical activities undertaken by volunteers have included assistance with habitat enhancement, fish culture and data collection. Other activities have included facility maintenance, fish marking and even research studies.

The Oregon Department of Fish and Wildlife (ODFW) began a volunteer supported Salmon and Trout Enhancement Program (STEP) in 1981. Activities undertaken by volunteers under the supervision of eight ODFW STEP biologists have included habitat improvements, stream surveys, broodstock collection, egg incubation (hatch box) projects and educational programs. Currently, from 2-3,000 citizens are participating in various aspects of the STEP program. They

completed a total of 547 projects and released over 22 million juvenile fish (coho, chinook and chum salmon; steelhead, rainbow and cutthroat trout) during the 1983-1985 biennium. The cost of the program to ODFW for the biennium was approximately \$821,000 (Rich Berry, STEP Coordinator, ODFW, P. O. Box 59, Portland, OR 97207; 503/229-5144). Bob Rawstron, Fish Division Chief for the California Department of Fish and Game (CDFG), indicated that California had a program similar to Oregon's STEP program. The CDFG program includes habitat improvement, hatch box and rearing pond activities with an emphasis on stream habitat improvement (Ken Hashagen, CDFG, 1416 Ninth Street, Sacramento, CA 95814; 916/445-8231).

Jim DeShazo of the Washington Department of Game (WDG, Fisheries Management Division, 600 N. Capitol Way, Olympia, WA 98504; 206/753-2895) said that Washington volunteers assist with production of steelhead trout through hatch box, pen rearing and wild broodstock collection projects. Volunteers also assist with hatchery maintenance. Habitat enhancement and related programs for salmon administered by the Washington Department of Fisheries (WDF) do not utilize volunteers but are funded under the Department's Jobs for America Program (Dick Allen, 115 General Administration Building, Olympia WA 98504; 206/753-3628).

Resident fish (both cold and warm water) have also benefited from habitat enhancement projects implemented by volunteers. For information about that and trout enhancement projects in California, contact Chuck von Geldern, CDFG Region 2, 1701 Nimbus Road, Suite C, Rancho Cordova, CA 95670; 916/355-0842.

A project to enhance wild rainbow trout production in the upper reaches of Oregon's Mepolius River was recently implemented by volunteers (Jim Griggs, ODFW, P.O. Box 59, Portland, OR 97207; 503/229-6042). Prior to implementation, an ODFW survey estimated that only 4.9 percent of the stream's total surface area was available as cover for adult trout (10 percent is considered desirable). Under ODFW direction, more than 50 volunteers placed 81 boulders, a log weir, 16 individual logs and 5 trees (with rootwads attached) at suitable locations in the stream. Objectives were to provide more diverse current flows and greater overhead protection. This first series of enhancement activities increased the percentage of stream surface area available as adult trout cover to an estimated 5.2 percent. Trout Unlimited sponsored the project with a grant of \$4,000 and the Oregon Heritage Wildlife Foundation provided an additional \$500. Heavy equipment and operators were donated by a variety of local companies and individuals. Obviously a great deal of

time, energy and cost was involved in accomplishing a relatively modest amount of enhancement. However, substantial accomplishments can be achieved over time. The use of volunteers can make the difference in the feasibility of undertaking such projects. In addition, the personal investment of the community in enhancing this stream serves to promote an awareness of and appreciation for the quality and value of this and other related resources.

Volunteers are being used throughout the Western Region to collect a variety of samples and data useful to fisheries managers in characterizing harvest. Examples include collection of snouts from fin clipped (coded-wire tagged) fish for tag recovery, collection of fish scale samples and related data, and collection of angler catch and effort data. Paul Mongillo (WDG, Fish Management Division, 600 N. Capitol Way, Olympia, WA 98504; 206/753-2895) related that volunteers were very important in implementing Washington's high mountain lakes management program. Anglers complete confidential harvest report cards which provide catch and growth data. Groups such as the Trailblazers and Highlakers also carry fingerling trout into lakes for stocking. Paul said each of approximately 2,700 lakes is stocked on a three to ten year rotational basis. Aircraft are also used for stocking some lakes.

The states of Idaho, Oregon and Washington are attempting to protect and enhance runs of wild steelhead trout in the Columbia River Basin. Hatchery steelhead trout are marked with an adipose fin clip so that they can be recognized by anglers. Regulations call for the harvest of hatchery (marked) steelhead trout only. Jim DeShazo (WDG, Fisheries Management Division, 600 N. Capitol Way, Olympia, WA 98504; 206/753-2895) reported that volunteers have been used to mark hatchery steelhead trout released by Washington.

Washington has also used volunteer assistance to conduct research investigations. WDG recently completed a study of walleye hooking and capture mortality on the Columbia River. Six biologists and approximately 18 volunteers fished from 8:00 a.m. to 3:00 p.m. on May 4, 1985, capturing 180 walleye which were subsequently held for 12 days in submerged cages. Another 164 walleye captured by electrofishing were also held in submerged cages as a control. Water temperature during the capture and holding period ranged from 47° to 52° F. Only two of the angler caught fish died while none of the shocked fish died. Doug Fletcher (WDG, Route 1, Box 13930, Naches, WA 98937; 509/653-2732) is currently completing a report on this study.

Items of Interest

Marine Fisheries Improvement Act

Legislation that will enhance the authority of fishery managers to protect coastal and anadromous fishery habitats has been introduced into the Senate Committee on Science and Transportation. Senate Bill 747 seeks to amend the Fisheries Conservation and Management Act, which provides for federal management of marine fisheries from 3 to 200 miles offshore. The amendments are being sought to strengthen the ability of fishery managers to address actions by federal agencies that might reduce the quality or quantity of habitat needed by federally managed fishery resources such as Pacific salmon, striped bass, shrimp and king mackerel.

Three habitat provisions are proposed. First, to require that all federal fishery management plans identify habitat necessary for production of the fishery or its food base, actions that might affect the fishery's habitat and actions needed to conserve, restore or maintain the identified habitat. Second, the critical habitat provisions would mandate that all federal agencies give full consideration to the concerns of federal fishery managers and the Regional Fishery Management Councils about federal development or project licensing activities that would impact federally managed fisheries and their habitat. Third, the amendments establish a regional planning process to identify and address the habitat needs of marine fisheries.

These habitat provisions were supported by many organizations, including the eight Regional Fishery Management Councils, the American Fisheries Society, the International Association of Fish and Wildlife Agencies, three state Marine Fisheries Commissions, and the National Wildlife Federation.

Similar legislation has passed a House committee, but S.747 is hung up while Senators Gorton and Stevens debate their tack-on amendments involving foreign fishing. Senator Gorton supports a phaseout of foreign fishing in U.S. waters while Senator Stevens wants an immediate ban.

Whenever this issue is settled and the bill makes it out of committee (which seems likely) it will then be sent to a Senate and House Conference Committee, since the House and Senate versions differ somewhat. From there, it will go to the full House and Senate for passage. We've got a long way to go before increased marine habitat protection is a reality.

Great Lakes Whitefish

According to a recent article in The Fisherman, a periodical serving Great Lakes commercial fishing industries, fisheries researchers have found a fairly reliable method of forecasting Great Lakes whitefish populations as much as three years in advance. Whitefish are very valuable, representing the largest freshwater commercial fishery in North America. Michigan alone reported a 1984 harvest of over 5 million pounds, valued at \$3.8 million. Population variations, however, have had serious economic impacts on commercial fishermen.

Three factors affecting year class strength and recruitment were found to be the number of adult fish spawning in November, the presence or absence of ice cover, and spring temperatures. The biggest year classes are produced from spawning seasons followed by cold winters with plenty of ice cover (which protects whitefish eggs from wind and waves) followed by warm springs with an abundance of zooplankton. Hard winters apparently also benefited zooplankton populations, since divers found masses of food organisms growing after hard winters and sparse growth following warm winters. Researchers are now looking at characteristics that contribute to egg production and survivability.

The results, now being analyzed by Michigan State University's Bill Taylor, Mark Freeberg and Martin Smale, can be used to make predictions on future whitefish populations, and the trio would like to make whitefish yield predictions as precise as possible. Commercial whitefish fishermen would also like precise and accurate predictions, especially when they have to make decisions regarding long-term investments.

White Bass Eradication Ruling

In a recent article from the Sport Fishing Institute, a constraint on the use of some fishery management tools in California has been lifted. According to a California appeals court, the California Department of Fish and Game has the authority to "eradicate dangerous pests" and may chemically control white bass with rotenone.

The highly mobile white bass has spread through a number of streams and now poses a threat to trout populations. California Fish and Game personnel had wanted to renovate streams with rotenone and eradicate the predatory white bass. However, citizens in Tulare County were successful in obtaining a ban on the project, based on a law which bars a person from discharging a pesticide onto property without the consent of the property's owner.

On appeal, California Fish and Game argued that they are not defined as a person, and further, that applying this law would infringe on the state's power to eradicate dangerous pests. The appellate court's ruling specifically noted that the California legislature has declared the protection and conservation of fish to be in the public interest and has delegated to the Department of Fish and Game the authority to determine when one species is preying on others and the further power to kill the predatory fish.

It's probably a safe bet that the appellate ruling will be appealed.

TVA Journal

A letter to the parent society from the Tennessee Valley Authority indicates that a new journal is in the offing. Beginning in the winter of next year, TVA will begin publishing The Forum, a scholarly journal designed to explore policy issues in energy, natural resources and economic development. At the present time, TVA is looking for original papers for the first issue. Those of you interested in writing for The Forum, or want to learn more about it, contact Alanson Van Fleet or Dan Schaeffer, Tennessee Valley Authority, Knoxville, Tennessee 37902.

Publications of Interest

Riparian Management

Riparian Ecosystems and Their Management: Reconciling Conflicting Uses, edited by R.R. Johnson, C.D. Ziebell, D.R. Patton, P.F. Ffolliott and R.H. Hamre is the published result of the First North American Riparian Conference held in Tucson, Arizona, last spring. A total of 117 papers plus a foreword by the Governor of Arizona, Bruce Babbitt, and a model riparian protection statute are included. The publication is divided into sections on physical characteristics of riparian ecosystems, ecology of riparian ecosystems, hydrology of riparian systems, riparian resources (recreation, agriculture, wildlife, livestock use, fisheries and amphibians and reptiles), multiple-use planning and management, legal and institutional needs, and riparian ecosystems in dryland zones of the world. A tremendous amount of riparian knowledge is packed within the publication's 523 pages, and is a must for anyone interested in riparian ecology and management. The book is available at no charge from the Rocky Mountain Forest and Range Experiment Station, U.S. Forest Service, Publications Distribution, 3825 E. Mulberry, Fort Collins, Colorado 80524. Ask for General Technical Report RM-120.

Larval Fish Ecology

Larval Fish Ecology: A Critical Management Concern is a videotape just released by the U.S. Fish and Wildlife Service. We originally reported on this film last year (FMS Newsletter 4[3]:5). After an introductory session providing the viewer background to the ecology of the early life history of fishes, the film discusses management and mitigation of environmental perturbations. The film was originally intended for U.S. Fish and Wildlife Service biologists, but it would also be valuable to state agencies, colleges and universities, and other organizations interested in or charged with fish management. Copies of the videotape for Fish and Wildlife Service personnel can be arranged through the Office of Information Transfer, U.S. Fish and Wildlife Service, 2629 Redwing Road, Fort Collins, Colorado 80525; 303/226-9100. The film can also be purchased from the Office of Instructional Services, A-71 Clark Building, Colorado State University, Fort Collins, Colorado 80523; 303/491-1325.

Economics of Stream Management

Influence of Forest and Rangeland Management on Anadromous Fish Habitat in Western North America: Economic Considerations edited by William R. Meehan addresses the physical, political and economic characteristics of western anadromous fisheries, and discusses biological and economic concepts for evaluating and managing fishery resources.

The publication presents the economic characteristics of anadromous fisheries in the Pacific, the concepts of economic valuation for both recreational and commercial fisheries, the relationship between management objectives and economic concepts, the management of freshwater habitat, and the problems associated with the implementation of management measures. Specific biological conditions for optimum fish production and the effects of forest and range management on those conditions are presented. The economic report discusses considerations for forest and rangeland management alternatives while recognizing the difficulty of translating economics into specific rules and regulations.

The report is free of charge from The Pacific Northwest Forest and Range Experiment Station, U.S. Forest Service, 319 S.W. Pine Street, P.O. Box 3890, Portland, Oregon 97208. Ask for General Technical Report PNW-181, April 1985.

Upcoming Events

December 15-18, 1985. *Forty-seventh Midwest Fish and Wildlife Conference*. Anway Grand Plaza Hotel, Grand Rapids, Michigan. For more information, contact Midwest Steering Committee, Department of Fisheries and Wildlife, Natural Resource Build-

ing, Michigan State University, East Lansing, Michigan 48824; 517/353-0647.

January 13-17, 1986. *Ocean Science Meeting*. Fairmont Hotel, New Orleans, Louisiana. This meeting of the American Geophysical Union and the American Society of Limnology and Oceanography will cover topics that include physical and biological oceanography, atmospheric sciences, chemical and geological oceanography, underwater acoustics and ocean technology. For more information, contact the American Geophysical Union, 2000 Florida Avenue N.W., Washington, D.C. 20009; 800/424-2488.

January 28-30, 1986. *Economic and Social Values of the Wildlife Resource*. Hotel Syracuse, Syracuse, New York. While this international symposium, sponsored by the New York Chapter of The Wildlife Society, may be oriented towards terrestrial wildlife, fisheries workers should find a wealth of valuable information. For more information, contact William Porter, Arrangements Chairman, Wildlife Values Symposium, 253 Illick Hall, S.U.N.Y. College of Environmental Science and Forestry, Syracuse, New York 13210.

March 9-13, 1986. *Common Strategies of Anadromous and Catadromous Fishes*. Park Plaza Hotel, Boston, Massachusetts. Sponsored by the Northeastern Division AFS. For more information, contact Mike Dadswell, Fisheries and Oceans, Biological Station, St. Andrews, NB E0G 2X0; 506/529-8854.

March 21-26, 1986. *The 1986 North American Wildlife and Natural Resources Conference*. MGM Hotel, Reno, Nevada. Under the theme of "Resource Management: First Line of Defense", natural resource professionals will gather to discuss environmental protection and management topics. Those wishing to participate are asked to contact The Wildlife Management Institute, Suite 725, 1101 14th Street NW, Washington, D.C. 20005.

May 12-16, 1986. *First National Symposium on Social Science in Resource Management*. Oregon State University, Corvallis, Oregon. For more information, contact Donald R. Field, NPS Cooperative Park Studies Unit, College of Forestry, Oregon State University, Corvallis, Oregon 97331.

May 25-31, 1986. *First Asian Fisheries Forum*. Manila, Philippines. For more information, contact the Chairman, Asian Fisheries Forum, MCC P.O. Box 1501, Makati, Metro Manila, Philippines.

August 11-14, 1986. *Fifth Trout Stream Habitat Improvement Workshop*. Lock Haven University, Lock Haven, Pennsylvania. This workshop will give fishery workers an opportunity to discuss and review

the techniques of improving and/or repairing trout stream habitats. Major sessions will be Planning and Design, Bioengineering, Construction and Maintenance, and Biological Assessment. The deadline for abstracts for papers or poster sessions is February 1, 1986; titles should be submitted by December 15, 1985. For more information, contact Jack G. Miller, Pennsylvania Fish Commission, 450 Robinson Lane, Bellefonte, Pennsylvania 16823-9616; 814/359-5140.

September 14-18, 1986. *The 116th Annual Meeting of AFS*. Biltmore Plaza, Providence, Rhode Island. Under the conference theme of "Basic Science and Effective Fisheries Management: Bridging the Gap", the American Fisheries Society will hold its annual meeting with the International Association of Fish and Wildlife Agencies. The meeting will feature symposia contributed paper sessions, poster sessions, social events, and business meetings. To explore the conference theme, the program committee has solicited a number of symposia that show how basic research approaches can provide insight into applied problems in fishery biology (see related story). A second call for papers has been issued. For more information regarding sessions and programs, contact Roy A. Stein, Department of Zoology, 1735 Neil Avenue, Columbus, Ohio 43210; 614/422-7826. Questions regarding facilities and meeting arrangements should be directed to Richard Sisson, Department of Environmental Management, Division of Fish and Wildlife, Government Center, Tower Hill Road, Wakefield, Rhode Island; 401/789-3094.

September 14-21, 1986. *International Large River Symposium*. Delwana Inn, Toronto, Ontario. The major aim of this symposium is to provide an understanding of the management of large rivers for fish production. The symposium will consist of a series of overview papers describing production processes of rivers, dealing preferentially with large rivers, case history papers describing large rivers, and synthesis papers dealing with global values of production, yield and standing stocks, as well as considering effective management strategies on large rivers. 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.

Editor's Corner

In this issue we have featured columns from our Regional Editors, and I am impressed with the aggressiveness, as well as the diversity of approaches

in each column. Above all, these editors have taken "communication" to heart - names, addresses and phone numbers are used to help you contact those individuals who may be involved in work similar to yours.

While the Regional Editors are doing a fantastic job, they can't do it without your cooperation. Call them, write them or seek them out at meetings. Tell them what you're doing. Tell them what you'd like to see in their column. Help them give you the information you'd like to see in their columns. Above all, share your work with them when they contact you.

These editors are doing an extremely important job: helping keep the lines of communication open between fishery managers. Here's where they can be contacted:

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Northeastern Regional Editor

Vacant

I still need an editor to serve the Northeast Division. If you are interested in serving, please drop me a line.

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.

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