



THE TRIBUTARY

A Newsletter of the Western Division,
American Fisheries Society



American Fisheries Society
Western Division

Volume 14, No. 1/December 1988

THE PRESIDENT'S CORNER

Greetings, from your new President!

Nancy MacHugh resigned from the position of President-Elect in early September due to increased job responsibilities. I went from Vice-President to President-Elect to President in a two week period, not quite the amount of planning time I had anticipated. I am, however, beginning to adjust and will give this year as President my best shot. Cay Goude who was just elected as Vice-President is now President-Elect, and we are electing a new Vice-President with this issue of *The Tributary*.

There are three areas that I am emphasizing this year: communication, environmental concerns and membership.

We need to keep lines of communication open between the division and chapters. Chapters have an opportunity to participate in the workings of AFS by having their presidents attend the EXCOM meetings and be a part of the decision-making process. Be sure that your chapter is represented. I plan to have a division representative at all chapter meetings this year. It is the duty of division and parent society officers and staff to assist the chapters by providing an administrative framework. We are your elected repre-

The Tributary is distributed to 2800 WDAFS members and exists as a forum to present fisheries-related information. As the editor, I cannot accomplish this goal unless **YOU** participate! The WDAFS will publish three editions, beginning in 1989. Deadlines for submission of articles for **The Tributary** are February 15 (for the Winter issue) and June 1 (for the Spring issue) and October 15 (for the Fall issue). If you have information you would like included in **The Tributary**, send it to:

ROGER W. OVINK, TRIBUTARY EDITOR
P.O. Box 428
Corvallis, Oregon 97339

sentatives, so express your concerns to us. We will assist you any way we can.

Roger Ovink has agreed to publish another issue of *The Tributary* bringing it to three issues per year. This will help the communication process and provide more timely information to the membership.

There are three areas of emphasis this year:

- ◆ **communication**
- ◆ **environmental concerns**
- ◆ **membership**

We all need to communicate more with other people and make them aware of what AFS stands for. I recently received a letter from Carl Sullivan urging us to become involved and establish communication with the Fisheries Management Councils. These are groups created by Congress to assist in managing the ocean fisheries. There are three Fisheries Councils in the Western Division. These are The Pacific Fisheries Council, Portland, OR, The North Pacific Fisheries Council, Anchorage, AK, and The Western Pacific Council, Honolulu, HI. The Western Division Marine Fisheries Committee will meet with these councils to discuss the goals of AFS and how both groups can work together to benefit fish. If any of you are interested in being involved, please contact me.

I have established an environmental concerns committee at the division level. Dave Burns is the chairman of this committee. He will have a Canadian counterpart who has not yet been named. Anyone interested? This committee will streamline the process for chapters to bring their concerns to the Western Division and Parent Society. Issues will be handled in an unbiased, unemotional and timely manner. It is time to recognize that the Western Division has 240 Canadian members with a potential for two to three

times that many. We need a Canadian co-chairman for this committee, someone who knows and understands the particular environmental issues and the policies and political concerns of Canada. We need to become more responsive to the needs and concerns of our Canadian as well as our United States members.

Membership is a vitally important issue and must be addressed by all. The dues rebate program just passed at the Toronto meeting should bring AFS a long way toward improving membership numbers. The rebate will provide money to chapters based on the number of AFS members in that chapter. This will make chapters more aware of the number of nonmembers in their ranks. The dues rebate will also provide money to the chapter treasury which hopefully would be used to help send their president to EXCOM meetings. This is where the AFS business is conducted and, as you know, chapter presidents or their representatives are welcome to attend and express their thoughts on all issues.

I am looking forward to an exciting and productive year for the Western Division. Pat

FROM YOUR NEW PRESIDENT-ELECT...

As many of you are aware, I was recently moved into the post of president-elect. One day I am in charge of membership, the next day I am in charge of the 1989 Conference. I feel like the running race has already started and I am still tying my shoes. I know that many of you have previously coordinated with Pat Dwyer regarding the conference. However, please give me a call with your ideas, suggestions and offers of aid. By December I will have caught up with the rest of the runners! Cay

ENVIRONMENTAL CONCERNS COMMITTEE

Our new president, Pat Dwyer, recently created a new committee for the Western Division. The Environmental Concerns Committee (ECC) was created to respond to the strong interest of the membership. It will serve the Division President so that the concerns of the Division are effectively handled and will act as the Division's counterpart to the Parent Society's ECC.

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SPECIAL VICE-PRESIDENTIAL ELECTION

By this time most of you have heard that President-Elect Nancy MacHugh resigned her office a few weeks prior to her assumption of the WDAFS Presidency in mid-September. Her decision was based on career and personal reasons and we wish her the best in her future endeavors. Her decision, however, temporarily left WDAFS without an incoming President. After considerable research and consultation with WDAFS Bylaws' Chairman and AFS Constitutional Consultant Tom Powell, your Excom surveyed the options and chose the following path effective at the September transition:

1. Elevate Vice-President Pat Dwyer into the Presidential position bypassing his year as President-Elect and Program Chair. Pat is now effectively serving as WDAFS President.
2. Elevate newly elected Vice-President Cay Goude into the President-Elect position bypassing her year as Vice-President. Cay is now effectively serving as WDAFS President-Elect.
3. Temporarily appoint John Baughman (who ran against Cay Goude in the last election) to fill the Vice-President position until an emergency election could be held to again hear your wishes as WDAFS members.

Your Nomination Committee thanks all who participated in the process and particularly the following two excellent candidates who have graciously stepped out of the ranks at this hour of need to offer their services to AFS and the Western Division. PLEASE SHOW THEM YOUR SUPPORT AND CAST YOUR VOTES!

▶ PLEASE SELECT ONE OF THE FOLLOWING CANDIDATES FOR THE WDAFS OFFICE OF VICE-PRESIDENT:

David C. Burns, Idaho Chapter

Forest fisheries biologist for the Payette National Forest, formerly Assistant Division Chief of the Fisheries Division for the Washington Game Department. Certified fisheries scientist. Ph.D. from the University of Idaho, 1975, M.S. from Montana State University, 1973 and B.A. from Chico State, 1971. Member of the Idaho Chapter for five years. Currently the Idaho Chapter Past President and Awards Committee Chairman. Currently on the AFS Environmental Concerns Committee and Chairman of the Western Division Environmental Concerns Committee.

John G. Baughman, Colorado-Wyoming Chapter

Fisheries Management Coordinator, Wyoming Game and Fish Department, Cheyenne. B.S. in Fisheries Science, Colorado State University, 1972; M.S. in Zoology, University of Montana, 1978. Formerly Wildlife Planner and Reservoir Research Supervisor, Wyoming Game and Fish Department. President of Colorado State University Chapter AFS (1972) and Colorado-Wyoming Chapter (1984-85). Member of Chapter committees for Program, Best Paper and Award of Excellence. Chaired the WDAFS Award of Excellence Committee, 1980.

MAIL BALLOT TO: WDAFS BALLOT, C/O DON MARTIN, RT. 1, BOX 84, STAR, ID 83669

The committee's assignment is to screen issues, channel high priority issues to the Parent Society's ECC and act to draft letters and other documents for the Division President. Bylaw changes are pending to make the ECC a continuing effort of the Division.

Pat appointed Dave Burns as the chairperson of the ECC for this year. Dave's first act was to ask chapters for potential members. Any person interested in being a part of the "ground floor," should contact Dave, P.O. Box 1351, McCall, Idaho 83638. 208/634-2553 or 208/634-8151.

SOCIETY NEWS

FISHERIES AGENCY REORGANIZATION

The primary thrust of this effort is to consolidate all fisheries functions of the U.S. government into a single agency, possibly along the lines of the EPA. The objective of the effort is to greatly improve the efficiency, effectiveness and the focus of U.S. government in fisheries management and fisheries resources conservation. There are lots of overlaps and lack of coordination between 37 U.S. federal agencies dealing with fisheries. The thought is that establishing a single, independent fisheries agency will give fisheries much more clout in the federal government.

In the early 1980s, the AFS became concerned with the apparent inability of the federal government to carry out mandated freshwater and marine fishery responsibilities. The society established an *ad hoc* Federal Fisheries Responsibilities Committee, chaired by John P. Harville, past director of the PMFC, to review the distribution of federal fishery authority and the rationale for the distribution.

The Harville committee identified 12 issues, ranging from management of common property resources to accountability and efficiency of governmental programs and organization. Among other recommendations, the committee's report called for consolidation of primary fishery functions into a single federal fishery agency and a new emphasis on management, enforcement and research.

The American Fisheries Society has set as a major priority the implementation of the Harville report through the "Federal Fisheries Responsibilities Committee." Those interested in becoming involved may contact AFS at 5410 Grosvenor Lane, Bethesda, Maryland 20814 or call 301/897-8616.

INTERNATIONAL FISHERIES SECTION

AFS's newest section, the International Fisheries Section, has been busy under the guidance of Dr. Tapan Banerjee. Tapan is also the chairman of the first World Fisheries Congress Steering Committee and has been actively seeking sponsors, drafting a prospectus, developing a logo and writing a brochure. He is also seeking a host country for the Congress. A major problem that the Congress faces is funds to defray travel expenses, to employ an executive director and staff, and mount a publicity campaign (including brochure). Possible grant sources have been identified but progress on that front is slow. If you have any suggestions for Dr. Banerjee or can offer assistance, please contact him ASAP. Dr. Tapan Banerjee, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Room 3130, Washington, D.C. 20230, 202/377-3922

CRITICAL HABITAT ISSUES

The five most critically important habitat issues in fresh water as well as in the marine environment were chosen for AFS action by the participants in the Toronto Excom Retreat. The issues chosen by the AFS leadership were as follows:

Fresh Water Habitat Problems

- Non point source pollution
- Acid rain
- Riparian habitat loss
- Toxic substances
- Wetland loss (tie)
- Instream flows (tie)

Marine Habitat Problems

- Wetland loss
- Ocean dumping
- Coastal development
- Estuarine anoxia
- Bottom alteration

WOW!

All 119 members of the Montana Chapter are AFS members. This tremendous increase (up from 57 percent last year) says a lot about the professionalism of the Chapter and the effectiveness of their recruiting strategy. They offered Chapter members a year's free Chapter membership if they would join the Society. Everyone took them up on the offer — even 17 student members. Here's an "attaboy" for Membership Chairman Jim Peterson and the Chapter Excom!

JOIN A COMMITTEE! JOIN TWO!!

The following folks are the chairpersons for WDAFS standing and special committees. They need your help if you have some time to give. Call and join a committee today.

Nominations	Don Martin	208/334-9498
Resolutions	Dennis Tol	705/623-3676
Audit	Glenn Phillips	406/444-2406
Program	Cay Goude	916/362-8373
Time/Place	Don Duff	801/625-5662
Bylaws	Tom G. Powell	303/484-2836
Membership	Pat Dwyer	406/587-9265
Awards	Don Martin	208/334-9498
Newsletter	Roger Ovink	503/752-4271
Riparian	Bruce Smith	307/382-5250
Endangered Species	Don Sada	702/784-6769
Editorial Guidelines	Bob Gresswell	307/344-7381
Fisheries Economics	Virgil Moore	208/334-3791
Habitat Inventory		
Proceedures	William Helms	801/750-2543
Public Lands	Dave Cross	916/244-1920
Water Development/		
Streamflow	Dudley Reiser	415/283-7077
(co-chair)	Tom Wesche	307/766-2143
Marine Fisheries	Lou Carufel	970/356-5229
Native American		
Fisheries	Frank Halfmoon	505/231-2326

1988-89 WDAFS EXECUTIVE COMMITTEE

President:	Pat Dwyer 27 Border Lane Bozeman, MT 59715
President-elect:	Cay Goude 10685 Jackson Road Sacramento, CA 95830
Vice-president:	to be decided — VOTE!
Secretary/Treasurer:	Don Chase 2043 North Bethel Olympia, WA 98506
Past President:	Al Mills 615 East Center Orem, UT 84057
National Nominating Rep.:	Richard Wydoski 9148 W. Maryland Place Lakewood, CO 80226
Newsletter Editor:	Roger W. Ovink P.O. Box 428 Corvallis, OR 97339

FISH SLIDES

Did you know that color slides of 660 fish species are available from AFS thanks to the Fish Photo Committee and Chairman Don Flescher? New slides are being added at regular intervals and the goal is to one day offer all 2200 fish species found in North American waters. The quality is excellent for educational or taxonomic purposes and to date, the Society has received orders for \$5,500 worth of slides. For a copy of the slide catalog send a self-addressed 9x12 inch envelope with 65 cents postage to American Fisheries Society, 5410 Grosvenor Lane, #110, Bethesda, MD 20814.

GOOD IDEA!

David Vanicek and other Cal-Neva Chapter leaders recently scheduled a meeting with California Fish and Game Director Pete Bontadelli to discuss how the Chapter and the Department might benefit from a closer association. They discussed how the

Chapter's annual conference might help meet training needs for Department fisheries personnel and how the Department might encourage AFS membership and professional certification. Cal-Neva is commended for this forthright approach to communicating the Chapter's activities, interests and potential services. It's a scenario that might profitably be repeated by almost every state chapter.

MEMBERSHIP

New member recruitment this September was the best in AFS history with 139 new recruits compared to a 12-year September average of 81. With attritional losses at a low point, 1988 already shows a net growth of 222 members with three months to go. Isn't there someone you've been wanting to sign up? Please use the enclosed application and become a PRO today!

HAIL TO THE CHIEFS!

Here are your 1988-89 Western Division AFS Chapter Presidents! Congrats to all the new chiefs — let's make this the best AFS year ever!

Kelly Hepler
Alaska Chapter
AK Dept. Fish & Game
500 S. Alaska Street, #B
Palmer, AK 99645
907/267-2220

Jim Burton
Arizona-New Mexico Chapter
Arizona Dept. Fish & Game
2222 W. Greenway Road
Phoenix, AZ 85023
602/942-3000

Bonneville Chapter
Ronald D. Creer
P.O. Box 513
Midway, UT 84049
801/654-0282

Bill Loudermilk
California-Nevada Chapter
Calif. Dept. Fish & Game
1234 E. Shaw Ave.
Fresno, CA 93710
209/222-3761

John F. Miesner
Colo. St. U. Stu. Chapter
Dept. Fisheries & Wdlf. Biol.
Colorado State University
Ft. Collins, CO 80523
303/491-5320

Wayne Hubert
Colorado-Wyoming Chapter
Wyo. Coop Fisheries Res. Unit
Box 3166
University of Wyoming
Laramie, WY 82071
307/766-5415

Hawaii Chapter
Alvin Katekaru
Hawaii Div. of Aquatic Resour.
1151 Punchbowl St., Rm. 330
Honolulu, HI 96813
808/548-3894

Krystyna H. Wolniakowski
Oregon Chapter
Ore. Dept. Environ. Quality
Water Quality
811 SW 6th Ave., Ex. Bldg.
Portland, OR 97204
503/229-6018

Humboldt Chapter
Mike Ward
P.O. Box 210
Arcata, CA 95521
707/826-7535

Glenn E. Phillips
Montana Chapter
Mont. Dept. Fish, Wdlf. & Pks.
Water Quality Bureau
Cogswell Bldg., Rm. A-206
Helena, MT 59620
406/444-2406

Howard Elder
New Mexico St. Univ. Chapter
New Mexico State University
P.O. Box 4901
Las Cruces, NM 88003
505/646-1544

Forest Olson
N. Pacific Internat'l Chapter
CH2M Hill, Inc.
777 - 108th Ave.
P.O. Box 91500
Bellevue, WA 9800-2050
206/453-5000

Portland Chapter
Mike Henry
7223 SW Tenino Lane
Tualatin, Or 97062
503/294-5840

Sacramento Chapter
Paul Bratovich
272 Fulweiler Ave.
Auburn, CA 95603
916/481-1710

Richard Grost
Univ. of Wyoming Student
Chpt.
University of Wyoming
c/o Michael Bozek
Dept. of Zoology
Laramie, WY 82071
307/766-2322

Idaho Chapter
Roy Heberger
c/o USFWS
4696 Overland Rd.
Boise, ID 83705
208/334-1931

INTERNATIONAL REGIONAL COMMITTEES

International Fisheries Section Regional Committees have been created to deal with problems, requests, issues, etc. brought to AFS attention from around the world. The committees will also serve as liaison with fisheries "institutions" in their respective regions. The regions, the committee chairmen, and their address/phone numbers are listed below. If you are interested in participating or have issues to discuss, please contact the Committee chairman or Section president Tapan Banerjee.

Region 1: Asia and the Pacific: Jim Reynolds,
4627 Harvard Circle, Fairbanks, Alaska 99709, 907/
474-7661.

Region 2: Caribbean and Latin America: Joan Holt,
Marine Science Institute, University of Texas, Port
Aransas, Texas 78373, 512/749-6716.

Region 3: Africa and the Middle East: Ken
Carlander, 2200 Hamilton Drive, #702, Ames, Iowa
50010, 515/294-5248.

Region 4: Europe and the USSR: Don Duff, 2029
Lincoln Circle, Salt Lake City, Utah 84124, 801/625-
5662.

JOB OPPORTUNITIES

NEVADA FISHERIES POSITION

Fisheries Management Biologist (Director): \$9.00 to \$12.00 per hour depending on qualifications and experience. The applicant must possess a B.S. degree in fisheries and have a strong background in limnology, botany, watershed management, hydrology and fish population dynamics. Note: Indian preference shall be given (25 CFR 272.44). Contact Summit Lake Paiute Tribe, P.O. Box 1958, Winnemucca, NV 89445. 702/623-5151. Date of Circulation, May 25, 1988.

JOB SOURCE

AFS/TWS JOBSource keeps plugging away and is available to help you find a first-time job, a better job, and if you are an employer, it will help you find the best employee. Call the toll-free number 1-800-727-JOBS for details. Costs are sharply reduced for AFS members.

THIS AND THAT AROUND THE WEST

DID YOU KNOW?

- Of the U.S. population, ages 6 and older, 58,428,000 went fishing in 1985. This represents 27% of the relevant population.

- Sport fishermen, ages 16 and older, spent \$28 billion to go fishing in 1985. This generated the following economic impacts:

- \$60 billion in industry output

- \$10 billion in wages and salaries

- 600,000 person-years of employment

- 800,000 jobs

- Sport fishermen, ages 16 and older, spent 976 million days fishing on 870 million trips in 1985. Of the days spent fishing, 84% were in freshwater and 16% were in saltwater. Of the 822 million days spent fishing in freshwater, 46 million days were spent on the Great Lakes.

- Freshwater fishing on man-made ponds or reservoirs accounted for 364 million days of fishing.

- The average fisherman, ages 16 and older, spent \$607 to go fishing in 1985, or \$29 per day.

- According to the Gallup Poll, sport fishing is the single most popular leisure activity among adult men and fifth among women.

- Approximately two-thirds of fishermen, ages 16 and older, are male and one-third are female.

- Of the 39 million freshwater fishermen, ages 16 and older, 16 million spent 342 million days fishing for black bass, the most popular target species.

Source: U.S. Fish and Wildlife Service, 1985 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, Draft.

FISH GROWTH PREDICTION ADVANCES

An innovative method of calculating fish growth may give fisheries managers a new tool for their trade. Minnesota Sea Grant researcher Sanford Weisberg has offered a solution to the problem of getting accurate estimates of how fish growth is affected by management or environmental changes. The goal is to try to learn about the growth of fish in the past. "There is a need to know how changes in fish management are changing the growth of fish," said Weisberg, a professor in the Department of Applied Statistics at the University of Minnesota. Inspired by the challenge of improving traditionally used, cumbersome and inaccurate

rate calculation methods, Weisberg has spent the last year and a half developing a streamlined statistical method that provides a more accurate picture of how fish grow.

Weisberg has developed a mathematical procedure for separating growth into age and environmental components. He combines the growth history of a fish with its age, determined by counting the annular rings. As a result, a certain year could be identified as a bad year for older walleye and a good year for younger walleye. "Somebody else would interpret why and how that happened," Weisberg said. "It could be that small walleye eat different things than big walleye." Weisberg's linear model might provide a way to determine what component of fish history is attributable to age and environment.

The application possibilities for this technique range from monitoring power plants, pollutants, water level and erosion, to determining the effects of management changes, environmental changes, or other influences on the environment. More specifically, the growth of a certain species of fish could be tracked. Weisberg says this statistical method could also be applied to trees and even census data.

For more information contact: Minnesota Sea Grant, 116 Classroom Office Building, University of Minnesota, 1994 Buford Avenue, St. Paul, MN 55108, 612/625-9288.

RIPARIAN FILMS AVAILABLE

Riparian area management video tapes are available from the BLM. David Young (801/896-8221) has three video tapes available to AFS members: "Story in the Stream — Macroinvertebrate Sampling," "Coordinated Range Management — Riparian Approach," and "Riparian Rehabilitation and Channel Modification." These are internal training films prepared by the Phoenix Training Center.

ENDANGERED RIVERS

America's ten most endangered rivers for 1988 have been announced by American Rivers, a non-profit organization devoted to preserving rivers and their landscapes. The organization noted that all ten rivers have outstanding but threatened fisheries. The

most threatened rivers are the following: South Platte (CO), Klamath (OR), Little Big Horn (WY), Greenbrier (WV), Platte (NE), Columbia (WA), Susquehanna (PA), American (CA), Animas (CO) and Black (NY)

According to American Rivers, each of these rivers is threatened by a dam, diversion, dredge and fill project, or similar public works proposal that would destroy much of the rivers' native fish and fishing opportunities.

SACRAMENTO CHINOOK

The Cal-Neva Chapter's attempt to have Sacramento River winter chinook listed under the Endangered Species Act, has moved out of the courts. The lawsuit, filed by the Sierra Club Legal Defense Fund on behalf of the Cal-Neva Chapter, has been temporarily halted while the National Marine Fisheries Service, reconsiders its original decision. The NMFS will review new data, including effects of the recent drought. In the out of court settlement, Cal-Neva agreed to the reconsideration subject to professional involvement in the review.

In the meantime, the Bureau of Reclamation announced the signing of the ten point plan for restoration of the chinook winter run fishery. The central point in that plan is additional water releases during the spring and autumn periods from Sacramento Valley reservoirs.

WHERE DO YOU FIT?

Thirteen generic fisheries positions have been tentatively identified and described by Ira Adelman and his University Programs Standards Committee. The draft position descriptions are generally in the public sector and when final will hopefully be used by institutions of higher learning to establish fisheries science education guidelines. The 13 generic fisheries titles are:

- Biological Assistant
- Fisheries Biologist I
- Fisheries Biologist II
- Fisheries Biologist III
- Fisheries Biologist IV
- Hatchery Fish Culturist
- Creel Clerk
- Marine Fisheries Specialist
- Fisheries Technician
- Water Development Technician
- Fisheries Ecologist

- Fish Pathologist

Do you fit? Ira would welcome constructive comment. His phone number is 612/624-3600.

PUT 'EM OUT TO PASTURE

A "Veteran Broodfish" program has been launched by the Texas Parks and Wildlife Department's Hatcheries Branch in an effort to focus attention on catch-and-release fishing as well as to call attention to the contribution the hatcheries make to fishery management in the state. Brooders of five species (largemouth and smallmouth bass, channel catfish, blue catfish and red drum) will be tagged and released back into the wild. The first 1,000 were released late in 1987. The internal tags have an external streamer inscribed with "veteran brooder," a broodfish number and the department's toll-free telephone number, 1-800-792-1112.

Anglers catching these fish are encouraged to write down the broodfish number and release the fish. Then, by calling the toll-free number, the angler will receive a history of the fish's production record and a copy of its "honorable discharge."

1989 BUDGETS

Ever wonder about the budgets of federal agencies? Here is a list of what Congress has given the land and water-related agencies for fiscal 1989:

BLM	\$706	million
FWS	\$457	million
NPS	\$1.002	billion
SCS	\$642	million
ASCS	\$2.073	billion
NOAA	\$1.244	billion
NMFS	\$168	million
EPA	\$5.2	billion
USFS	\$2.7	billion

CANADIAN DRIFT NET BAN

Canada's recent complete ban on the use of driftnets within the country's 200-mile fishery zone was welcome news to conservationists everywhere, since Canada's decision is expected to put pressure on other North Atlantic nations, principally in Europe, to take similar action.

"Driftnets are the single most destructive piece of gear in existence and they should be banned for any kind of fishery," Wilfred Carter, the president of the Atlantic Salmon Federation, told the director of the

National Coalition for Marine Conservation. His attitude is more than understandable in view of the fact that driftnet fisheries in the Atlantic and Pacific kill two salmon for every one they capture, making it a particularly inefficient and wasteful way to catch fish.

RESTORATION BUCKS

More than \$180 million will be made available to fund state fish and wildlife restoration programs this year through the preliminary apportionments of two Federal Aid programs administered by the Interior Department's U.S. Fish and Wildlife Service.

In announcing the preliminary figures, Secretary of the Interior Donald Hodel thanked America's hunters and anglers, saying, "Without them, wildlife as we know it today simply would not exist. The comeback of the wild turkey, the wood duck, native brook and cutthroat trout and many other popular species can be tied directly to restoration work funded through these programs." The programs are financed by hunters and anglers through Federal excise taxes on sporting equipment such as firearms, ammunition and fishing tackle; import taxes on fishing tackle and pleasure boats; and a percentage of motorboat fuel taxes.

DROUGHT PLANNING

Planning for droughts is occupying the attention of the Montana Chapter which is concerned about the devastating trout stream impacts of this year's drought compounded by poorly diluted municipal wastes, excessive domestic and industrial use and agricultural irrigation. They say that no mechanism exists for managing water during drought and have called on the Montana Governor to take the lead in getting water user groups together to begin planning for the future.

GREAT LAKES VIRUS

It's been identified as a virus and given a name — "epizootic epitheliotropic virus disease" (EEVD). And it's causing all sorts of problems for the Fish and Wildlife Service's and state's efforts at lake trout restoration in the Great Lakes (see issue #393 of the *SFI Bulletin*).

The symptoms of EEVD first appeared in lake trout hatcheries a few years ago. The virus has now been found in the Service's new Iron River Hatchery and Michigan's Marquette Hatchery. Because of the increasing problems caused by the virus, all fish from Iron River will have to be destroyed and the facilities

completely disinfected.

The impact on stocking programs will be significant in the short term, a loss of about 2.5 million fish in 1988. Sport anglers and charter boat operators will soon be realizing the effect. The service and the Great Lakes Fisheries Commission is hoping that the short term sacrifice will pay the long term benefit of at least controlling the spread of the virus. For further information, contact John Quam, U.S. Fish and Wildlife Service, 660 Federal Building, Ft. Snelling, Minnesota 55111, 612/725-3447.

WASHINGTON STATE FISHERY SUPPORT

A bi-partisan bill was offered by Representative Dan Sutherland of the State of Washington legislature directing the Washington Department of Fisheries to preserve, protect and perpetuate chinook, coho and Lake Washington sockeye salmon and sturgeon for sport fishing. The bill comes at the heels of an economic study undertaken by the State of Washington showing the much greater economic benefit of sport fishing to the state over commercial fishing.

ATLANTIC/PACIFIC SALMON CONNECTION

Washington's budding fish farming industry has decided its future lies with the Atlantic salmon, rather than Pacific salmon, says Conrad Mahnkin, the fish enhancement project manager of the National Marine Fisheries Service. Atlantic salmon has been found to grow faster and has a better survival rate than the Pacific salmon. Major new producers in Washington will go for Atlantic salmon because it has been easier to domesticate and the Atlantic salmon reared in Puget Sound is hardy and relatively disease-free when compared to the native Pacific salmon. Also, the Atlantic salmon attracts more price in the market. The smaller coho, a Pacific native, give a return of 75 cents to \$1.50 on the dollar, while the Atlantic salmon return is from \$3 to \$4.

WETLAND ADVANCES

Artificial wetlands are the focus of the Bureau of Mines' Environmental Technology Research Group in Pittsburg. The group is studying the potential that man-made marshes have for reducing toxic metal content in acidic mining waste streams. Some 80 artificial wetlands, most of which contain cattail vegetation, have been constructed for controlling coal

mine acid runoff to determine which systems work best to raise pH and remove iron and manganese. The research group believes the wetlands will also help eliminate cadmium, lead, zinc and other toxic metals from mines runoff.

For further information contact: The Bureau of Mines Research Center, Cochran Mill Road, P.O. Box 18070, Pittsburgh, PA 15236.

THE PRICE OF CLEAN

Americans are paying more for clean water, and the price tag is continuing to rise according to a Washington, D.C. environmental attorney. "Annual expenditures by private industry to curb water pollution have been estimated at between \$2.5 billion and \$4 billion. Since 1972, governments at the local, state and federal levels have spent about \$75 billion on sewage plants to reduce water pollution," said Larry J. Silverman, former executive director of the American Clean Water Association and the environmental Task Force. According to Silverman, public opinion polls show people support clean water and are willing to pay for it. This public support will be severely tested in the next five to ten years as costs continue to rise and federal assistance is cut, he said.

For more information contact TVA News Desk, 3D92, 400 West summit Hill Drive, Knoxville, Tennessee 37902, 615/632-6000.

ENVIRONMENTAL HOTLINE

A legislative hotline, covering environmental issues has been installed by the National Wildlife Federation. It provides current information on an array of environmental issues from acid rain to wetlands protection. Updated twice weekly, the recorded message is put together by the Federation attorneys, lobbyists, scientists and economists. Want to know what's happening in Congress, courts or the federal agencies? Call 202/797-6655.

MEETINGS, SEMINARS, SHORT COURSES & PUBLICATIONS

1989 ANNUAL CONFERENCE UPDATE

The Western Division meeting will be held this year in Seattle, WA, at the Seattle Shearaton Hotel &

Towers. The retreat will be on July 3, Don Chase is making fantastic arrangements for the retreat. The business meeting is currently planned for July 4 with the general meeting scheduled from July 5 through July 7. We also may hold a continuing education course on July 8.

WDAFS 1989 CALL FOR PAPERS

Meeting dates are July 4 through July 8, 1989 in Seattle, Washington. Send abstracts by April 1, 1988 to Cay C. Goude, 10658 Jackson Road, Sacramento, California 95830, or call 916/362-8373 (home) or 916/978-4613 (work).

TRAVEL ALERT!

Members are advised that Delta Airlines has been chosen as the Official Airline for the Western Division's Annual Meeting in Seattle, July 4-7. Travelers flying Delta will be eligible for discounts of 40% off regular coach fares or 5% off Delta's lowest published fares. In addition to airfare discounts, the Western Division will earn a free round-trip ticket for every 40 persons who fly Delta to Seattle during the inclusive travel dates of July 1-9. For your travel to be eligible for the discounts and free tickets, you or your travel coordinator must book by calling the following toll-free number: 1-800-241-6760. Please refer to file number M0052. So help yourself to some good airfares and help the Western Division earn free tickets. Fly Delta to Seattle!

THE CALENDAR

Jan. 4-5, 1989. Canadian Conference for Fisheries Research. Quebec City Aquarium, Quebec City, Quebec. For info: Dr. Louis Fortier, GIROQ, Dept. of Biology, Laval University, St. Foy, PQ G1K 7P4, Canada.

Feb. 2-3, 1989. Sixth Pacific Coast Herring Workshop. Northwest and Alaska Fisheries Center, Seattle, Washington. For info: Greg Bargmann, Washington Dept. of Fisheries, Bin C 15700, Bldg. 4,

CALENDAR CONTINUED

7600 Sand Point Way, NE, Seattle, WA 98115. 206/545-6598.

Feb. 12-16, 1989. Aquaculture '89. The Westin Bonaventure Hotel, Los Angeles, California. For info: Conference Headquarters, Crest International, 940 Emmett Ave., Suite 14, Belmont, California 94002.

February 16, 1989. Twenty-Fourth Canadian Symposium on Water Pollution Research, Burlington, Ontario. Contact Jean Stafford, Conference Manager, Canadian Association of Water Pollution Research and Control, Waste Technology Center, 867 Lakeshore Road, P.O. Box 5050, Burlington, Ontario L7R 4A6.

Spring 1989. 1989 National Annual Meeting, American Society for Surface Mining and Reclamation and Canadian Land Reclamation. Calgary, Alberta, Canada. Contact William T. Plass, American Society for Surface Mining and Reclamation, 21 Grandview Drive, Princeton, West Virginia 24740.

April 2-7, 1989. Second International Conference on Marine Debris. Alemona Americana Hotel, Honolulu, Hawaii. For info: Richard S. Shomura, Southwest Fisheries Center Honolulu Laboratory, 2570 Dole St., Honolulu, Hawaii 96822. 808/943-1229.

April 16-18, 1989. 14th Symposium on Aquatic Toxicology and Hazard Assessment. Atlanta Hilton, Atlanta, Georgia. For info: Wayne G. Landis, CRDEC, Aberdeen Proving Grounds, Maryland 21010-5423. 301/671-2764.

May 9-12, 1989. National Symposium on Practical Approaches to Riparian Resource Management. Holiday Inn, Billings, Montana. For info: Glenn Phillips, Montana Dept. of Fish, Wildlife and Parks, Capitol Station, Helena, Montana 59620, or call Marilyn Goetzinger at 406/444-2406.

May 21-27, 1989. Annual Meeting of the Early Life History Section, Merida, Mexico. Contact Andrea Frank, Mote Marine Lab, 1600 City Island Park, Sarasota, Florida 34236.

Summer 1989. The American Society for Environmental History and the Northwest Association for Environmental Studies invites you to propose a presentation of your work at what promises to be an

interesting conference for all professionals in environmental work. The conference, Solving Environmental Problems: The Past as Prologue to the Present, will be held at the Evergreen State College, Olympia, Washington. Contact C. Simila-Dickinson, Lab 1, The Evergreen State College, Olympia, Washington 98505, 206/866-6000.

Sept. 18-23, 1989. International Symposium on Coldwater Fish Culture. Beijing, China. Abstracts for the symposium are due February 28, 1989. For info: Mr. Huang Kejia, The China Society of Fisheries, 31 Minfeng Lane, Xidan, Beijing, China.

October 28-November 2, 1989. Society of Environmental Toxicology and Chemistry 10th Annual Meeting. Toronto, Ontario, Canada. Contact: Peter V. Hodson, Great Lakes Laboratory for Fisheries and Aquatic Science, Canada Centre for Inland Waters, Box 5050, Burlington, Ontario, L7T 2K2, Canada.

December 6-9, 1989. Due to expanded interest, The Management of Contaminated Urban Fisheries Symposium has been rescheduled to current date. For more information, contact Co-Chairs Bob DiStefano of the Missouri Department of Conservation, 1110 College Avenue, Columbia, Missouri 65201 or Dr. Paul Baumann, U.S. Fish and Wildlife Service, Ohio State University, 1813 N. High St., Columbus, Ohio 43210.

AQUACULTURE COMPUTER COURSE

"Computer Use In Aquaculture" is a two day course designed for the novice computer user. That is, only knowledge of how to plug in the computer is required. The course starts with a discussion of computer spreadsheets, specifically Lotus 123, and ends with some examples of how spreadsheets are being used in aquaculture. The course is open to anyone attending the Aquaculture '89 Conference. A separate registration fee of \$400 should be forwarded to: Crest Organization, 940 Emmett Avenue, Suite #10, Belmont, California 94002, 206/753-5723

NON-POINT SOURCE POLLUTION

"Monitoring and Non-Point Source Pollution." An advanced training program for fisheries, wildlife, hydrology and range and water quality specialists. Courses to be offered in Reno (March 6-10, 1989) and

Denver (April 10-14, 1989). For more information contact Don Chapman Consultants, 3180 Airport Way, Boise, Idaho 83705, 208/383-3401.

EXPERT WITNESS COURSE

An "Expert Witness Seminar," sponsored by the California Nevada Chapter, is a two-day course designed to teach environmental professionals how to work effectively with lawyers in legal and litigation environments. The course will be held January 26-27, 1989 in Eureka, California and February 16-17, 1989 in Sacramento, California. To enroll for the Eureka course, call or write to Joe Lesh, California Department of Fish and Game, Marine Resources Laboratory, 619 Second Street, Eureka, California 95501, 707/445-6493 before December 15, 1988. To enroll for the Sacramento course, call or write to Chuck Knutson, 3400 College Ave., Sacramento, California 95818, 916/445-6294 (7 AM to 3:45 PM).

SCIENTIFIC WRITING

How to Write and Publish A Scientific Paper, 3rd Edition, \$14.95 from Oryx Press, 2214 North Central at Encanto, Phoenix, Arizona 8504-1483. 1-800-457-ORYX.

SAMPLING/STATISTICS WORKSHOP

In 1989, the Cal-Neva Chapter of the American Fisheries Society is hosting a 5-day workshop on Sampling Techniques for all professional fisheries and wildlife biologists interested in improving their understanding of basic sampling and statistical techniques. The course will be given January 9-13, 1989 in Sacramento, California.

Cost of the course is \$250 per person. Each participant will need a calculator with a memory and a standard deviation or variance key. Call or write Chuck Knutson, 3400 College Avenue, Sacramento, California 95818, 916/445-6294. Enrollment deadline is December 15, 1988.

BILLFISH NEWS

The compelling need for greater global cooperation to conserve wide-ranging species of marlin and swordfish in the face of equally widespread uncertainty as to the health of these fisheries was the overriding theme of the recently concluded International Billfish Symposium, organized by the National Coalition for Marine Conservation and co-sponsored by a dozen fisheries organizations from the United States,

Mexico and Japan.

More research into the biology, behavior and distribution of billfish (marlin, sailfish, swordfish and spearfish), the establishment of a global network for gathering data to assess the condition of the stocks, and higher priority for billfish concerns within regional and ocean-wide management regimes were among the recommendations made at the Symposium, held August 1-5, 1988 in Kaulua Kona, Hawaii.

The complete proceedings of the International Billfish Symposium will be published in two volumes by the National Coalition for Marine Conservation. For more information on the Symposium write: Ken Hinman, Symposium Coordinator, c/o NCMC, P.O. Box 23298, Savannah, GA 31403.

AQUATIC RESOURCE CURRICULUM

The Aquatic Resources Education Council has developed a curriculum and instructors' manual which will qualify for Wallop-Breaux funding and be utilized by the individual states. The manual is also designated for use by schools, civic organizations and others who want to teach about fishing and aquatic resources.

The manual is \$10.00 (U.S.) for government agencies or in quantities of 20 or more. All other orders are \$20.00 per copy. For more information contact Order Department, Kendall Hunt Publishing Company, 2460 Kerper Blvd., P.O. Box 539, Dubuque, Iowa 52001, 800/338-5578.

BIOSIS CONNECTION

The Biosis Connection is available for online access. This complement to Biological Abstracts allows you to search by computer for information concerning your field of interest. Kits describing the service, procedures and costs are available from Biosis Connection, 2100 Arch Street, Philadelphia, PA 19103. 215/587-4800.

STANDING CROP PREDICTION

"Models That Predict Standing Crop of Stream Fish from Habitat Variables: 1950-85" is a new Forest Service technical report by Kurt Fausch, Cliff Hawks and Mit Parsons that is available free by writing USDA-PNW, 319 SW Pine Street, P.O. Box 3890, Portland, OR 97208 and asking for PNW GTR-213. It is a review of mathematical models and the assumptions and problems that have been associated with them in the past.

AQUACULTURE CALCULATION HANDBOOK

An excellent handbook for common calculations in finfish aquaculture has been prepared by Gary Jensen, association aquaculture specialist at the LSU Cooperative Extension Service, Knapp Hall, Baton Rouge, Louisiana 70803, 504/388-4141. Copies are available at \$3.60 each by writing Ms. Dixie Irwin, Publications, Room 128 at the above LSU address.

AQUATIC HABITAT INVENTORY INFO

The Western Division is offering their book *Acquisition and Utilization of Aquatic Habitat Inventory Information* free to any individual or organization that is willing to pay postage and handling costs. The book is a proceedings of a 1981 symposium and is an excellent technical reference document that details various current sampling methodologies and evaluation techniques. We will mail case lots of 20 books for \$13.00 anywhere in the United States.

SALMON INFORMATION

Salmon Production, Management and Allocation: Biological, Economic and Policy Issues is available from the Oregon State University Press.

The authors of this collection of twenty papers examine issues ranging from salmon ecology to social

policy. They write from a variety of perspectives to evaluate current policies in salmon production, management and allocation; to address issues of importance to the integration of aquaculture in the overall production of salmon; and to explore new options.

To receive your copy of *Salmon Production, Management and Allocation: Biological, Economic and Policy Issues* send \$29.95 (plus \$2.00 for postage and handling, please) to 101 Waldo Hall, Corvallis, OR 97331

ART ALERT!

Prints of Bob Hines' painting "Lake Trout" are available from the Fish and Wildlife Outdoors Club (P.O. Box 45, Federal Bldg., Fort Snelling, Minnesota 55111). The proceeds are used exclusively for sponsoring grade school classes to receive the Michigan United Conservation Club's fine environmental education monthly, *Tracks*. The full-color print is a beautiful rendition and is available signed, numbered, and remarked for \$75, shrink-wrapped; signed and numbered for \$50, shrink-wrapped; or unsigned, not numbered for \$20, rolled in a tube. The print measures 15 1/2" by 19 1/2", exclusive of the border.

Editor's Note: This is a bit out of our geographical area but I'm sure it's a fine print and a good cause.



Symposium on Indian Fisheries Announcement and Call for Papers and Posters. Sheraton Towers Seattle, Washington July 5, 1989

Scope

The symposium will provide a review of tribal programs and issues. Sessions will focus on tribal fisheries on and off the reservations, ceremonial, subsistence and commercial fisheries. Included in these discussions will be tribal involvement in licensing fishermen and Dingell-Johnson/Pitman-Robertson funding. In addition, sessions will be held on tribal sovereignty, culture, endangered species and Indian water rights. Tribal programs in research, fish production and habitat protection and enhancement will be discussed.

Abstracts for papers and posters should be limited to 200 words and submitted no later than December 15, 1988 to:

Frank Halfmoon, Chairman
Symposium on Indian Fisheries
P.O. Box 14929
Portland, OR 97214
503/231-6749

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Application for 1989 Membership

please complete and mail with payment to:
American Fisheries Society
5410 Grosvenor Lane, Suite 110
Bethesda, Maryland 20814-2199

Date _____ Recommending Member _____

Name _____

Address _____

City _____

State/Providence _____ Zip _____

County _____ Membership Year* _____

If applicant is a student as defined below, the teacher signs here: _____

Name of institution where student is enrolled _____

Boni fide students of fisheries subjects are eligible for Student membership (six year maximum). Persons employed full-time not eligible. Teacher endorsement required (see above).

To complete the form, choose the appropriate statement:

ACTIVE INDIVIDUAL Membership*:

- Regular (\$42.00 (other than U.S., \$45.00)
- Student \$21.00 (other than U.S. \$23.00)
- Retired \$21.00 (other than U.S. \$23.00). Regular members upon retiring at age 65.

*Members receive bimonthly *FISHERIES* and annual Membership Directory. All memberships are for a calendar year. Unless requested otherwise, new member applications received January 1 through August 31 are processed for full membership that calendar year (back issues are sent). Those received September 1 or later, are processed for full membership beginning January 1 of the following year. Please be sure to indicate your preference.

Fish PRO Club Professionals Recruiting Others

As a member of the American Fisheries Society, you recognize how important AFS is to you as a professional and how much the Society is doing to influence our profession, fisheries science and resource management. However, are you aware that only about one-half of the fisheries professionals in North America belong to AFS? Did you know approximately 30 percent of Chapter members *are not* members of the Society?

Therefore, the AFS Executive Committee has sanctioned the establishment of the AFS PRO Club — Professionals Recruiting Others. This incentive program will work in the following manner: once you have recruited a new individual, associate or library member for AFS, you are a new member of the current year's PRO Club. When you recruit ten members, you become a life member of the PRO Club and will receive a gold AFS PRO Club pin.

So share in the AFS experience — strengthen your professional society — join the AFS PROs!!!

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Greetings!*