

THE TRIBUTARY

A Newsletter of the Western Division,
American Fisheries Society



Volume 14, No. 3/July 1989

THE PRESIDENT'S CORNER

GREETINGS FROM THE PRESIDENT!

Many things have happened since the last Tributary. I attended the Utah annual meeting which was a smashing success. President Oscar Creer and his team have really got that chapter going. I was unable to attend the Humboldt meeting but AFS President Bob White was there and he reported that the forest practices discussion was very productive. A very hot issue with nationwide implications. Newly elected Vice President Dave Burns attended the Idaho meeting.

All of the Western Division chapters are strong and productive. It is this kind of enthusiasm and dedication that is making the society what it is today.

Secretary-treasurer Don Chase got to the Colorado-Wyoming and the North Pacific International chapter meetings. Unfortunately we were unable to make the Oregon meeting. All of the Western Division Chapters are strong and productive. It is this kind of enthusiasm and dedication that is making the society what it is today.

The mid-term Excom Meeting at Corpus Christi, Texas was productive and effectively run by President Bob White and the retreat was educational and gave us a chance to voice our opinions about the issues at hand. Action items which were discussed included a decision to increase the publication frequency of *Fisheries* from 6 to 12 issues a year and procedures

were established for AFS endorsements of political candidates. If any of you would like more information or a copy of the minutes please contact me.

The Riparian Habitat Workshop held in Billings was a resounding success. Bob Gresswell and Chris Hunter and their group of merry men and women are to be congratulated. Presented papers were required to be in publication form prior to the meeting and were published in the proceedings which was included in the registration fee. The Proceedings are available for \$15.00 from Riparian Resource Management Symposium, P.O. Box 22561, Billings, Montana 59101.

I hope to see many of you at the Western Division Annual meeting. President Elect Cay Goude has done a great job getting the Technical Session together. Thom Johnson, Trade Show Chairman, has developed the biggest and best show the Division has ever had. The theme for the meeting is "Sharing A Common Legacy." Frank Halfmoon has put together a Symposium on Native American Fisheries issues which will be concurrent with the WDAFS/WAFWA meeting. There will be something for everyone. Be sure to register ASAP to insure a place for the July 4 Harbor Tour.

*Pat Dwyer, President WDAFS
27 Border Lane, Bozeman, MT 59715*

SOCIETY NEWS

ANNUAL MEETING UPDATE

Over 700 technical papers have been submitted for our annual meeting program in Anchorage, Alaska. Of these, Program Chairman Randy Bailey reports that 480 are for special sessions and 250 are for contributed papers. We have never had this kind of interest before and Randy and Christine Moffit are doing their best to accommodate as many of the papers as possible. It's going to be a great meeting!

CENTRAL VALLEY RESOLUTION

The Western Division has passed a resolution concerning the fisheries resource of California's Central Valley and forwarded it for the Society's attention. The Division recommends that a moratorium be placed on any new water development in the Central Valley until a concerted effort is initiated by the water development agencies to conserve the native fish and wildlife. The resolution originated with the California-Nevada Chapter.

ATTA BOY ERIC!

Dr. Eric P. Bergersen was presented with the Award of Excellence by the Colorado-Wyoming Chapter of the American Fisheries Society at their annual meeting held March 1, 1988. He was recognized for his diverse research interests which have demonstrated the invaluable role fish biologists play in solving problems in a wide range of aquatic issues. He was also recognized for his positive influence on the students he has guided through the fisheries biology graduate program at Colorado State University. And finally he strengthened the fisheries program at the Unit and demonstrated its unique role in research, education and technical services during a period of high Unit leader turnover and threat of program extinction. He has successfully juggled myriad interests, personalities and programs of several state, federal and tribal agencies to maximize the cooperative aspect of the Unit.

WORLD FISHERIES CONGRESS NEWS

The World Fisheries Congress is being planned through the joint efforts of fisheries and resource organizations worldwide. The American Fisheries Society provides administrative support for the congress. Approximately 1500 participants are expected at the Spring, 1991 meeting. Thirty-four fisheries and natural resource organizations worldwide have already agreed to cosponsor the World Fisheries Congress.

Dr. Larry Nielsen has been named chairman of the Steering Committee for the World Fisheries Congress. Nielsen replaces Dr. Tapan Banerjee, who is taking an assignment in Finland. "Dr. Banerjee's strong commitment to the WFC has transformed the idea into a working reality. The WFC appreciates his past efforts and the Steering Committee is looking forward to his continued participation and help," stated Nielsen.

Also joining the Steering Committee are John G. Woiwode, Aqua Matrix, Inc., Dr. C. Papaconstantinou, National Center for Marine Research-Greece, Steve

Moyer, National Wildlife Federation-United States, John Cooper, International Scholars for Environmental Studies, Myron Humeniuk, Resource System Management International and Dr. Robert G. Otto, R.G. Otto and Associates.

A call for papers and a brochure with specific details about the congress will be available in summer, 1989. For more information contact World Fisheries Congress, 5410 Grosvenor Lane, Suite 110, Bethesda, MD 20814-2199. Telephone 301/897-8616 or fax 301/897-8096.

AFS IS GROWING LIKE A WEED!

Final 1988 membership figures are in and show a record setting gain of 526 members. The monthly recruiting record, Section and Division membership and 1988 membership by category are listed below. All membership committee members may take a bow!

	AFS Division Memberships				
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Northeast	1046	1053	1083	1070	1126
N. Central	1747	1512	1543	1596	1648
Southern	1727	1744	1806	1830	1960
Western	<u>2364</u>	<u>2458</u>	<u>2577</u>	<u>2553</u>	<u>2716</u>
TOTALS	6611	6767	7009	7051	7450

TRAVEL ALERT! 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 and the National American Fisheries Meeting in Anchorage, September 2-8. Travelers flying Delta will be eligible for discounts of 40 percent off regular coach fares or 5 percent off Delta's lowest published fares. In addition to air fare 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 or Anchorage between September 1-10. 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.

Help yourself to some good air fares and help the Western Division earn free tickets.

Fly Delta to Seattle and Anchorage!

SHOW YOUR CONCERN

Fishery budgets remain under attack in the Bush budget which at first did not reverse Reagan's proposal to cap FWS Wallop/Breaux funds at \$100 million and still proposes to cut the NMFS programs by 40 plus percent. AFS has responded with letters to Congress protesting these gross cuts. In response largely through efforts of AFS member Ray Scott, President Bush has intervened at OMB which has rescinded the proposal cap on W/B funds. A good start but we shouldn't stop there. We urge all the units of AFS to get involved reminding the administration of the tremendous value of our fishery resources and the need for Federal government's involvement in their protection.

JOBSOURCE SUPPORT FROM THE EAST

The New York Chapter has provided a \$500 match to the Education Section's JOBSource challenge! The funds will provide much needed partial support to have JOBSource at the Anchorage annual meeting career center. The database is carrying 79 current paid fisheries announcements and is continuing to build slowly. Other subunits should consider emulating the New York Chapter.

THIS AND THAT AROUND THE WEST

NORTH PACIFIC SALMON NEWS

The United States and the Soviet Union have agreed to work more closely in an effort to curb illegal salmon fishing in international waters of the Pacific Ocean. Officials indicated that negotiators from the two countries had decided that illegal salmon fishing on the high seas by other nations represented an "irrational and wasteful harvesting method and that all efforts should be taken to prevent the unauthorized possession, harvest, transport and sale of salmon in the North Pacific."

In other news, SEACOPS, a new, Alaska-based organization attributes the increase in "net-marked" salmon and the decline in salmon catch to an ever-expanding Asian squid fishery in the North Pacific. SEACOPS is a non-profit, grassroots coalition of sport and commercial fishermen dedicated to eliminating the high seas interception of North American salmon and steelhead by drift nets.

SEACOPS reports that the North Pacific Asian squid fleet is the world's largest fishing fleet consisting of 1,000 large Japanese, Taiwanese and Korean drift net fishing vessels. Each vessel reportedly fishes 20-60 miles of mono-filament drift net daily. An estimated total of 2,000,000 miles of net was fished during the 1988 season. While harvesting several hundred million squid, many of these high seas fishermen also are alleged to illegally catch millions of immature North American salmon and steelhead. SEACOPS estimates that over 200,000 three-pound steelhead are killed annually by the high seas fleet. In addition, tens of thousands of porpoises and dolphins are reported to be killed annually by these high seas drift net fleets. In

1987, eighty seven Taiwanese drift net vessels reportedly caught over 465 tons of sailfish, swordfish and marlin.

The goal of SEACOPS is to apply immediate political and legal pressure on governmental representatives of the U.S. and Canada for action to protect future salmon and steelhead runs.

For additional information, write or phone SEACOPS, 700 Water Street, Upper Ketchikan, Alaska 000-9, 907/225-8004.

NOT OVER YET?

As a hydrologic event, the drought of 1988 is not yet over. Almost 40 percent of the streams in the United States had below-normal stream flows during October, according to Tom Ross, U.S. Geological Survey. The combined flow of "the Big Three" rivers (the Mississippi, the St. Lawrence, and the Columbia) averaged about 22 percent below the long-term October median, but well above the record low flows of October 1936. The most pronounced October drought occurred in the West, where more than 53 percent of the Geological Surveys' stream flow monitoring stations reported flows below normal, followed by the Great Lakes Region (46 percent). But just 28 percent of reported flows were below normal in the Northwest.

NEW SEWAGE TECHNOLOGY

Sewage Treatment Without Chlorine: A joint effort of the National Water Research Institute and Trojan Technologies as resulted in sewage treatment process that uses ultraviolet light to kill bacteria and viruses in

sewage effluent. Adoption of the new technology could have a number of environmental benefits, including a reduction in the use of chlorine and ozone-destroying chemicals and the reduced threat of chlorine spills. Contact J. Carey, National Water Research Institute, P.O. 5050, Burlington, Ontario L7R 4A6.

FANTASTIC IDEA!

Public opinion surveys have confirmed that the overwhelming majority of Canadians believe the individual must take personal responsibility if we are to ensure the ultimate survival of the planet. Canadians are prepared to pay more for products like biodegradable garbage bags and diapers and plastic foam packaging that does not degrade the ozone layer. The Canadian government determines those products which merit an environmental seal of approval. A logo will be used to identify environmentally friendly goods and services in virtually all retail outlets. Contact Gordon Harris, Environmental Protection, Communications Directorate, Environment Canada, Ottawa, Ontario K1A 0H3.

IDAHO WQ AUDIT

The Idaho Water Quality Bureau and cooperating agencies have completed the field work on the 1988 Forest Practices Water Quality Audit. Forest practice refers to activities associated with logging and include timber harvest, road building, use of chemicals and slash disposal. These practices were examined to assess their compliance with the best management practices, the effectiveness of the BMPs in the protection of water quality, the impact of the project and the condition of the stream. The audit is currently in preparation. If you wish to be placed on the mailing list to receive the report, please notify Geoff Harvey, Water Quality Bureau/IDHW, 450 W. State St., Boise, Idaho 83720.

A CRYIN' SHAME

For the first time, all of Michigan's inland lakes should be assumed to contain fish that are unsafe to eat in large amounts, according to a warning issued by the Michigan Health Department. Bass, walleye and many other game fish from these waters are suspected of containing unsafe levels of mercury and should be eaten only in limited quantities.

The advisory, which suggests continued restrictions on the eating of salmon, trout and some other fish from parts of the Great Lakes, will be printed in the 1989 Fishing Guide distributed to the state's more than 1 million licensed sports anglers.

The agency also stiffened warnings that anglers limit how much dioxin-tainted game fish they eat from the Saginaw and Tittabawassee Rivers downstream of Midland.

The new blanket mercury advisory applies to some of the state's most popular game fish, including largemouth and smallmouth bass, walleye, northern pike and muskie of any legal size. Also included are perch, rock bass and crappie longer than 9 inches.

Not more than one meal a week of these fish should be eaten, according to the new warning. In addition, the health agency says women who intend to have children, nursing mothers and children under age 16 should eat no more than one meal a month of the fish. *(Newhouse News Service)*

WATER BUDGETS EXPANDED

The U.S. Environmental Protection Agency has budgeted \$307.9 million for its water quality program in fiscal 1990, a \$21.1 million increase from 1989. The agency will focus on programs that address pollution problems in the country's estuaries, near coastal waters, wetlands, oceans, the Great Lakes and Chesapeake Bay. The 1990 budget includes \$71.8 million to address these problem areas, an increase of about \$9.3 million over 1989.

COOPERATION MAKES IT HAPPEN

The Washington Water Power Company (WWP) has recently joined forces with local bass clubs and the Washington Department of Wildlife (WDW) to enhance fish habitat in Long Lake Reservoir (Spokane, Washington). The enhancement project entails deploying artificial reefs in 25-30 feet of water which are intended to provide deep-water protective cover for juvenile game fish during periods of winter drawdown. Each reef will be approximately 500 feet in length and will be composed of 100 weighted rebar modules with tree branches lashed to them.

Funding for the artificial reefs was secured through both state and private funds. WWP provided the initial seed money to get the project started, while WDW habitat enhancement funds will be used to fund the remainder of the four year program. Local bass clubs are supplying the majority of manpower support.

By working cooperatively, all involved parties were able to undertake a project which would have been too large for any one group to attempt. For further information contact Daniel E. Pfeiffer, Fish and Wildlife Biologist, Washington Water Power Company, P.O. Box 3727, Spokane, WA 99220.

FISH SPILL AGREEMENT

On April 10, state and federal fishery agencies, Indian tribes and the Bonneville Power Administration signed an historic 10-year agreement to protect fish by spilling additional water at Lower Monumental, Ice Harbor, John Day and The Dalles dams.

During the spring and summer migrations, juvenile salmon and steelhead will ride this "spill" to avoid turbine intakes and pass the dams more safely. Without spill, these fish pass through the dam's turbines and many are killed. Spill is costly, as it uses water that would otherwise be used to generate electricity. Therefore, it is considered an interim measure until permanent and effective bypass facilities are operating at the dams.

NEW FUEL SOURCE?

Canada is looking to corner the market in converting sewage sludge into a synthetic fuel. Sludge disposal accounts for as much as 50 percent of the average municipality's cost of operating wastewater treatment. The oil from sludge technology could revolutionize the way municipalities around the world cope with waste. Contact H. Campbell, Wastewater Technology Centre, P.O. 5050, Burlington, Ontario L7R 4A6 for more information.

CLEAN WATER ACT PROGRESS?

A new report by the General Accounting Office (GAO) states that for 16 years the EPA has all but ignored a federal law requiring strict standards to limit water pollution. While the EPA and states have upgraded sewage and industrial waste treatment, that takes care of only part of all water and pollution.

The 1972 Clean Water Act requires more, the report says, states must identify polluted waters, set stringent pollution limits and take whatever steps are necessary to make sure those limits are not exceeded. Sometimes the steps are slow and politically unpleasant — such as imposing regulations on agriculture or development. Runoff of fertilizers, pesticides and manure are significant sources of pollution, as are the chemicals and debris that wash from urban areas and construction sites.

States were to have pollution limits for their most polluted waters by April 1974. To date, Washington has identified 173 bodies of water as polluted, but has set pollution limits for only one. Oregon has identified 73 polluted waters and, because of a lawsuit by an environmental group, has started to set pollution limits on 11 of them. Idaho has identified 172 polluted waters

and Alaska 184, but neither state has set pollution limits for these waters. If the states don't do their job, the law requires the EPA to take over.

AQUACULTURE PRODUCTION

In 1985, the last year in which complete figures are available, North America (the U.S. and Canada combined) produced about 390,000 metric tons of fish and shellfish through aquaculture. In comparison, Taiwan, a country only a tiny fraction of the size of North America produced nearly 660,000 metric tons of cultured seafood. China led the world in aquaculture production with 2.75 million metric tons, followed by Japan (1.1 million metric tons) and India (850,000 metric tons). Combined world production of all fishery products through aquaculture totalled about 10.6 million metric tons which is greater than total U.S. fishery production.

ARTIFICIAL REEF MANAGEMENT

The Sport Fishing Institute's Artificial Reef Development Center (ARDA) has released its study "Artificial Reefs and Fishery Conflicts: Problems and Opportunities for the Sport Fishing Industry." The ARDC undertook this study because of conflicts on artificial reefs between commercial and recreational fishing interests. Reef developers ranging from state fishery officials to private sport fishing clubs petitioned the ARDC for basic information on methods to deal with reef conflict issues.

To determine the range and extent of artificial reef conflicts, the ARDC conducted a nationwide survey of artificial reef coordinators. Results from the survey showed that recreational bottom fishermen are the most frequent users of artificial reefs, followed by: consumptive sport divers (spear fishermen); recreational fishers (troll fishing); charter boats; non-consumptive sport divers (photographers); headboats; commercial hook-and-line fishers; pier/shore fishers; and commercial trap, longline, gillnet, trawl and purse seine fishers. Nine of the 16 states (56%) surveyed have conflicts over artificial reef use. The survey also indicated that the groups most likely to be in conflict over artificial reef use were sport divers (both consumptive and nonconsumptive) and recreational fishers (both bottom fishers and trollers).

Management measures are needed to protect the resource from over-harvest. Washington State and North Carolina have regulations which allow for the closure of reefs deemed to be over-fished. However, no other states have such management options and

neither North Carolina nor Washington State have yet exercised their closure authority. To further complicate matters, states have no official management jurisdiction over artificial reefs in Federal waters. Reefs in Federal waters are under the jurisdiction of the National Marine Fisheries Service. Artificial reefs in Federal waters, other than those that have been designated as Special Management Zones, currently have minimal management regulations or policies, besides size limits, that protect them from over-harvest. Although states have had some success with user group education to stress wise use of reef resources, more effective ways to manage these resources are needed.

If measures such as temporary closures and rotation of reefs, user specific reefs and catch-and-release fishing are not strongly encouraged by resource managers, the next steps will probably be stricter bag and size limits or a total closure of the fishery. Measures such as these require enforcement. However, the National Marine Fisheries Service's 1989 budget has proposed cuts of over 40 percent. How would they be able to undertake the massive effort of enforcing bag and size limits on artificial reefs without the personnel to do so? They obviously could not and the need for voluntary management measures by all reef user groups is thus emphasized.

The Artificial Reef Development Center serves as a national clearing-house of artificial reef information. For more information contact Stephen Phillips, Director, Artificial Reef Development Center, 1010 Massachusetts Avenue NW, Suite 100, Washington, D.C. 20001, 202/898-0770.

DAM BYPASS SYSTEMS URGED

Northwest Power Planning Council Chairman Tom Trulove urged Congress to appropriate \$9.9 million for fish bypass systems at dams on the Columbia River in testimony last month in Washington, D.C.

Testifying before the U.S. Senate and House Appropriations Subcommittee on Energy and Water Development, Trulove said that screens and other facilities that deflect fish away from dam turbines would mean higher fish survival rates and more power generated in the Northwest. "These new and improved facilities are expensive, but they are needed to fulfill a long-delayed debt to the past," Trulove testified. "Funds would be appropriated to the Corps of Engineers, but would be fully repaid with interest over the life of the facilities by rate payers in the Pacific Northwest." Trulove urged Congress to reinstate money for

bypass systems in the U.S. Army Corps of Engineers' budget for Fiscal Year 1990.

Without the bypass facilities, each of the six major dams on the Columbia River kills between 10 and 30 percent of the fish that reach them on their downstream migrations. The interim solution of spilling water over the dams to help fish avoid the turbines wastes precious hydropower and irrigation potential.

NONPOINT SOURCE EDUCATION

Prompted by the results of recent water assessments and a heightened awareness of agricultural nonpoint source pollution, state and federal organizations in Idaho are pursuing cooperative ways to achieve lake water quality protection. In response to the pollution control needs, several information meetings and farm visits were held with representatives of the Soil Conservation Service and agreeable landowners. The purpose of the meetings is to establish meaningful communication with the farming community and to provide landowners with a water quality perspective of their farming activities. Although voluntary, educational approaches to lake water quality protection might not be enough to encourage some agricultural producers to implement best management practices and comply with the state standards, it can be a viable alternative to a comprehensive state program.

PUBLICATIONS

The National Wildlife Federations' 1989 Conservation Directory is now available. The publication lists available organizations, agencies and officials concerned with natural resources. The cost is \$15.00 per book plus \$3.25 for shipping. Write to Conservation Directory, NWF, 1412 16th St. N.W., Washington, D.C. 20036.

Sonar for Fisheries Research: An Introductory Guide to Hydroacoustics by BioSonics, Inc. This 26-page booklet, which includes a glossary, describes how hydroacoustics provides accurate and reliable information on fish abundance, location, behavior and size. The booklet costs \$3.50, plus shipping and handling. Also available at no charge, is a paper entitled "Important Steps to Ensure the Defendability of Hydroacoustic Data." To receive an order form for both publications, call or write Lisa Gonnason at BioSonics, Inc., 4520 Union Bay Place Northeast, Seattle, Washington 98105, (206) 527-0905.

BOATING ACCESS GUIDE

A new boat access building guide has been published by the States Organization for Boating Access. The publication represents the collective thinking of state officials on how to provide the most practical and serviceable access for trailerable boats. Locating and acquiring sites, design and construction, and operating and maintaining facilities are some of the areas this book addresses. Copies are available at a cost of \$25.00 plus \$3.00 postage from SOBA, P.O. Box 25655, Washington, D.C. 20007.

Acidification of Freshwaters, by M.C. Cresser and A.C. Edwards is an integrated account that draws not only on the main branches of chemistry but also on soil physics, hydrology, meteorology, geography, geology, plant physiology, soil microbiology and zoology. Cost is \$34.50 from Cambridge University Press, 32 East 57th Street, New York, New York 10022.

Handbook of Limnology is the first English translation of a successful German work. It offers extensive treatments of the limnology of flowing streams, the process of primary production, sewage treatment and lake restoration measures. The book describes the physicochemical properties of water, the effect of light stratification and flow of organic pollution on inland waters and methods for water pollution control. Cost is \$44.95 from John Wiley and Sons, Inc., Wiley Professional Book Announcements, P.O. Box 6792, Somerset, New Jersey 08875-9976.

Pesticide Impact on Stream Fauna, by R.C. Muirhead-Thompson, offers a detailed review and assessment of pesticide contamination in running waters, based on experiences reported from a wide variety of fields. The author examines three aspects of pesticide contamination: the source of contamination, laboratory evaluation techniques, and case studies in which effects on streams of widely used pesticides are analyzed. Cost is \$54.50 from Cambridge University Press, 32 East 57th Street, New York, New York 10022.

BATHYMETRIC MAPS

Bathymetric maps, printed by the National Oceanic and Atmospheric Administration (NOAA), illustrate the characteristics of the sea floor, portraying the shape, size and distribution of underwater features. Through the use of depth contours (in meters) and other bathymetric data, these 1:250,000 scale maps provide graphically detailed information about submarine topography. All printed maps include an overprint of the Minerals Management Service oil and gas lease block information. Because bathymetric maps are not intended for navigation, they do not include navigational information.

Bathymetric maps and Topo/Bathy maps serve as the basic tools for performing scientific engineering, and marine environmental studies required in the development of energy and marine resources. Land use planners, conservationists, surveyors, geologists and oceanographers are among those having an interest in the coastal area, wetlands and offshore environment portrayed on these maps. All bathymetric map products, in particular the bathymetric fishing maps, are intended to aid fishers in the identification of sea floor features and the location of potential fishing grounds. Please write or call for the catalog. NOAA Distribution Branch (N/CG33), National Ocean Service, NOAA, Riverdale, Maryland 20737, 301/436-6990.

VIDEOS! VIDEOS! VIDEOS!

Fisheries and aquaculture video tapes are available and listed below. Order them directly from the agency listed.

"Aquaculture: Its Time Has Come," Douglas Tave or John Grover, International Center for Aquaculture, Auburn University, Alabama 36849. Phone 205/826-4786.

"Florida Aquaculture," M. Ednoff, FL Dept. of Agriculture and Consumer Services, 425 May Bldg., Tallahassee, FL 32379.

"New Zealand Greenshell Mussel," Robert Hickman, Fisheries Research, P.O. Box 297, Wellington, New Zealand.

"Aquaculture in Tasmania," Harry Shaw, Pacific Aquaculture, P.O. Box 55, Edjecliff, Sydney, North South Wales 2027, Australia. Phone (02) 32 5000 or FAX (02) 327 1912 (02) 32 2909.

"Alligator Aquaculture," "Catfish Aquaculture," "Crawfish Aquaculture" and "Redfish Aquaculture" are all available from John Brooks, LA Cooperative Extension Service, 128 Knapp Hall, LSU, Baton Rouge, LA 70803. Phone (504) 388-2263.

VOTE! VOTE! VOTE!
Fill out the ballot
provided in this issue
and send it in!!

The following videos are available from the Bonneville Power Administration, Division of Fish and Wildlife, PJW, Public Information Office, P.O. Box 3621, Portland, OR 97208.

- "Return to the River—The Story of the Kokanee Hatchery"
- "Running Wild—Rebuilding Streams for Salmon"
- "Clear Creek Fish Habitat Restoration"
- "West of the Divide: Fish and Wildlife in Montana"
- "Journey of the Kings"

MEETINGS, SEMINARS & SHORT COURSES

CALENDAR

June 17-23. Annual meeting of the American Society of Ichthyologists and Herpetologists. For information contact Dr. Margaret Bradbury, Dept. of Biology, San Francisco State University, 1600 Holloway, San Francisco, CA 94132.

June 27-30. American Water Resources Association Symposia "Headwaters Hydrology" and "Indian Water Rights and Water Resources Management." University of Montana, Missoula, Montana. For information contact Dr. Donald F. Potts, School of Forestry, University of Montana, Missoula, MT 59812, 406/243-6622.

July 3-8. Joint Meeting of the Western Association of Fish and Wildlife Agencies and the Western Division of the American Fisheries Society, Sheraton Hotel and Tower, Seattle, Washington. For more information contact Pat Dwyer, 27 Border Lane, Bozeman, Montana 59715.

July 5. A student forum will be held at the Western Division meeting in Seattle at 6:00 pm. This will be an opportunity for students and Executive Committee members to exchange ideas on ways WDAFS can better serve the student community. It will be an excellent occasion for students to have some input to WDAFS, interact with students from other chapters and take home new ideas on ways to take advantage of the opportunities AFS offers fisheries professionals. Refreshments will be served and all students are urged to attend.

July 5. "Symposium on Indian Fisheries" is being sponsored by WDAFS, Native American Fisheries Committee. The symposium will be held at the Sheraton Towers, Seattle, Washington. For more information contact Frank Halfmoon, Committee Chairman, Symposium on Indian Fisheries, P.O. Box 14929, Portland, Oregon 97214, 503/231-6749.

September 2-8. AFS Annual Meeting will be held at the Captain Cook Hotel, Anchorage, Alaska. The Alaska Chapter has made extensive travel arrangements with Delta Airlines that will allow individuals traveling to the meeting substantial discounts. For information contact Randy Bailey, USFWS, 1011 East Tudor Rd., Anchorage, Alaska 99503-6199, 406/283-7077.

September 2-3. Using Socio-Economics in the Fishery Resource Process. To be held at the 119th Annual Meeting of AFS in Anchorage, Alaska. This course will cover the basic legal,

administrative and scientific issues in the use of socio-economic data and analysis in the fishery policy and management process. Using examples from both the United States federal fishery management arena and from the State of Alaska, the host for the 1989 meetings, the course will include lecture, discussion and problem-solving sections to both educate and involve the participants. Enrollment will be limited to 25 people. Registration fee is \$100. (U.S.). To enroll, send your name, address, agency/society/private affiliation, phone number and \$100. to Michael Orbach, Dept. of Sociology and Anthropology, East Carolina University, Greenville, N.C. 27834.

September 4. Analyzing and Managing User Group Conflicts. To be held at the 119th Annual Meeting of AFS in Anchorage, Alaska. This will be a one-day course (10 hours; 1 CEU credit) with a fee of \$75.00 and enrollment limited to 20 people. The course will address resource management, user group conflicts, management decision making and negotiating. To register send your name, address, agency/society affiliation, phone number and \$75.00 to Professor Fikret Berkes, Brock University, Environmental Studies, St. Catharines, Ontario L2S 3A1, Canada, 416/688-5550.

September 4-8. Fishery Management Controversies: Biological, Economic and Political. Annual Meeting of the American Fisheries Society. Anchorage, Alaska. Contact Randy Bailey, U.S. Fish and Wildlife Service, Anchorage Alaska 99503.

September 9-13. 79th annual meeting of the International Association of Fish and Wildlife Agencies. Ramkota Inn, Pierre, South Dakota. For information contact Mark J. Reeff, International Association of Fish and Wildlife Agencies, 444 N. Capitol St., NW, Suite 534, Washington, D.C. 20001, 202/624-7890.

September 18-19. Wild Trout IV will be held in Yellowstone NP, Mammoth, Wyoming. The symposium, held every five years, will address the needs, management and biology of wild trout and salmon populations. For information contact Frank R. Richardson, 404/331-3588 or Gardner Grant, 914/428-5553.

October 16-19. Environmental Monitoring, Restoration and Assessment: What Have We Learned? will be held in Richland, Washington. The symposium is being sponsored by the U.S. Department of Energy and Battelle, Pacific Northwest Laboratories. The Potential health and environmental effects of energy-related and other industrial activities have been monitored and assessed at various government and private facilities for over three decades. Most monitoring is required under government regulations; some is implemented because facility operators consider it prudent practise. As a result of these activities, there is now a substantial radiological, physical and chemical data base for various environmental components, both in the United States and abroad. But what have we learned and where do we go from here? Abstracts and inquiries should be addressed to Robert Gray, Chair, Symposium Committee, Office of Hanford Environment, K1-30 Battelle, Pacific Northwest Laboratories, Richland, Washington 99352.

October 24-26. A Short Course on Ecology and Sampling of Fish Larvae In Freshwaters will be offered by the Larval Fish Laboratory at Colorado State University, Fort Collins, Colorado. The purpose of the short course is to facilitate improvements in larval fish sampling programs. Practical application of the information presented in fishery research, management and environmental assessment will be emphasized. A detailed brochure on the short course will be sent upon request. Enrollment fee is \$300. per person. Participants can earn 1 hour of

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WDAFS ELECTION BALLOT

Please vote for one candidate in each category

CANDIDATES FOR VICE PRESIDENT



Don Chase

Don graduated from Washington State University in 1979 with bachelors degrees in Biology and Environmental Science. Since 1979 Don has worked for the State of Washington as a non-game biologist and started the states' Computerized Optimization Project (CHOP). In 1989, Don became fish pathologist for southwest Washington and the Microcomputer Support Manager for the Department of Wildlife. He joined AFS in 1982 and is a member of the North Pacific International Chapter. He initiated the Computer User Section of AFS and was elected its first president. For his work he received the AFS Distinguished Service Award in 1986. He served on the AFS EXCOM for two years. Also, he served on the Society's Home Office Computerization and Continuing Education Committees. He has been active in continuing education by teaching "How to Use Computers in Fisheries" to the Society's members. Don is currently the secretary-treasurer of the Western Division.



Tom Powell

A member of Colorado-Wyoming Chapter since 1971; Fisheries research supervisor, Colorado Division of Wildlife; 21 years of professional experience with fishery research, management and administration; B.S. in Fishery Science, Colorado State University, 1967; M.S. Fishery Science, Colorado State University, 1968; member of AFS resolution committee; past president, vice president and secretary-treasurer of the Colorado-Wyoming chapter; past chapter chairman of program, arrangements and best paper committees; member of Fish Management and Fish Administrators sections of AFS.

CANDIDATES FOR SECRETARY-TREASURER



John Leppink

John graduated with a BS from Utah State in 1973. He has worked for the Utah Division of Wildlife Resources since 1973 as a hatchery worker, regional fisheries manager and currently as the state-wide fish culture coordinator. John has been a member of the Bonneville Chapter of AFS since 1973. He was secretary-treasurer of the chapter in 1977 and was president of the chapter in 1986. John has been heavily involved in fund raising efforts for the parent society in recent years and has assisted in the planning of AFS National Conferences for the past two years.



Gerald Burton

Gerry is a 1966 graduate of the University of Wisconsin (Oshkosh) in biology. He has worked for the US Fish and Wildlife Service since 1967 conducting river basin studies in Tulsa, Oklahoma; as an assistant project leader at the Cherokee, North Carolina FAO; as a fisheries biologist in Vancouver, Washington for the Columbia Basin Program; as an assistant area manager for fisheries and endangered species in Phoenix, Arizona; and currently as a fisheries biologist for the endangered Species Program in Albuquerque, New Mexico. Gerry has been an AFS member since 1971. He is a past president of the Arizona-New Mexico Chapter and was instrumental in planning the 1988 WDAFS Conference in Albuquerque.

CANDIDATES FOR NATIONAL NOMINATION REPRESENTATIVE



Tony Novotny

Anthony "Tony" Novotny is a graduate of the University of Washington College of Fisheries and was a Fisheries Research Biologist with the National Marine Fisheries Service in the Pacific Northwest for 30 years. His career has been spent in the enhancement and propagation of salmon in this country and abroad.

Tony is a life member of the American Fisheries Society and is also a member of the American Institute of Fishery Research Biologists (AIFRB), National Shellfisheries Association (NSA) and the Pacific Fishery Biologists (PFB).

Tony has held many AFS offices including Vice President of North-Pacific International Chapter and President, Western Division AFS. In 1988 he was President, Pacific Fishery Biologists and was the Arrangements Chairman for the 1988 AFS/USFWS International Tagging and Marking Symposium. He also received the 1988 AFS Distinguished Service Award.

Tony is currently the owner of Marinka International, an aquaculture consulting company.



Don Martin

Don earned his BA in Zoology (1971) and his MA in Biology (1973) from Humboldt State University. From 1974 to 1982, Don has worked for Washington State University, Idaho Department of Fish and Game and the Idaho Department of Health and Welfare. Since 1982 Don has worked as a Fisheries Ecologist for the U.S. Environmental Protection Agency, Region 10, where he is coordinating efforts of local, state and federal agencies in Idaho to abate nonpoint source pollution.

Don joined the AFS in 1976 and became active in the Idaho Chapter. Don has participated in Western Division activities since 1983. He served 1 year as Membership Committee Chairman, 1 year as Program Committee Chairman and was a Division officer from 1984 to 1988. On the national level of the AFS, Don has worked on the Environmental Concerns Committee, Raffle Committee, Membership Committee and Certification Committee Appeals Board. He was AFS Executive Retreat Chairman for 2 years and was on the Arrangements Committee for the Sun Valley annual AFS meeting.

Fold, tape, stamp and mail this ballot to the address on the reverse side.

PLEASE
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**AL MILLS, PAST PRESIDENT WDAFS
615 EAST CENTER STREET
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Second Fold Line

First Fold Line

**WESTERN DIVISION
AMERICAN FISHERIES SOCIETY
AWARD NOMINATION FORM**

AWARD: Excellence ___ Outstanding Chapter ___
Conservation Achievement ___ Student of the Year ___

Nominee: _____

Address: _____ State: ___ Zip: ___

Phone: _____

NOMINATION STATEMENT:

Attach a typed statement explaining why this individual or agency is deserving of an award. Please explain fully the accomplishments or series of career accomplishments that distinguishes this nominee. Include information on other awards and honors received, AFS offices held, etc. Attach any pertinent news clippings, letters or documents.

Submitted by: _____

Address: _____

City: _____ State: ___ Zip: ___

Phone: _____ Date: _____



Symposium On Indian Fisheries

● **WEDNESDAY, JULY 5**
SEATTLE SHERITAN

Morning
Registration
Welcome and Invocation Panel
On Historical Perspective
Break
Keynote Speakers
Lunch (on your own)
Afternoon
Panel on Current Perspectives
Break
Concurrent Sessions
4 Papers, 4 Papers

● **THURSDAY, JULY 6**
Morning

Concurrent sessions
4 Papers, 4 Papers
Break
Summation
End Of Symposium

● **FRIDAY, JULY 7**
WESTERN DIVISION,
AFS TECHNICAL
SESSION

8:30-11:30 am
Five speakers to represent various perspectives on Indian Fisheries

Symposium Registration Fee: \$55.00

For more information contact Frank Halfmoon,
P.O. Box 14929, Portland, Or 97214, 503/231-6749

Attention Western Division Chapter Officers!

**Retreat at Kianna Lodge
near Seattle, July 3, 1989**

All Chapters should have a representative present.

A chance to voice your opinion about current topics of importance to the Western Division and the Society as a whole.

Objectives of the Retreat:

- * Provide an opportunity for communication among the chapters and the Society administrative structure. This includes Western Division Officers, Society Officers and AFS staff from Bethesda.
- * Discuss and develop a visibility strategy for Western Division Chapters.

We are working hard to make this an enjoyable as well as productive retreat. Lunch and dinner will be provided at a nominal cost. Included will be a seafood bonanza for all to enjoy, held on the beach at the lodge. For those bringing families along, they are welcome! There are lots of activities available for spouses and children at the lodge and surrounding area. For more information contact Pat Dwyer, 406/283-7077.

1989 WDAFS ANNUAL MEETING AND CONFERENCE

The joint meeting of the Western Association of Fish and Wildlife Agencies and the Western Division of the American Fisheries Society, will be held at the Sheraton Hotel and Tower, Seattle, Washington, July 3-8, 1989. The theme of the conference is "Sharing a Common Legacy."

July 3, Monday

- RETREAT. See announcement above.

July 4, Tuesday

- 3 talks to be arranged by Don Chase.
- Business meeting.

July 5, Wednesday

Three concurrent technical sessions:

8:30 AM TO 12 NOON:

- Fishery Genetics and Fishery Management, Steve Leider
- Large & Small River Fishery Management, Lou Carufel
- Contributed Papers, Clair Stalnaker

1:30 PM TO 5 PM:

- Computer Applications in Fishery Science, Eric Knudsen
- Contributed Papers, Sharon Kiefer
- The Significance of Hydrology for Stream Function, Tom Taylor

July 6, Thursday

1:30 PM TO 5 PM:

- Conservation, Biology and Management of Threatened Fishes, Lary Eng
- Contributed Papers, Ken Hashagen
- Computer Applications/Demonstration, "Hands-on Session," Bob Foster

July 7, Friday

8 AM TO 5 PM:

- Focus On Time Management* (limit of 25)

8:30 AM TO 12 NOON:

- Native American Fisheries, Frank Halfmoon
- Fish Diseases, Dave Drake

1:30 PM TO 4:30 PM:

- Riparian Habitat, Chris Hunter
- Marine Fisheries, Marta Nammack

July 8, Saturday

8 AM TO 12 NOON:

- Focus On Time Management*

*The class, **Focus On Time Management**, will be taught by Jerry Johnson with the Franklin Institute. The course includes a total approach to controlling the various pressures that compete for your time. Every participant in the seminar receives a one-year Franklin Day Planner System. The cost is anticipated to be \$100 to \$125. Contact Ken Hashagen, 916/323-7324, for further information.

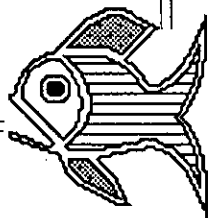
Pre-registration fee\$95.00
Registration fee on site\$115.00
Tillacum Tour\$35.00

Send pre-registration fees to:

Janine Fenton, Assistant Director
Washington Dept. of Wildlife
Capiol Way, North
Olympia, WA 98501-1091

For registration/accommodation information contact Rich Poelker, 206/753-2921. For technical session information contact Cay Goude, 916/978-4613.

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academic credit (undergraduate or graduate) from Colorado State University through the Office of Continuing Education for an additional fee of \$35.00. Registration deadline is October 9, 1989 (individuals missing the deadline should call immediately). For further information contact Robert T. Muth, 303/491-5295 or Clarence A. Carlson 303/491-5089, Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, Colorado 80523.

November 16-18. The Desert Fishes Council will hold its 21st annual meeting in Albuquerque, New Mexico. This event, jointly hosted by the University of New Mexico, New Mexico Department of Game and Fish and U.S. Fish and Wildlife Service, will include two days of papers and a one-day field trip to Dexter National Fish Hatchery. For additional information about the Council or meeting contact Phil Pister, Executive Secretary, Desert Fishes Council, California Department of Game and Fish, 407 W. Line St., Bishop, California 93514, 619/872-1171 or Steven Platania, Local Chairman, 1989 Desert Fishes Council Meeting, Dept. of Biology, University of New Mexico, Albuquerque, New Mexico 87131, 505/277-5340.

December 6-9. The Management of Contaminated Urban Fisheries Symposium sponsored by the Water Quality section of the American Fisheries Society and originally scheduled for the 1988 Midwest Fish and Wildlife Conference has been postponed. Due to expanded interest, the symposium has been rescheduled for December 6-9, 1989 in Springfield, Illinois at the 1989

Midwest Fish and Wildlife Conference. Invited and contributed papers will cover several aspects of this problem, including managing the environment, managing the fish community, managing the fishing public, socio-economic considerations, needs not addressed within the traditional fisheries management framework and the future of urban fisheries. 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.

The Tributary is distributed to 3000 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 of **The Tributary** in 1989. Deadlines for submission of articles for **The Tributary** are February 15 (for the Winter issue), May 20 (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