

The Tributary

A Newsletter of the Western Division, American Fisheries Society

Volume 16, No. 3/June 1991

THE PRESIDENT'S CORNER

When I was very small, I used to sit on my grandfather's knee and listen. I would listen to stories about his stage passengers waiting while he fished the Pit River for steelhead.

When I was a little older, I would listen to the thrash-thrash of spawning winter chinook in tributaries to the Sacramento River. If it was a better day, I would get to listen to a steelhead whirl line from my reel. I enjoyed that sound, because I knew that each of the hundred times a year that I heard it, I would hear the sizzle of cooking fish for our family of six.

Only a few years ago, I could listen to the hiss and chuckle of the South Fork Salmon River and wonder at the sight of a sockeye salmon holding with a group of summer chinook. Near that same year, the rattle of a pair of spawning chinook shivered the November air near the Krassel Ranger Station. I listened.

All this listening to fish music has brought me joy, but I will never hear my grandfather's steelhead. I am not optimistic that I will again see a sockeye or a fall chinook in the South Fork. Will the melody of the river be a dirge now? Will there be memories like mine for my grandchildren?

You are a glimmer of hope. You have listened, too. You have started to act and not just listen. You are beginning to make a difference by your actions, your publications, your voices, your petitions and your appeals. Be persistent in your hope. Be persistent in your actions. Most of all, be persistent with your listening.

A SAD DAY FOR AFS

Carl Sullivan died March 18 at his home in Charles Town, West Virginia. He was 65 years old. Sully had been the Society's Executive Director from late 1975 until his retirement on March 10, a week before his death. During his last two years, he fought an increasingly difficult battle with cancer. Sully's personal courage and unflinching leadership during this struggle inspired everyone of us privileged to work with him. His love for the Society was returned by its members. The outpouring of honors, recognition and thanks that reached him at his retirement celebration made him, in his words, "sinfully proud."

NATIVE AMERICAN FISHERIES COMMITTEE

The Native American Fisheries Committee has existed a relatively short time, beginning in 1987. The primary purpose of the original committee was to organize the Native American Fisheries Symposium held during the 1989 Western Division Meeting in Seattle. This was indeed an ambitious undertaking for this newly formed committee and its chairman, Frank Halfmoon.

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AFS DIVISION MEMBERSHIPS

SECTION	1986	1987	1988	1989	1990
Northeastern	1083	1070	1126	1106	1150
North Central	1543	1596	1648	1666	1761
Southern	1806	1830	1960	1979	1974
Western	2577	2555	2716	2891	3076
Totals	7009	7051	7450	7642	7961

WESTERN DIVISION AWARDS

The Western Division of AFS has five awards which are given out annually if qualified candidates are nominated. The awards are the following:

1. Award of Excellence which can be awarded to members or non-members within the Western Division. It is for outstanding achievements in fisheries.
2. Award of Merit can be presented to AFS members, non-members or organizations who have provided some type of meritorious service to the Society.
3. Robert L. Borovich Award is to be presented to the non-AFS individuals for enhancing or protecting our fisheries resources.
4. Conservation Achievement Award is for non-AFS groups or organizations for outstanding work in fisheries.
5. Chapter of the Year Award is presented to the chapter which has the best justification in the nomination. Nominations can come from AFS members, so nominate your own chapter.

Nominations for these awards must be submitted to the Awards Committee Chairman 15 days before the annual meeting so they can be presented at that time. Recipients of Chapter Awards often make excellent nominations for the Western Division Awards.

Send your typed nominations with justification to Cay C. Goude, 10685 Jackson Rd., Sacramento, California 95830. If you have any questions call 916/362-8373 (home) or 916/978-4613 (work).

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The Tributary is distributed to 3,000 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 publishes three editions of *The Tributary* yearly.

Deadlines for submission of articles 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
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FREE MEMBERSHIP

Many sections will offer a one-year free membership to new AFS members as a means to get these people more rapidly involved in Society affairs. Each new member may select one (only) of the Sections participating in this program. Sign up today!

RIPARIAN COMMITTEE

Mark Gorges has taken over the chairship of the riparian committee. Wayne Elmore got saddled with the spotted owl, so had to resign. The new chair is up and running!

Mark can be reached at USDI-BLM, 2515 Warren Ave., P.O. Box 1828, Cheyenne, Wyoming 82003, 307/775-6100.

**AMERICAN FISHERIES SOCIETY
EXECUTIVE DIRECTOR**

Paul Brouha, deputy director of the American Fisheries Society since 1986 has succeeded Carl Sullivan, who served as the Society's executive director since 1975.

Brouha, a New England native, received a bachelor's degree from Penn State, and after a stint as a pilot with the U.S. Air Force, earned a master's degree in fisheries science from Virginia Tech. He then began a fisheries science career with the Wisconsin Department of Natural Resources. In 1977 he joined the U.S. Forest Service as a fisheries scientist stationed in Redding, California. In the next ten years he was given progressively more responsible assignments with the Forest Service culminating in his appointment as national fisheries program manager for the entire service.

As AFS executive director, Brouha's responsibilities include habitat protection, support for the Society's subunits, legislative liaison and related activities in pursuit of the Society's goals and objectives. AFS Executive Director Brouha is a certified fisheries scientist and a 17-year member of the American Fisheries Society. He is an active fisherman, and enthusiastic bow hunter and a strong advocate of outdoor recreational opportunities. Paul, his wife Carol and college-age children Brook and Anne reside in Falls Church, Virginia.

The American Fisheries Society, founded 121 years ago, is the world's largest and most senior organization of fisheries science/conservationists.

URBAN FISHING SECTION PROPOSED

The idea of an Urban Fishing Section has been advanced by Lee Redmond. Such a section could establish dialogue among interested participants, including urban fishery managers, aquatic education instructors and water quality specialists. The goal would be improved "management" of existing problems and the development of comprehensive urban fishing programs. If you have ideas on the subject or want to get involved contact Lee at MO Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65103. Phone 314/751-4115 or FAX 314/893-6079.

AFS NAME CHANGE

The question of whether or not a name change for the American Fisheries Society is needed may be placed before the membership in the near future. Although much of the interest in and support for a name change has traditionally come from Society members who either live north or south of the United States boundaries, or from groups or individuals who share waters or interests with our northern or southern neighbors, the question of a name change deserves serious consideration from every member within the Society regardless of their geographic location.

BRINGING HOME THE BACON...

AFS has nearly completed its latest survey of state fisheries biologist annual salaries. The averages provided do not consider benefits such as sick and annual leave, health insurance, retirement programs, etc. The averages do include an adjustment for differences in cost of living among the 50 states.

In 1977 the nationwide average state fisheries biologist salary was \$13,986. In 1979 it rose to \$15,904 and to \$21,639 in 1983. In 1987, there was further growth to \$25,079 and the new 1990 survey reports an average annual salary of \$29,300. The following table lists the states (plus Washington, D.C.) in order of average adjusted salary paid from the highest to the lowest. A detailed report of the 1990 survey was published in the May-June 1991 issue of *Fisheries*. For additional information contact the AFS central office at 301/897-8616.

State	Rank	State	Rank
MI	1	OR	27
NJ	2	MA	28
CO	3	MN	29
AL	4	VA	30
NV	5	ME	31
GA	6	WA	32
CA	7	VT	33
NY	8	NH	34
IL	9	RI	35
NM	10	FL	36
OK	11	KS	37
SC	12	MS	38
IA	13	UT	39
CT	14	KY	40
TN	15	AR	41
PA	16	AZ	42
MO	17	ND	43
NC	18	NE	44
TX	19	AK	45
DE	20	ID	46
MD	21	MT	47
OH	22	HI	48
LA	23	DC	49
WV	24	SD	50
WY	25	IN	51
WI	26		

**THIS AND THAT
AROUND THE WEST**

HOW APPLICABLE IS THIS TO YOUR STATE?

A study of Colorado resident and non-resident anglers by Standage Accureach of Denver has provided managers with a snapshot picture of the average Colorado angler. More importantly, it has given them insight into why some have left the sport.

The study, which contacted 354 anglers who had bought licenses in the past two years, reveals the average angler is a 25-44-year-old, white married male, who lives in the suburbs and has completed high school and some college. He fishes for trout, most often from the bank of a cold-water lake or reservoir.

Some of the major problems that anglers cited were lack of fish to catch, lack of large fish, difficulty of access to good places, too many anglers and too far to travel. Of those anglers who had not fished in the past year, 45 percent noted lack of time as the reason. Others indicated declining fishing quality, loss of interest and not enough fish to catch as reasons for leaving the sport. On the bright side, 76 percent of the resident anglers who are parents, have children who fish.

One problem with studies of this sort is that while they identify concerns of the anglers, they do not identify how much anglers would be willing to pay to correct the problems. Rational management would dictate that the amount of public funds spent should be less than or equal to the benefit they provide the public. While placing a dollar value on higher catch rates may seem like an impossible task, it is not. Every time an angler decides to make a trip, s/he implicitly makes a trade-off between the distance to a site (and thus the expense in time and dollars that is incurred traveling there) and the catch rate at the site. In this manner, the angler reveals an implied value for improved catch rates. So while it is important to know what concerns anglers, it is equally important to know how much it concerns them.

KENTUCKY STREAMS POLLUTED

According to a state stream survey mandated by the federal Clean Water Act, nearly 20 percent of Kentucky's streams are affected by some sort of pollution. Non-point source pollution, such as agricultural run-off is among the most threatening, the survey report noted.

Nearly 2,000 miles of the 10,200 stream-miles that were assessed, are subjected to chronic violations of water quality regulations, resulting most often in pollution from fecal coliform bacteria, organic enrichment and siltation.

WORKING WITH PEOPLE

Editor's Note: This article was submitted by Robert Wiley of the Colorado-Wyoming Chapter. I'm not sure who wrote it, but they sure know what they are talking about!

Different strategies, different ways of managing fisheries, but suggested by people who are not professional resource managers. Sometimes such suggestions are upsetting to resource management agencies... why? Conservation agencies and professional resource managers are charged with managing the resource for the benefit of the public, the people of Wyoming, and it is easy, sometimes, to believe that what we resource managers feel is best for the resource is best for the public as well. That is something like going into a restaurant, looking at the menu, and having the Chef decide for you what you'll eat.

I have a certificate on my office wall that says I've been judged by my peers (the American Fisheries Society) to be a "Certified Fisheries Scientist." Should that be considered the same as or similar to the certificates displayed by my dentist or physician? I don't often question what my dentist plans for me but I sure receive a lot of questions about fish, fishing and the various management strategies that the Department may recommend. What about all these folks who haven't been to school to learn about fish, what do they know?

Part of the reason that suggestions made by the public may appear not well received is that non-biological issues like management suggestions made by fishermen cannot be addressed by scientific analysis. Such issues must be addressed by talking with people and giving their ideas real consideration.

Suggestions made by the public are worthy of sincere consideration and many are just as credible as management recipes offered by professional resource managers. How's that? I learned that many summers ago in conversations with Lee Wulff on the Green River in Sweetwater County. Lee Wulff almost invented modern fly fishing, and said during the days when fishery managers were proclaiming maximum catch from every water, that a trout is too valuable to be caught only once. Here is a man who made his living from fishing and writing about his experiences the world over. What could he possibly know about the Green River, I thought? We discussed how the river was managed (in 1973) with hatchery-reared fish and he didn't argue with that. We did discuss different strategies that might be implemented... and the ideas made sense? What is this, a fisherman whose ideas made resource management sense!

Fishery managers and the agencies they work for can work successfully with people if we recognize that people have a genuine interest in the resource, provide real opportunities for them to participate in resource management planning, listen sincerely to them, and recognize that the public has an obligation to participate in resource management by expressing their desires. We resource managers (and our agencies) must be careful that we don't prescribe for the public what we feel is best for them without offering choice. For example, I like to fly-fish streams for big trout and keep very few fish. It wouldn't be fair or right or ethical for me to expect other anglers to fish the same way and set management strategies so that people had to fish that way.

People won't place much trust in fishery managers or conservation agencies unless we demonstrate that we are competent (know the difference between right and wrong), qualified (by experience and accomplishments), and credible (people can believe in what we say). This is exactly how we professionals

are judged and if we don't provide genuine opportunity for the public to participate with us we will not remain credible for very long.

BAD NEWS FOR ENDANGERED SPECIES

There is bad news for endangered species at the national level. The Office of the Inspector General for the Department of Interior issued a report (Department of Interior Report No. 90-98) last fall which called into question implementation of the Endangered Species Act by the U.S. Fish and Wildlife Service. Although over \$8.4 million per year is being spent on recovery plans, the report concluded "...that the U.S. Fish and Wildlife Service had not effectively implemented a domestic endangered species program, and we question whether accomplishment of the program as it is presently structured and funded is feasible." For additional information on the report, contact the Office of the Inspector General, U.S. Department of the Interior, Washington, DC 20240.

NEW JOURNEY OF THE KINGS VIDEO

Journey of the Kings is a beautiful, half-hour video about the plight of the Columbia River salmon and the remarkable regional program designed to protect them. It is ideal for showing to groups. The camera soars over and dives into some of the Northwest's most breathtaking environments as it follows the migrating salmon from their freshwater birthing streams to the Pacific Ocean and back again.

The video is available on loan at no cost. An accompanying brochure, designed for children to

WDAFS TOP BANANAS

ELECTED OFFICERS

Dave Burns, President
P.O. Box 1351
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208/634-2553 (h)

Don Chase, President-elect (1991 Program Chair)
2034 N. Bethel St.
Olympia, WA 98506
206/753-3026 (w)

Glen Phillips, Vice-president (Chairs: Membership, Time & Place, and 1989-90 Audit)
Water Pollution Control Office
Coggswell Building Room A-206
Helena, MT 59620
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406/444-2406 (w, PM)

Cay Goude, Immediate Past-president (Chairs: Awards & Nominations, Constitutional Consultant)
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916/978-4613 (w)

Lynn Starnes, Secretary-treasurer
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Denver, CO 80225
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Larry Eng, Society Nominating Rep.
California Fish & Game
1416 Ninth St.
Sacramento, CA 95814

APPOINTMENTS & COMMITTEE CHAIRS

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Jerry Burton, Threatened & Endangered Species Chair
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Mark Gorges, Riparian Chair
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2515 Warren Ave., P.O. Box 1828
Cheyenne, WY 82003
307/775-6100

Joe DoSantos, Native American Fisheries Chair
CSKT
P.O. Box 278
Pablo, MT 59855
406/675-2700

Mike Fraidenburg, Marine Fisheries Chair
5432 Keating Rd. NW
Olympia, WA 98502
206/753-5684 (w)

read and color, also is available. Contact the Council's public involvement division to borrow a copy of the film. Northwest Power Planning Council, 851 SW Sixth Ave., Suite 1100, Portland, Oregon 97204. Call toll-free 1/800/222-3355.

CALIFORNIA EPA??

Upon taking office in January, 1991, California Governor Pete Wilson announced his desire to create the California Environmental Protection Agency, consolidating many responsibilities of other state resource agencies. Planning for this new agency is now underway. An Office of Environmental Protection has been created, and James Strock has been appointed Secretary of Environmental Protection. The State air quality, water quality and waste boards are currently reporting to Secretary Strock. Although most fisheries responsibilities will remain with the Department of Fish and Game, the planned EPA will bear responsibility for determining fisheries impacts of off-shore oil and gas development. The agency may be fully operational within a year. For more information, contact the California Office of Environmental Protection, 916/445-3846.

YOUNG ANGLERS WANTED!

The February 1991 report of the American Fishing Tackle Manufacturers Association (AFTMA) presents research findings showing that nearly 60 percent of American households having at least one adult who fishes have children who do not fish at all. The same survey showed that almost 90 percent of all freshwater anglers started fishing before age 20, and suggested that it may be difficult to interest non-anglers over 20 to take up the sport.

These figures illustrate the need to enhance youth recruitment in sport fishing. AFTMA believes the need to involve more young people in sport fishing is critical to the future of the industry and continues to sponsor programs which introduce children to angling. Programs like the 1991 Kids' All-American Fishing Derby, coordinated by Hooked on Fishing International and co-sponsored by AFTMA, continue to provide opportunities to expand interest in sport fishing. For more information about the AFTMA study, contact Joe Kuti, Vice-president for Marketing at 708/381-9490.

NMFS PROPOSED LISTING SOCKEYE

The National Marine Fisheries Service announced a proposal to list the sockeye salmon on the Snake River as endangered under the Endangered Species Act. This is a proposal to list, not a listing. There is a 60-day comment period for NMFS to receive public comment. After public hearings in Seattle, Portland and Boise, the biological analysis will continue to allow a final determination on a listing one year from now.

When asked about the impacts of this announcement, it is still too early to say. During the next year, NMFS will begin to work on a recovery plan and the plan they develop will determine the impacts. At the Salmon Summit, two different approaches were discussed.

One approach proposed by Idaho Governor Cecil Andrus and others is to reduce the reservoir levels significantly on the Snake River and possibly on the John Day Pool to speed the migration of the juvenile salmon. That approach, if adopted by NMFS, could have significant economic impacts. It would reduce power generation. It could eliminate irrigation from the Ice Harbor Pool and could impinge irrigation from the John Day Pool. And, it would stop navigation during the draw-down.

There have been concerns voiced about this proposal. Drawing down reservoirs is harmful to the fish needing protection and there are serious concerns about the economic impact. Nitrogen super saturation affects the juveniles and returning adults and the dams are constructed such that the ladders for returning adults do not function below minimum operating pool.

Alternative proposals from BPA, PNUCC and the Columbia River Alliance offer a more comprehensive approach which would improve the habitat in the tributaries, improve fish hatchery practices, improve migration survival and restrict harvest.

EFFECTS OF ELECTROFISHING ON FISH

Your assistance is requested. Although electrofishing has long been documented to cause injury to fish under at least some operational and environmental conditions, many fishery biologists and managers considered the methodology, when properly used, to be relatively benign and effective. As such, it has been used extensively to collect and monitor endangered fishes in the Colorado River Basin (e.g., Colorado squawfish, humpback chub and razorback sucker). However, using common electrofishing gear and techniques, a recent investigation by Sharber and Carothers (1988, *North American Journal of Fisheries Management* 8:117-122) documented extensive, often overlooked, injury to the vertebrae and adjacent tissues of adult rainbow trout collected in the Colorado River below Lake Powell. As a result of this and previous reports on injurious effects, many researchers and resource agencies are seriously concerned and re-examining their use of electrofishing for monitoring and studying endangered and other fishes.

Not all investigations conducted by the Larval Fish Laboratory at Colorado State University deal with the "little guys." We have been contracted by agencies associated with the lower Colorado River Basin to review and evaluate existing information on electrofishing gear and techniques and their effects on fish. This spring and summer we intend to summarize that information, recommend measures or guidelines for minimizing or precluding detrimental effects and suggest research to answer critical unresolved questions on the matter. Special emphasis will be placed on species and conditions most relevant to endangered species in mainstem rivers of the Colorado River Basin. Similar or related studies are probably planned or underway elsewhere. If so, we would like you, or associates, who are involved in these investigations to contact us and exchange information to avoid unnecessary replication of effort.

Some of you, or your associates have extensive practical experience with electrofishing. To complement the published literature and make our survey and evaluation as comprehensive and up-to-date as possible, we request copies of your pertinent theses, reports and unpublished manuscripts and data. We also solicit your personal observations, concerns and

suggestions on the matter, as well as information regarding recent (as yet unreported), current or planned research or development regarding electrofishing effects, efficiency, gear, or techniques. We are especially interested in experiences with or attempts to refine or develop new electrofishing techniques or gear to minimize adverse effects (e.g. the new Coffelt CPS circuitry). Comparable information on the injurious effects of other, non-electrical, collection techniques and gear is also needed. Inadvertent effects on fish eggs, larvae, early juveniles and large non-target fishes are also of interest. We do not intend to "scoop" anyone's research or planned publications and will honor requests to keep information or sources confidential.

The recommendations resulting from this and perhaps similar investigations elsewhere may affect how you collect and monitor fish in the near future. We need your input as soon as possible. Please respond by contacting Darrel E. Snyder, Larval Fish Laboratory, Colorado State University, Fort Collins, CO 80523. Telephone 303/491-5295, FAX 303/491-5091.

WHAT IS THE ENDANGERED SPECIES ACT?

The Endangered Species Act is a federal law that protects species of plants and animals that are listed as threatened or endangered. An *endangered* species is one in danger of extinction, and a *threatened* species is one likely to become endangered. The Act makes it unlawful for anyone (including federal and state agencies and private citizens) to take an endangered species. It also prohibits any federal action that could jeopardize a threatened or endangered species or destroy or adversely modify its habitat, and it requires development of plans to help threatened and endangered species to recover.

The Secretary of Commerce, acting through the National Marine Fisheries Service, has the authority to list marine fish and mammals as threatened or endangered. The Secretary of the Interior, through the Fish and Wildlife Service, is authorized to list all others.

A species may be considered for listing at the initiative of the Secretary or through a petition by an interested person. The Secretary reviews the status of a petitioned species to determine whether the species merits listing. If a petition is filed, the Secretary has up to one year to decide whether to propose a listing. A final rule listing the species as threatened or endangered must be published within one year after a proposed listing.

If a species is listed, the Secretary, to the extent prudent, will also designate the species' critical habitat. Critical habitat means areas with physical or biological features that are essential to conservation of the species or that may need special protection.

To the extent practicable, the Secretary will develop recovery plans for listed species, with recommendations for actions necessary to achieve recovery of the species and estimates of the time and money to achieve that goal. All federal agencies must consider recovery plan directives.

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SPEND A WEEK IN BIG SKY COUNTRY

The WDAFS and the Montana Chapter are proud to announce the Western Division Annual Meeting, 1991. The conference will be held Monday, July 15 through Friday, July 19 on the Montana State University campus in beautiful Bozeman, Montana.

Several scientific and technical paper sessions along with lunches, a pitchfork barbecue and banquet have been organized into four days. Time for exploring, fishing, hiking, biking and visiting with other WDAFS members! The WDAFS and Montana AFS Chapter is encouraging all AFS members, fishery and biological professionals and interested sportsmen to attend. Why not bring the family and make a vacation out of it? Visit Yellowstone National Park, historic Virginia City and fish some of the best trout streams in North America.

WDAFS MEETING SCHEDULE

Monday July 15

WDAFS Retreat. The WDAFS Executive Committee, WDAFS Chapter Officers and WDAFS Committee Chairs are encouraged to attend.

Tuesday, July 16

WDAFS & AFS Leadership Workshop.

WDAFS Executive Committee Meeting. The WDAFS Executive Committee, WDAFS Chapter Officers and WDAFS Committee Chairs are required to attend.

WDAFS "Best in the West" Volleyball Tournament.

"Pitchfork" Barbecue and Entertainment.

Wednesday, July 17

WDAFS Plenary Session.

Three concurrent morning sessions.

1. Marine Fisheries Regulations. Moderator, Mike Fraidenburg, Washington Dept. of Fisheries.
2. Mixed species in trout waters. Moderator, Howard Johnson, Montana Dept. of Fish, Wildlife & Parks.
3. Riparian Papers. Moderator, Mark Gorges, BLM.

Lunch (included in registration).

WDAFS Business Meeting

Three concurrent afternoon sessions.

1. Water Rights. Moderator, Bob Franklin, Hoopa Valley Tribe, CA.
2. Fish Chelms. Moderator, Larry Peterman, Montana Dept. Fish, Wildlife & Parks.
3. Contributed papers.

Trade Show

WDAFS "Spawning Run" (1K and 5K runs).

Mountain Bike Ride

Evening hike and Grayling fishing trip

Social Hour

Thursday, July 18

Trade Show

Four concurrent morning sessions.

1. Rotenone. Moderator, Leo Lenstch, Utah Dept. of Natural Resources.
2. Columbia River "Endangered" Fish. Moderator, Duane Phinney, Washington Dept. of Fisheries.
3. Electrofishing Injury. Moderator, Wade Fredenburg, Montana Dept. of Fish, Wildlife & Parks.

Annual Meeting continued on page 6

1991 WESTERN DIVISION ANNUAL ELECTION NOMINEES

Randy Bailey

Vice Presidential Nominee

Randy received a B.S. in Natural Resources Management from California Poly. and an M.S. in Fisheries from Virginia Tech. in 1974. Randy worked as a seasonal aide for California Department of Fish and Game from 1970-72, had a temporary appointment with the U.S. Fish and Wildlife Service in Alaska in 1974, and worked for an independent consulting firm in 1975. He worked on the Lake Tahoe-Truckee River Pyramid Lake water rights case from 1975-1978. In 1978 he transferred to the U.S.D.A. Forest Service as a forest biologist on the Malheur N.F.H. in Eastern Oregon. In 1982, he transferred to San Francisco as Regional Fisheries Program Manager for the California Region. In 1984 he returned to Alaska as Chief of Fisheries for the Alaska Region of the U.S. Fish and Wildlife Service, a position he holds today.

Randy is a life member of AFS with 20 years of active service. He is a founding member of the Alaska and Virginia Tech chapters.

Research Leader. Tom represents the Division of Wildlife on the Inland Fisheries Committee of the International Association of Fish and Wildlife Agencies.

Tom joined the American Fisheries Society in 1971 and is a member of the Colorado/Wyoming Chapter where he has served as secretary-treasurer, vice-president, president and chairman of the program, arrangements, and best paper committees. He is a member of the Fisheries Administrators and Fish Management sections and has served two years as the chairman of the Western Division's By-Laws Committee. Tom is currently the Arrangements Committee chairman for the Western Division's 1992 annual meeting.

At the parent society level, Tom has served on the Resolutions Committee and spent two years as the Associate and two years as the Constitutional Consultant. Tom has assisted with the orientation of new AFS EXCOM members for four years.

4. Native American Fisheries. Moderator, Joe DosSantos, Salish & Kootenai Confederated Tribes.

Lunch

Technology Transfer Sessions. In these sessions you can design your own session and share information with others.

Four concurrent afternoon sessions.

1. Advances in Fish Culture. Moderator, Greg Kindschi, USFWS.
2. Contributed Papers
3. Student Papers. Moderator, Mike Moberly, Univ. of Washington.
4. Perspectives of Change. . .Our Elders Speak. Moderator, John Fraley, Montana Dept. of Fish, Wildlife & Parks.

Banquet, T-shirt Exchange, Entertainment and Awards

Friday, July 19

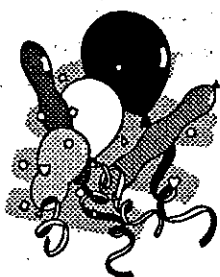
Fishery Economics Workshop. Sponsored by the AFS Fish Economics Section. Ted Turner, of Turner Network Television, guest speaker.

Lunch

Afternoon/evening tour to Virginia City (not included in registration).

Saturday, July 20

Tour to Yellowstone National Park (not included in registration).



T-SHIRT EXCHANGE

Have you got an interesting or amusing T-shirt? If you do, we are arranging a "Fishery T-Shirt Exchange." Bring a T-shirt (preferably clean) to the registration and you'll get a chance to exchange it for another T-shirt brought by another member. So bring your favorite "Spawn Till You Die" or similar T-shirt and exchange it for another. The WDAFS will start the exchange by bringing a collection of "Ray Troll" fish T-shirts.

ANNUAL MEETING COSTS

How much does all this cost? We have arranged for an inexpensive pre-registration fee of only \$100 for AFS members, \$60 for AFS Student members and \$125 for non-AFS members. On-site registration is \$125 for AFS members, \$70 for AFS Student members and \$150 for non-AFS members.

Housing packages (dorm room style) for only \$9 per person per night (double occupancy) are available. A budget lodging package designed for three nights, bed and breakfast for only \$50.31 single occupancy and \$37.83 for double occupancy. A list of local motels and campgrounds in the Bozeman vicinity will be provided with the registration form.

TOURS

Two tours have been arranged for those interested. A Virginia City evening tour, (\$44) and a full day Yellowstone National Park tour (\$42). These tours are not included in the registration.

For registration information call Montana State University Conference Services at 406/994-3333. For program information call Don Chase at 206/753-5723.

We hope to see you all there!

research interests include stream habitat analysis, factors limiting the production of salmon and trout, biodiversity of fish assemblages and freshwater zoogeography. He is currently president of the North Pacific International Chapter of AFS, chairs the Western Division's Habitat Inventory Procedures committee and serves on the national Endangered Species and Environmental Concerns Committees. In addition to AFS, he is a member of the American Society of Limnology and Oceanography, the Ecological Society of America, the North American Benthological Society, Pacific Fisheries Biologists, the Society of American Foresters, the Gilbert Ichthyological Society and Sigma Xi.

**Lynn B. Starnes
Secretary-Treasurer**

Lynn is the current WDAFS and is nominated for a second term in this office. She has served as President of the Tennessee Chapter of AFS, co-chair of the Environmental Concerns Committee, chairman of the Raffle Committee and organizer and President of the International Fisheries Section just to name a few of the elected/appointed offices. In addition, she has served on the Common and Scientific Names of Invertebrates Committee since its inception in 1982.

Lynn worked from 1984-89 in Washington, D.C. in policy and legislation related to the "Fish" in the Fish and Wildlife Service. In this capacity, she has dealt with a number of fishery issues throughout the United States including development of several restoration initiatives on the west coast. Between 1974 and 1984 she worked with the Tennessee Valley Authority. In addition to traditional fishery work on reservoirs and large rivers, she researched potential environmental impacts from coal and uranium development on aquatic resources in both the eastern and western United States. As a Peace Corps volunteer in Gambia, West Africa, she taught science, agrarian practices and worked on fisheries projects. Currently, Lynn is the Assistant Regional director for fisheries and federal aid for the U.S. Fish and Wildlife Service in Denver, Colorado.

SALMON SKIN LEATHER

Previously discarded salmon skins are now being turned into leather. The final product is as soft and as tough as sheep or cow leather but retains its scaly appearance and resembles more expensive snake or lizard skin. The Alaskan Leather Company is marketing salmon skins and Gucci of Italy has expressed recent interest.

BURBOT...LAWYER...CUSK...

EELPOUT...FRESHWATER COD...

The latest fish species to attract competitive fishing interest is the much-aligned *Lota lota* better known by the common names listed above. Interest is nowhere near as high as with bass, walleye, and crappie, but for a fish that is commonly shunned as an ugly, worthless "trash fish," the outlook is encouraging. Current attentions are focused on northern waters, where thick ice and abundant *Lota lota* populations combine for a unique winter fishing experience. Walker, Minnesota is today's burbot fishing center (locals prefer the name eelpout, but the AFS Names of Fishes Committee has chosen burbot), where 6,633 fish weighing 25,067 pounds have been harvested from Leech Lake during the last 11 years of the Walker International Eelpout Festival. Contrary to popular opinion, the burbot is quite useful as a food fish, having white, firm, nearly boneless flesh with a mild, lobster-like taste. For more details, call the Leech Lake Area Chamber of Commerce at 800/833-1118.

SWAP FISH EGGS FOR MICE?

Professor Perry Hackett and his colleagues at the University of Minnesota found that scientists using expensive mammal embryos in genetics research should be able to get the same information by using fertilized fish eggs.

The researchers discovered that the beta-actin gene in carp is nearly identical to the beta-actin gene in mice in terms of how the genetic material is organized and regulated. The beta-actin gene is present in all vertebrates and is responsible for maintaining a cell's structure.

"We discovered the way genetic material is organized is not just similar in all animals, it appears to be identical," Hackett said. "It's like looking at two different books with different covers, but finding inside the same text and index."

The finding means that genetics researchers could use fertilized transgenic fish eggs that cost only about \$3 each instead of transgenic mice embryos that can cost \$300 to \$3,000 each. A transgenic egg has been given extra DNA, the chemical that stores genetic information in most organisms. Fish eggs are much simpler to use in genetics research because they are easier to store, move and grow than are fertilized mammal eggs. It is also easier to collect fish eggs than mammal embryos, Hackett said.

IT'S NOT JUST A MATTER OF TASTE

Tests in a two-year research project were performed to find the best tasting of four varieties of salmon surprised researchers at Penn State University. Atlantic farm-raised salmon rated the highest, followed by Pacific wild, Atlantic pen-reared and Atlantic wild salmon.

"These findings are good news to the growing aquaculture industry, which raises fish on land," Dr. Joseph H. MacNeil, professor of food science at Penn State stated. "Our findings indicate that the fish farmers could increase their market share over time."

The research involved the physical and biochemical properties of salmon, as well as consumer acceptability. Method of cultivation and geographic location were taken into account, along with factors such as moisture losses suffered during freezing and cooking, color intensity of fish and omega-fatty acid content.

Fifty consumer panelists were drawn from faculty, staff and students, who made sensory evaluations once at the beginning of the project and again after the salmon had been frozen for six months. Their ratings of the four types of salmon remained the same during both evaluations.

For more information contact Dr. MacNeil at Penn State University, 814/863-1824.

LOST HOLES

The number of deep holes in Northwest rivers and streams declined by nearly 60 percent in the last 50 years, the U.S. Forest Service reported recently. Deep holes are the favored resting and rearing habitat of salmon. The Service points to this decline as one of several factors causing the reduction of wild salmon runs. Researchers studied some 220 miles of streams and rivers in five Columbia River subbasins. They compared their findings to records of surveys taken in the same places between 1937 and 1941. Logging and grazing practices are mostly to blame for the loss, the Service concluded. The Service manages more than 50 percent of the spawning habitat in the Pacific Northwest. [Source: U.S. Forest Service]

PROFESSIONALISM — AN OPINION

Discussions, statements and opinion about *professionalism* occur regularly throughout AFS. The recent "President's Corner" (*Tributary*, 16:2) indicates that all of us can assist new fishery folks become professionals. Indeed, a challenging task. AFS has established a certification program that has been suggested as a route to professionalism. I suggest that we first must understand professionalism before we can teach others to be professionals. Hanging an AFS certificate on a wall does not a professional make.

The plaque on my wall shows all that I have met certain AFS and declares that I am a *Fisheries Scientist*. The people we fisheries scientists serve probably won't put a lot of stock in that certificate unless we have demonstrated that we are competent (know the difference between right and wrong), qualified (by experience and accomplishments) and credible (people can believe in what we say). Fishery professionals

and agencies are judged according to competence, qualification and credibility.

Nobody accrues those three traits automatically by affiliation with AFS (although that helps) by "Certification," or by assessment of hefty dues to belong to a professional organization. We are accorded recognition, respect and status (whatever that is) in direct proportion to what we accomplish for the resource and for the public to whom we are directly accountable. Many routes to professionalism have been suggested (certification, continuing education, etc.). In the final analysis only the judgement of those we serve will determine whether we can really call ourselves professionals.

Sincerely, Robert W. Wiley, Colorado-Wyoming Chapter

Native American Fisheries Committee

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The purpose of the Symposium was to bring to the general WDAFS membership those important issues to Native American fisheries management in the West. Topics discussed included the following:

1. Indian Treaties and Federal Law
2. Tribal Fishing Rights: Economic Importance
3. Subsistence Fisheries: Cultural Importance
4. Indian Water Rights
5. Tribal-Agency Cooperation
6. Fishery Resource Informational Needs

Frank has since retired, not only from his chairmanship but also from federal employment. His efforts and enthusiasm will surely be missed by Western Division and we certainly wish him all the best in his future pursuits.

Now is the time to reform the committee once again into a functional part of Western Division. Native Americans of the West are major land and resource holders. We have unique resource decisions to deal with, but also share common management decisions with our State and Federal counterparts. The Western Division needs to be aware of what is happening in Indian Country and function as a coordinator or lend assistance when appropriate.

There will be a session on Native American Fisheries this year at our upcoming meeting in Bozeman. We have put together an interesting and informative mix of topics. There will also be a committee caucus held sometime during the meeting. Those of you interested in being active committee participants, please try to attend the caucus. If you can not make it to Bozeman this year, please contact Joe DosSantos, Chairman Native American Fisheries Committee, 1397 Terrace Lake Road, Ronan, Montana 59864, 406/676-5328 or 406/675-2700, ext. 380.



June 23-July 5, 1991

NATO Advance Study Institute, Genetic Conservation of Salmonid Fishes. Jointly hosted by University of Idaho and Washington State University. The meeting will review the current status of salmonid fishes around the world and methods for their characterization and conservation. An important goal of the meeting is to identify scientific advances that are required to preserve the populations and germplasm of salmonid stocks. These issues have been brought to prominence recently in the Pacific Northwest because of concerns for preserving threatened populations of Columbia River salmon, although such concerns for preserving wild stocks of salmonid fishes are being expressed around the world. The ASI will be at a postdoctoral level and proceedings of the institute will be published. Contact J.G. Cloud, Dept. of Biological Sciences, University of Idaho, Moscow, ID 83843, 205/885-6388. Another contact is G.H. Thorgaard, Dept. of Zoology, Washington State University, Pullman, WA 91163, 509/335-7438.

June 17-20, 1991

International Symposium on Biological Interactions of Enhanced and Wild Salmonids at the Coast Bastion Inn in Nanaimo, British Columbia, Canada. Sponsored by the Department of Fisheries and Oceans. For more information contact Ann Thompson, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, British Columbia, Canada V9R 5K6, 604/756-7260. FAX 604/756-7053.

October 15-17, 1991

Stewardship: Managing Resources for a Common Future, Duluth, Minnesota. Sponsored by local, state and federal agencies, recreation and conservation organizations and agricultural and natural resource industries. The conference's main objectives are to accomplish the following: (1) identify and discuss the needs, concerns and viewpoints of diverse resources stakeholders; (2) explore the ways to improve management of our lands and natural resources in the face of complex and competing demands; and (3) seek common goals to guide the conservation and management of our resources for present and future generations.

For more information contact Jane Ankrum or Nancy Gruver at the National Stewardship Conference Information Center, 330 Canal Park Drive, Duluth, Minnesota 55802, 218/722-6125.

PUBLICATIONS

Alternative Life-History Styles of Fishes

Reprinting of *Environmental Biology of Fishes* with addition of species and subject index. Assemblage of invited reviews and papers on various aspects of life history strategies of feeding, breeding and surviving in aquatic environments. Edited by M.N. Bruton, Kluwer Academic Publishers, Norwell, Massachusetts, 1990. \$165.00

Biological Indicators of Stress in Fish

Written by leaders in the field, edited by Marshall Adams and published in mid-December 1990 as AFS Symposium 8, this book covers the nature and diagnosis of stress at every level of organization from molecules to ecosystems. Comprehensive reviews, syntheses, methods. Get your copy at the member's price of only \$24, non-members pay \$30.

Environmental Scientist

U.S. E.P.A., Environmental Research Laboratory, Corvallis, Oregon. As a research leader, will provide programmatic and technical direction to the wetlands components of the EPA's Environmental Monitoring and Assessment Program (EMAP), a national monitoring research program to determine the current status and monitor future trends in ecological condition and environmental stress in wetland ecosystems. The incumbent will be responsible for the planning, implementation, interagency coordination, analysis and reporting components of the EMAP-Wetlands Program. This includes responsibility for the soundness of science, quality of the data, timeliness and technical accuracy of the reports and publications generated by the program.

Applicants should have experience in directing, planning and implementing successful research programs. Applicants should also have a comprehensive knowledge of advanced principles and practices of the environmental and physical sciences, familiarity with ongoing research and monitoring activities in the areas of wetland characterization and extent, wetland ecosystems, wetland condition and quantitative characterization of ecosystem exposure to pollutants, working knowledge or related scientific fields such as hydrology, statistics and ecology and an understanding of statistics, modeling and computer use in research.

Position is at GM-1301-14 level, salary range is \$52,406-\$68,129 per year depending on qualifications. Candidate must be a U.S. citizen. An Equal Opportunity Employer. To receive announcement and application form when formally announced, contact Pam Taylor at 503/757-4582 no later than June 29, 1991.

Intergovernmental Personnel Act: Temporary Assignments for Research Scientists

ERL-Corvallis, Oregon is seeking candidates for temporary assignments at the laboratory for periods from six months up to two years (possible renewal for a total of four years) as research scientists or research project leaders. These assignments would be under the Intergovernmental Personnel Act, for full-time, part-time or intermittent periods. Research scientists who are full-time employees of public or private institutions of higher education, state or local governments, Indian tribal governments and certain other nonprofit organizations are eligible. The following specific assignments are currently being considered.

Wetlands Ecologist

Senior scientist established in the scientific community to develop regional scale indicators for monitoring wetlands condition.

Forest Ecologist

Senior scientist established in the scientific community to develop regional scale indicators for monitoring the condition of forest ecosystems.

Ecologist

To assist development of a research program to address EPA's role in measuring and protecting biodiversity in managed ecosystems.

Terrestrial Ecologist

Senior scientist to lead a new research project on ecological restoration.

Microbial Ecologist

Senior scientist to lead a project on assessing the risks from genetically engineering organisms released into the terrestrial environment.

Mammalian or Animal Ecologist

To lead a project for evaluating the effects of pesticides on small mammal populations, using a newly developed 20-acre field mesocosm facility.

Plant Ecologist

To develop a project for determining ecological effects at contaminated land sites.

Ecological Economist

To develop a project for valuing ecological resources as a basis for ecological risk assessment.

Landscape Ecologist

Scientist with skills in land management and decision modeling to lead a project on optimizing regional land use.

Plant Ecophysiological

Scientist with experience on effects of airborne chemicals on natural and agricultural vegetation.

Physical Scientist

Scientist with experience in hydrology, climatology or meteorology to lead a project on quantifying vegetation distribution response to climate change.

Candidates for the above positions should submit a résumé and letter of interest to Robert T. Lackey, Deputy Laboratory Director, USEPA, 200 SW 35th St., Corvallis, OR 97333 or call Dr. Lackey at 503/757-4601.

Fisheries Biologist

Jones & Stokes Associates, a leading environmental consulting firm, has an opening for an Intermediate-Level Fisheries Biologist.

M.S. in biology or related field preferred, with emphasis in fishery biology, fisheries management or aquatic ecology; minimum 3 years' experience in the fisheries profession participating in the design and/or conduct of fishery or aquatic ecology investigations. Ideal candidate will have a strong background in freshwater fisheries sampling techniques and design, statistics, IFIM, stream restoration/fisheries enhancement techniques and salmonid ecology. Candidate must have excellent writing and oral communication skills.

Jones & Stokes Associate offers an outstanding work environment, opportunities for career and corporate advancement, competitive salaries and an excellent benefits package.

Send cover letter with résumé and three references to S. Gonzales/FB, Jones & Stokes Associates, 2600 V Street, Suite 100, Sacramento, CA 95818-1914. An Equal Opportunity Employer.

