



# THE TRIBUTARY

A Newsletter of the Western Division,  
American Fisheries Society



*American Fisheries Society*  
*Western Division*

Volume 13, No. 2/December 1987

## President's Corner

I just finished reading a copy of a letter from newly installed American Fisheries Society President Stan Moberly regarding his initial thoughts toward organizing "the AFS leadership event of the year." Stan is busily preparing for the mid-year meeting of the AFS Executive Committee scheduled for March 11 through 15 in the Seattle area where we will conduct much of the business that shapes the future of AFS. To give you a better appreciation for what is happening within **your professional fisheries organization** I want to share some of his thoughts with you, that many of you may not otherwise hear directly. Before I do that, however, I want to express some of my own thoughts, philosophy, excitement, (and apprehension) about finding myself in the President's chair of the Western Division. If there is one comforting thought about all the work ahead (and behind), it's the high caliber of leadership and support I find all around me within the professional circles of the society. I have never known finer, more dedicated people, all up to their proverbial eyebrows with work, who are always willing to share the load and take on additional assignments if it means a better opportunity to improve the lot of the fisheries resource.

We in the fisheries and aquatic resources business are observing the rapid maturation of our profession and the turning of a corner that has many of us wondering if we can hang on and survive the centrifugal forces pulling at us. Through this era, we in the recent leadership roles of the Western Division have had to choose a path through the

changing and sometimes confusing activities around us to keep a sharp focus on how we can best serve you and our profession. We have opted of late to emphasize, rededicate, and sometimes constrain our efforts toward the needs of the chapters and how best to carry their wishes and needs to the parent society. If you have been at all involved in the goings on of your chapter, you have undoubtedly heard of the recent series of "retreats" that have been conducted at the Western Division (and now National) level to refocus on the business of the chapters and to better inform chapter leadership of how to use the excellent organizational structure of AFS to accomplish professional needs. I want to let you know I am committed to this same course of open and up-front communication and service to promote the working level partnership that has been so effective. We were asked by other division leaders at the recent parent society meeting in Winston-Salem, North Carolina, how we were able to so effectively transmit direct input from Western Division chapters to parent society action and resolution in the apparently short time frame and direct manner. As a result of Western Division success, the other divisions are now looking at the process for their use, the first exploratory national retreat was held at Winston-Salem, and Western Division Past President Martin has been asked to spearhead the organization of a full-blown retreat effort in Seattle in March. Don's committee members responsible for the effort will consist of the four Division Presidents. At this point you are probably asking, "what the #@!#\*@ is a 'retreat?'" In a nutshell I would describe it as an open forum preliminary process of no-holds-barred discussion that gets to "the meat" of concerns and issues before the formal (and sometimes con-

strained) business of proposing motions to be voted on, etc. The open forum process lets participants air concerns, determine where their concerns fit in the overall scheme of things, and determine whether the matter is worth pursuing or whether other priorities are more pressing for the available time and energy. It's an open roundtable discussion where friendly debate can occur without the sometimes stifling and suppressive fear of making a fool of one's self in front of peers and colleagues. I have just given you the WDAFS definition. I hope you don't check it against Webster! There may be no similarity!

I find the AFS manner of doing business to be one of the most democratic processes I have ever been associated with. If it's not responsive to you or to your chapter's or subunit's needs, would you please make the effort to contact me directly? I must admit that in all the years I have been obliquely involved with AFS leadership, I was unable to appreciate how effective and responsive it really was until I witnessed society business being transacted. It's even more impressive when you can be a direct part in the process. If you are a chapter or subunit officer, I would strongly urge you to attend at least one of the two annual national meetings of the Executive Committee to gain a real appreciation. If you are interested and have questions, I would be glad to assist in any way possible.

I want to say a word (or two) about committees within the WDAFS. It's where most of the work is done. Most of the Division's activities happen as a result of committee work. Your officers simply provide continuity and linkage between other subsections and/or the parent society, while most of the results are products of one committee or another. You will find a preliminary list of the 1987-1988 WDAFS committees and the names and addresses of their chairs in this newsletter. I strongly urge you to participate in one or more committees to be a part of progress and to help you keep better informed on recent developments. If you have the desire and/or the need to participate, please contact the appropriate chairperson.

Probably not many of you are aware that the WDAFS is a member of the Western Association of Fish and Wildlife Agencies (WAFWA). They are the folks we meet with jointly at the annual WDAFS/WAFWA conference, which we know better as the annual meeting of the Western Division AFS. The next one is scheduled for July

10 through 13, 1988, in Albuquerque. As the recent WDAFS program chairman for the meeting in Salt Lake City, I gained a much better appreciation of our need to continue our close liaison with the WAFWA folks. They are the directors and administrators of our respective Fish and Wildlife agencies and in most of our situations our bosses. I was most appreciative of the support and close working relationship I enjoyed with Director Bill Geer and his assistants with the Utah Division of Wildlife Resources. The director of the upcoming host state for the conference is always the president and chairman responsible for the success of the meeting and activities of the group for the current year. Your current WDAFS President Elect and 1988 Program Chairperson, Nancy MacHugh, is also fortunate to be working with an outstanding leader and extremely cooperative individual, Harold Olson, the Director of the State of New Mexico Department of Game and Fish. From early indications, we will enjoy another year with a ~~comfortable~~ <sup>an outstanding</sup> working relationship. As participating members of the WAFWA group we also are able to input their process and influence affairs at the state and agency directors' level. Keep this in mind if you see a needful opportunity to influence affairs at this level.

I said earlier I wanted to mention some of the philosophies expressed by President Moberly as he prepares for the March meeting of the AFS Excom. I really think it gives a healthy insight to know what kind of hands our national leadership is in and to know what his concerns and desires are for the profession under his leadership. I will paraphrase and use partial quotes from his letter to keep it brief. Remember, these are his preliminary thoughts for the direction of the meeting and may not entirely reflect the final product. I suspect however, knowing Stan, that it will bear a resemblance.

- Thursday--Devote to the Officer's Retreat and Budget Review Committee work, along with special subjects Sully (Executive Director Carl Sullivan) may have.
- Thursday afternoon--Devote to freshman orientation; new Excom members; constitution, ethics, code of practices, certification, how the society conducts business in Washington, how we are organized; responsibility as new AFS Leaders to help run the society and serve well those that elected them.

Everyone should be encouraged to attend, as we could all use the review.

- Friday--Shape the retreat atmosphere around the responsibility that the Society's leaders have to plan and guide this organization into the future; items that consider the Society's future; national issues; facilitate the general strategic nature of the retreat.
- Lunch--Three speakers: ConAg (\$6 billion food conglomerate that just invested extensively into the fish business); International Coastal Conservation Assoc.; commercial fishing community (they will tell us why they will be in business 5 years from now; how can we form partnership to assure that the resource will, in fact, be here 5 years from now). Afternoon--the long-range planning committee presents their report to us.
- Friday evening--Social: Excom and staff. Let the conversation move where it will.
- Saturday and Sunday--Roll up our sleeves and get down to dealing with running the society: split into two working groups and then back together in plenary session.
- Saturday evening--Social in the Seattle Aquarium hosted by fishing industry and user organizations: conversation and interaction.
- Purpose of meeting: Do society business; make it a AFS leadership event that every AFS leader can not afford to miss; fun; come away with a sense that the Society's best minds have spent 3 days shaping the Society's future.
- We can influence N. America's fishing future
- Need to do all we can to become more influential in fish matters in N. America.
- Create the atmosphere so that these leaders can work and function as a unit.
- Like to see the midterm meeting be a stimulating experience so that when "we take off our Excom hat" and put on our "other hats" we are better prepared to deal with the future.

- In preparation--would like to have the thinking of the officers, executive staff, and the division presidents.

I wanted you to gain a feel for the thoughts of your leadership and hopefully stimulate you to "get involved." If it's valuable for you to be a member of AFS, it's valuable for you to participate in its leadership and success.

Al Mills

## The Last Cast

It was nice to see the rain finally fall recently here in Idaho, with the rivers and streams so boney and many lakes and reservoirs so low or dry. The Western Division (WDAFS) has certainly not been in a dry spell though; the Chapters and the Division have had a productive year. It has been a gratifying experience to work with many of you on Western Division and Chapter issues and activities during 1986-1987. One of my principal missions as an officer of WDAFS has been to make AFS at the Division and Parent Society level responsive to Chapter needs and desires. I think we may have gotten a good thing started here in the West and the rest of AFS is trying to figure out how to deal with it and possibly emulate us.

Our meetings (Chapters and Division), educational workshops, and symposia have all been successful this past year. Subunit development within the Chapters is catching on quite strongly as a product of the Chapters being more responsive to members' needs, whether they be discipline or geographically oriented. As a result, more members are getting involved in AFS, which will ultimately pay off in the quality and productivity of the organization.

President Al Mills, President-Elect Nancy MacHugh, and Vice-President Pat Dwyer are all dedicated to making the Western Division a more responsive and viable entity in AFS. To do this they will need to be aware of your concerns and your assistance. Help make a difference in your profession: get involved in AFS at any level. You will find it a gratifying experience. I have enjoyed it and will continue to be involved. Thanks for the opportunity.

Donald M. Martin, Immediate Past President WDAFS

## II. AFS NEWS

Congratulations new WDAFS officers!

President .....Al Mills  
President Elect .....Nancy MacHugh  
Vice President.....Pat Dwyer  
Secretary/Treasurer ..... Dudley Reiser  
Past President.....Don Martin  
National Nominating Rep. ....Bill Platts

*Good luck in your endeavors!*

### WDAFS OFFICERS' REPORT CARD

This past year the Western Division AFS officers made major efforts to improve the dialogue between the Chapters and the Division. As part of this effort, a retreat of the Western Division AFS Executive Committee was held prior to the annual meeting in Salt Lake City this past summer. The Chapter presidents (16) and the Western Division officers (5) comprise the WDAFS Executive Committee. As a follow-up the Western Division officers (Martin and Mills) carried the products of the Western Division retreat to the Parent Society (AFS) Executive Committee meeting in Winston-Salem for action.

The issues raised by the Chapters in the Western Division and the actions taken at the AFS Executive Committee meeting in Winston-Salem were the following:

1. A Section will be added to the Chapter President's Handbook on protocol relative to developing positions on issues and working with the Environmental Concerns Committee. **Passed**
2. The AFS Executive Committee in executive session instructed the Outer Continental Shelf subcommittee of the Environmental Concerns Committee to develop a statement on offshore oil and gas development, and report their progress at the mid-year meeting of the AFS Executive Committee. In the meantime, the AFS has no position on offshore oil and gas development. **Passed**
3. Local Chapters will be notified of any meeting regarding Outer Continental Shelf develop-

ment where AFS staff will be attending. **Passed**

4. AFS committed \$10,000 to become a member of Project Wild. **Passed**
5. AFS should adopt the practice of sending an annual rebate to each Chapter based on the number of AFS dues paying members in the Chapter. The AFS dues should be raised by \$2.00 to cover this rebate. **This issue was tabled for further discussion and better definition**
6. The AFS fully supports the legal action taken by the California-Nevada Chapter to compel the National Marine Fisheries Service to fully and properly implement the Endangered Species Act as it relates to the Sacramento River Winter Run Chinook Salmon. **Passed**

As you can see, five out of six action items were passed, so we were successful this first time through the entire process. This mechanism is in place for AFS Chapter concerns to be elevated to the Parent Society in an expedited manner. Thus, the Division is serving one of its key functions, that is, funneling Chapter and member issues and concerns to the Parent Society for action. The Western Division leadership encourages all of you to work "the system" we have here in AFS, it can work. The recent results show we can change things if we want to.

**Respectfully submitted by Al Mills, President, Western Division and Don Martin, Immediate Past President, Western Division**

### PC's and Peduncles

The Computer Users Section of the national AFS (known as AFSCUS) is the fastest growing section ever. Section members receive a Quarterly newsletter and access to public domain fisheries (and other) software. The newsletter provides helpful hints, upcoming symposia dates, and a yearly update on the software library contents. AFSCUS is currently chaired by Don Chase at the Washington Department of Wildlife, Olympia.

For information on the software library call Frank Shrier at (503) 248-7463 or Anthony Frank (313) 994-3331. Even if you are not a member of the section you can get software. The cost is \$10.00 per diskette or \$5.00 if you supply a blank diskette.

## New Alignment

The Sacramento Chapter, which has 95 percent of its membership comprised of members of the California-Nevada Chapter, has decided to become a subunit of the California-Nevada Chapter.

## Hello Hawaii!!!

The Hawaii Chapter is alive and well. Their dissolution was proposed in a questionnaire (self-addressed postcard) sent to all AFS members living in that geographic region. Sixty-six percent responded that they wanted to have an active chapter and they are now planning a quarterly meeting with a technical session for next winter.

## A Challenge

At the WDAFS business meeting in Salt Lake City the membership voted to redirect the WDAFS contribution, \$500.00, to the Skinner Memorial Fund to go now towards covering the costs of sponsoring the Frances J. Allen Scholarship Raffle in 1987. The WDAFS challenges other AFS divisions and sections to match the WDAFS contribution of \$500.00.

## Cutthroat Publication

The WDAFS is currently developing a publication as part of the AFS Symposium Series on The Ecology and Management of Cutthroat Trout. This is the product of special sessions presented on the subject at the 1986 and 1987 WDAFS annual meetings. Bob Gresswell is the editor-in-charge of this effort, and his group will be establishing editorial guidelines for WDAFS subunit publications as a by-product of this effort. The publication date is targeted for July 1988.

## JOIN A SECTION

AFS section memberships as of September are listed below. Only those Sections with 200 or more members as of December will have a vote on the AFS Excom in the following year. If Section treasurers receive dues from members, they should forward them to the central office. This will enable

the Membership Department to include them in labels, lists, and future billings.

## 1987 Section Memberships as of September 30, 1987

Fisheries Management.....	1,098
Fish Culture .....	928
Computer Users.....	637
Water Quality.....	568
Fish Health.....	535
Marine Fish.....	492
Early Life History .....	377
Education .....	281
Bioengineering.....	238
Fisheries Administrators .....	220
Introduced Fish .....	194
Socioeconomics.....	175
International (1988 figures) .....	77
Genetics (1988 figures) .....	71
<b>Total .....</b>	<b>5,891</b>

If you are a 1987 AFS member in good standing, but have not yet joined any of the 13 AFS discipline Sections, it's not too late! Check out (and fill out) the form on the next page to join up.

## PHOTO LIBRARY

A fish photo library agreement between AFS and the University of Massachusetts Cooperative Extension Program has been agreed to and is now being edited into final form. The basic elements of the agreement were worked out by AFS Fish Photo committee Chairman Don Fletcher who works at the Woods Hole Lab of NMFS. The goal of AFS is to develop a photo library which includes taxonomic quality slides of all 2,200 North American fish species. The University of Massachusetts will house the collection and service orders under the conditions of the joint agreement.

## AFS LECTURESHIP PROGRAM

The American Fisheries Society plans to launch a lectureship program in 1987 to offer AFS subunits the opportunity to have outstanding members of the profession as speakers. Lecturers will be selected on the basis of general and logical criteria such as reputation, speaking effectiveness, and availability. They will be appointed to the lectureship panel for (Continued on Page 9)

If you are a 1987 AFS member in good standing, but have not yet joined any of the 13 AFS discipline sections, it's not too late! Check the section(s) of your choice, clip this form, and mail with your dues payment (payable to AFS) to:

**AFS Membership Dept.  
5410 Grosvenor Lane, Suite 110  
Bethesda, Maryland 20814**

_____	Fish Culture	\$5.00	_____	Introduced Fish	\$3.00
_____	Fish Health	\$5.00	_____	Bioengineering	\$5.00
_____	Fisheries Administrators	\$5.00	_____	Fisheries Management	\$5.00
_____	Education	\$5.00	_____	Socioeconomics	\$3.00
_____	Water Quality	\$3.00	_____	Computer User	\$5.00
_____	Early Life History	\$5.00	_____	Fisheries Genetics	N/C
_____	Marine Fisheries	\$3.00			

**NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**CITY** \_\_\_\_\_ **STATE** \_\_\_\_\_ **ZIP** \_\_\_\_\_

**COUNTRY** \_\_\_\_\_

**N**ow that you've signed up for the sections that most interest you, how about volunteering to work on a committee? Everyone's help is needed--You Could Make A Difference--so call the appropriate chairperson today!!!

# 1987-88 WDAFS COMMITTEE LEADERSHIP

## Standing Committee Chairs

<b>NOMINATING</b> (WDAFS Immediate Past President)	<b>Donald M. Martin</b> Route 1 Box 84 Star, Idaho 83702	(W) (208) 334-9498 FTS 554-9498 (H) (208) 286-7503
<b>RESOLUTIONS</b>	<b>Dennis Tol</b> 5555 Jungo Road Winnemucca, Nevada 89445	(705) 623-3676
<b>AUDIT</b>	<b>Glenn R. Phillips</b> Department of Fish, Wildlife, and Parks Cogswell Building Helena, Montana 59620	
<b>PROGRAM</b> (WDAFS President Elect)	<b>Nancy M. MacHugh</b> OR Department of Fish and Wildlife 303 Extension Hall Oregon State University Corvallis, Oregon 97331	(W) (503) 754-4431 (H) (503) 967-7364
<b>TIME/PLACE</b>	<b>Donald A. Duff</b> USDA Forest Service Wildlife Management Division 325 25th Street Ogden, Utah 84401	(801) 625-5662
<b>BYLAWS</b>	<b>Tom G. Powell</b> Colorado Division of Wildlife 317 W. Prospect Street Fort Collins, Colorado 80526	(303) 484-2836
<b>ARRANGEMENTS</b>	<i>To Be Announced</i>	
<b>MEMBERSHIP</b> (WDAFS V.P.)	<b>William P. (Pat) Dwyer</b> 27 Border Lane Boseman, Montana 59715	(W) (406) 587-9265 (H) (406) 587-0910

## Special Committee Chairs

<b>AWARDS</b> (WDAFS Immediate Past President)	<b>Donald M. Martin</b> Route 1 Box 84 Star, Idaho 83702	(W) (208) 334-9498 FTS 554-9498 (H) (208) 286-7503
<b>NEWSLETTER (Editor)</b> <i>The Tributary</i>	<b>Roger Ovink</b> CH2M HILL 2300 NW Walnut Boulevard P.O. Box 428 Corvallis, Oregon 97339	(503) 752-4271

<b>RIPARIAN</b>	<b>Bruce H. Smith</b> 2403 Victor Road Rock Springs, Wyoming 82901	(307) 382-5350
<b>ENDANGERED SPECIES</b>	<b>Jack E. Williams</b> U.S. Fish and Wildlife Service 2800 Cottage Way, Room E-1823 Sacramento, California 95825	(916) 978-4866
<b>EDITORIAL GUIDELINES</b>	<b>Bob Gresswell</b> U.S. Fish and Wildlife Service Box 184 Yellowstone National Park, Wyoming 82190	(307) 344-7381
<b>FISHERIES ECONOMICS</b>	<b>Virgil K. Moore</b> ID Department of Fish and Game P.O. Box 25, 600 S. Walnut Boise, Idaho 83707	(208) 334-3791
<b>HABITAT INVENTORY PROCEDURES STANDARDIZATION</b>	<b>William T. Helms</b> Department of Fish and Wildlife Utah State University Logan, Utah 84322-5200	(801) 750-2543
<b>LEGISLATIVE</b>	<i>To Be Announced</i>	
<b>PUBLIC LANDS</b>	<b>Dave Cross</b> Senior Fisheries Scientist Ott Water Engineers 2334 Washington Avenue Redding, California 96001	(916) 244-1920
	(home) 6400 Highway 299 E. Redding, California 96003	(916) 549-3363
<b>TRADE SHOW</b>	<i>To Be Announced</i>	
<b>WATER DEVELOPMENT AND STREAMFLOW (Co-chairs)</b>	<b>Dudley Reiser</b> 2012 Elderwood Drive Martinez, California 94553	(415) 283-7077
	<b>Tom Wesche</b> Wyoming Water Research Center P.O. Box 2067, University Station Laramie, Wyoming 82071	(307) 766-2143
<b>MARINE FISHERIES</b>	<i>To Be Announced</i>	
<b>NATIVE AMERICAN FISHERIES</b>	<b>Frank L. Halfmoon</b> Branch of Fisheries USDA Bureau of Indian Affairs P.O. Box 3785 Portland, Oregon 97208	(505) 231-2326



specific periods of time so that new speakers are added to the panel each year. The lecturers will choose their own topic(s), which may be concerned with fisheries questions, research, or general issues relating to fisheries, science, or society. If you have questions about the lectureship program, please contact:

D. W. Coble  
Chairman, AFS Lectureship Committee  
Wisconsin Cooperative Fishery Research Unit  
University of Wisconsin  
Stevens Point, Wisconsin, 54481

## NEW LISTINGS

A new fish culturist registry has been published by the AFS Fish Culture Section. The Registry provides background information for over 700 members involved in aquaculture. Fish Culture Section members receive a free copy while non-members may order a copy for \$10.00 from the Fish Culture Section, c/o Nick Parker, 503 Bibb Street, Marion, Alabama, 36756.

## NEW AFS DIRECTORY

The new AFS directory of North American fisheries and aquatic scientists (2nd edition) has been published and advance orders have been filled. The Directory contains more than 9,000 names of aquatic scientists and includes job titles, phone numbers, addresses, and professional specialties and activities. The price is \$25.00; order one today from the AFS central office.

## WDAFS ANNUAL MEETING

An excellent program and quality arrangements were provided at the WDAFS annual meeting in Salt Lake City, Utah. It was a joint meeting with the Western Association of Fish and Wildlife Agencies (WAFWA). The Utah Division of Wildlife Resources, the Bonneville Chapter AFS and WDAFS President-Elect Al Mills did an outstanding job, and are to be commended. The theme of the meeting was "Surviving on a Shoestring." The meeting was well attended with 336 total registered of which 220 were AFS members.

Five awards were presented by the WDAFS at a joint WDAFS/WAFWA awards luncheon:

**Award of Excellence:** Lauren R. Donaldson and John R. Donaldson

**Bob Borovicka Conservation Achievement Award:** Stream Habitat Improvement and Conservation Personnel of Wyoming Game & Fish Department

**Arco Student Award:** Neal Muirhead

**Chapter of the Year:** California/Nevada Chapter

**Going the Extra Mile Award:** Donald M. Martin

Only one resolution was presented. The California/Nevada Chapter sought the support of the Western Division and the Parent Society in their efforts to have the Sacramento River winter run chinook salmon listed as an endangered species. This resolution passed unanimously. (*Editor's note: NMFS declined to list the winter chinook. The California/Nevada Chapter and other listing advocates are considering a suit against NMFS to require that listing occur.*)

## QUESTIONNAIRE RESULTS

The WDAFS sent out a questionnaire to its membership this past Spring to find out why they belonged to AFS. North Central Division Past President Tim Modde tallied the following results (*Editor's note: only 441 of the 2,300 ballots sent were returned. What happened to the rest of you? Come on--get involved!*)

1. Forum for discussion
2. Publications
3. Environmental advocate
4. Professional network
5. Symposia
6. Continuing education
7. Social activities
8. Logo identification

## RIPARIANS ARE ON THE MARCH!!

Research and management of riparian systems have greatly expanded in the last decade. However, an even greater amount of work should be recognized and put into wider practice. The objective of

the Riparian Committee is to discover and disseminate riparian research and management information. This year's committee members deserve our thanks for their pursuit of the following goals:

#### **Western Division Interagency Riparian Survey**

Paul Turner has led the effort to develop a riparian management survey to determine the present scope of riparian management programs in the west. If your agency has not received a survey and would like to be included, please contact Paul (505/646-1707).

#### **Nevada Riparian Status, Conditions and Issues**

Frank Doherty is working with the Nevada Game and Fish Department to identify and publicize riparian issues in Nevada. If you have information which would help in this endeavor, Frank would glad to hear from you (702/382-6640).

#### **U.S. Forest Service and Bureau of Land Management--Riparian Challenge**

Al Collotzi, Dave Gibbons, and Don Duff have a wager concerning which agency (USFS or BLM) is more accomplished in riparian projects. Lou Carufel is coordinating the development of evaluation criteria for Alaskan systems. Don Martin is coordinating the formation of an "arbitration committee" which will develop the criteria and procedures for judging the challenge.

#### **Interdisciplinary Professional Crossover**

Ray White, Geoff Hogander and Nick Schmal are coordinating the dissemination of AFS-Western Division riparian initiatives through other professional societies and conservation organizations. The goal of this effort is to develop cooperative relationships with other organizations to more effectively solve western riparian management problems.

#### **Accelerated Erosion**

Roger Dean (308/293-1572) is assisting in the full integration of non-point pollution problem solving theory and technology into applied prac-

tice. Roger's guidance (combined with the development of local cooperative riparian initiatives) will help to facilitate riparian habitat improvement efforts and keep them in line with national policies, goals, and support services.

#### **Riparian Extension Information Transfer**

Dan Guthrie (503/754-4531), Alan Thomas, Roland Risser, and Jack Griffith are developing a service-oriented extension network. This network will combine the products of all the other committee initiatives into a reference system for those in need of riparian problem assistance. Key elements of the network will be a file of video tapes, slide programs, technical references, and a reference system of individuals with riparian management experience.

### **News Committee**

An AFS news committee has been charged with investigating the feasibility of AFS publishing an informative newspaper with items drawn from the far reaches of the Society. The committee of Verl Stevens (Chair), Bob Kendall, Stan Moberly, Carl Sullivan, and Dave Whitehurst will investigate format, editorial assignments, publication policy, and budget and report to the Excom.

## **III. FISHERIES NEWS FROM AROUND THE WEST (AND ELSEWHERE)**

### **ALASKA-WASHINGTON-OREGON-CALIFORNIA**

Congressman Don Young (R-Alaska) introduced legislation designed to raise money for fisheries research in the 200-mile Exclusive Economic Zone. The bill, titled the "Fisheries Research Funding Act of 1987," would require commercial and recreational fishermen and off-shore processors to contribute to fisheries research through payment of a modest fee.

## TWO BILLS MOVING IN D.C. TO COMBAT MARINE POLLUTION

The full House Merchant Marine and Fisheries Committee has voted to approve two bills designed to combat marine pollution. One of the bills would sharply restrict the use of marine paints containing the toxic chemical tributyltin (TBT). The other bill would require major reductions in the amount of plastic trash and other garbage entering the oceans. The Committee, chaired by Congressman Walter Jones (D-NC), endorsed both bills unanimously.

## SEAFOOD CONSUMPTION UP IN U.S.

U.S. seafood consumption is booming. Per capita seafood consumption increased by 6.6 percent between 1984 and 1985. We now consume 14.5 pounds of seafood (that's 35 pounds live-weight), an increase of 11 pounds per capita intake since 1975. Most of this increased consumption is coming from imports and the United States has a real opportunity to become self-sufficient by increasing aquaculture and domestic commercial fisheries. The American Fisheries Society also has an opportunity to become more involved in this cultural and commercial fisheries industry expansion.

## GRAZING/RIPARIAN HEARING

The House National Parks and Public Lands Subcommittee, chaired by Congressman Bruce Vento (D-MN), held a hearing September 22 to review three grazing fee bills. The bills, submitted by Congressmen Mike Synar (D-OK), Buddy Darden (D-GA), and Ron Marlenee (R-MT), cover the spectrum from codifying the present Executive Order that maintains the PRIA formula and extends the \$1.35/Animal Unit Month (Marlenee's) to Synar's bill that requires an increase in grazing fees to fair market value (\$6.65) and earmarks a portion of the fees for riparian area restoration. The WDAFS position is that we only care about the fee charged as a function of being able to dedicate funds to rangeland habitat restoration that is designed to achieve true multiple use. We feel riparian restoration is key to this effort.

## THIS IS NO FISH STORY...

Fifty-nine million Americans spent 988 million days fishing in 1985. According to the Sport Fishing Institute, this is a 15 percent increase over 1980. At \$600.00 each, anglers spent \$18 billion.

## GAWS

The General Aquatic Wildlife System (GAWS, pronounced "JAWS") is the Intermountain Region's (R-4) Fish Habitat Relationships (FHR) Program. It contains a series of models which can be used separately or in combination. It provides a user-friendly storage and retrieval system for both fisheries habitat inventory data as well as an efficient analysis process to display resulting data outputs. Some models provide economic analysis for projects, angler days, and fish losses. The models in GAWS are specific to resident or anadromous salmonoid species.

Additional information on the GAWS programs can be obtained from any R-4 Forest Fisheries Biologist, the Regional Fisheries Program Manager, Don Duff, (801/625-5662) or Ralene Maw (801/625-5667).

## RECREATIONAL REPORT

The President's Commission on Americans Outdoors has drafted a report with recommendations that address developing better information on recreation values, a conservation/recreation ethic, spurring local action, environmental education, quality of recreation services, greenways and river protection. Among the recommendations contained in the draft report:

- Establish a network of private, local, and state greenways to link together open spaces
- Protect 2,000 of the nation's best remaining free-flowing river segments by the year 2000
- Incentives for private landowners to provide recreation opportunities on their lands
- Elevate recreation to the status of a major use and value on federal multiple use lands and waters

- Document the values and economic impacts of recreation use of outdoor resources
- Each community/interest group should develop and promote a code of ethics
- Establish a nonprofit national recreation resource management training institute
- Establish a public/private sector research advisory council to coordinate recreation research

### NEW FILM

Fishing as an alternative to drugs is the theme of a 5 minute documentary produced by the Future Fisherman Foundation. "Hooked on Fishing--Not Drugs" is being shown by drug prevention programs and community service groups. "Hooked on Fishing--Not Drugs" (VHS) is available for \$10.00 (Plus \$2.00 handling) from Future Fisherman Foundation, One Berkley Drive, Spirit Lake, Iowa 51360.

### FISHING IS UP, HUNTING IS DOWN

According to 1985 license information released by the U.S. Fish and Wildlife Service, revenues derived from the sale of angling and hunting licenses continue to climb to record levels. There were 29,673,190 fishing-license holders in the United States in 1985--a healthy increase over 1984's total of 29,015,918. Hunting license sales dropped to 15,897,572 in 1985, from 16,018,250 in 1984.

### TROUBLE IN PARADISE

Problems facing Hawaii's aquaculture industry will be the focus of a newly formed team of scientists from the U.S. Department of Agriculture Research Unit, located on the Island of Oahu. The team will concentrate on two of the most pressing problems of Hawaii's \$2.8 million aquaculture industry: the high cost of importing top-quality fish food from the Orient and the diseases that can wipe out shrimp and other fish that are raised in captivity.

### NATIONAL FISHERIES POLICY

Formulation of a national recreational fisheries policy took a step forward on April 29 when USFWS Director Frank Dunkle convened a meeting of government agency and private sector representatives in Washington. Jane Quiring, Director of recreational fisheries for the Canadian Ministry of Fisheries and Oceans, gave an excellent summary of Canada's experience in developing their recreational fisheries policy. The USFWS will serve as facilitator for development of our national (as opposed to federal) policy. Plans are to have it completed in time for National Fishing Week 1988 (June 6-12).

### GREAT NEWS!!

The biggest chinook salmon run in the 20-year history of the Trinity River Hatchery in Lewiston, California, has been reported, with over 27,400 spring and fall run fish being trapped. The 17 million eggs taken greatly exceed the carrying capacity and mitigation requirements of the hatchery.

The Trinity River Basin Field Office has worked with U.S. Fish and Wildlife Service and California Department of Fish and Game personnel to rear 5 million salmon in excess of hatchery capabilities. These eggs are being moved to offsite rearing ponds on special in-pond hatchery trays. The fish will be reared for 2 to 4 months, then tagged and trucked to various locations along the Trinity River. Restoration activities in the next 3 years will concentrate on spawning and rearing habitat improvements within the river to prepare for the return of these fish.

### FOUNDATION FORMATION

The formation of three non-profit foundations that will channel tax-deductible private sector funding towards the development of salmon sport fisheries in Canada has been announced by Tom Siddon, minister of fisheries and oceans. Pointing to the precedent set by wildlife foundations such as Ducks Unlimited, Siddon said he believes these three national salmon foundations--Atlantic, Great Lakes, and Pacific--will generate tremendous support for salmon enhancement and for the restora-

tion and expansion of fish habitats throughout Canada.

### **SOMEBODY CALL THE WHITE HOUSE...**

The U.S. purchased \$4.8 billion of seafood from abroad in 1986 while selling only \$1.3 billion worth of seafood to foreign markets. We also imported \$2.8 billion worth of non-edible fishery products while selling only \$.07 billion overseas. Thus, next to oil, fisheries products remain the number two cause of the U.S. foreign trade deficit. What an embarrassing paradox for a country with more marine fisheries resources (20 percent of the world's supply) than any other country on earth.

### **YOUR IMMEDIATE HELP IS NEEDED!**

Each year National Fishing Week must be proclaimed by action of the Congress. The National Fishing Week Steering Committee is trying to obtain the necessary Senate sponsors (we have 22 and need 51) before we approach the House. **Please pick up the phone and call your senators at (202)224-3121** and ask them to co-sponsor Senate Joint Resolution 190 to proclaim National Fishing Week June 6-12, 1988.

### **NEW JOURNAL**

Asian fisheries science is the new journal of the Asian Fisheries Society. The journal will serve as a medium of communication for fisheries and aquaculture scientists carrying out research related to the Asian region. Annual subscription rates for one volume (2 issues) of Asian Fisheries Science are \$9.00 (U.S.) for individual members and \$12.00 for nonmembers. For airmail deliver in Asia add \$6.00; for airmail elsewhere add \$8.00.

For further information contact Mr. Jay L. MacLean, Executive Editor, ICLARM, MC P.O. Box 1501, Makati, Metro Manila, Philippines.

### **COPPER INFO NEEDED**

The AFS Fisheries Management Section needs information on the use of copper as an algicide in hatcheries. The information will be used by EPA in developing requirements for incident monitoring. If you can help contract Mark Bookbinder,

Orius & Associates, 2329 Oak Drive, Ijamsville, Maryland, 21754, or call (301) 831-8594.

## **IV. MEETINGS, SEMINARS, SHORT COURSE**

### **START PLANNING FOR 1988**

**Canadian Conference for Fisheries Research**--January 5-6, 1988. Museum of Natural Sciences, Ottawa, Ontario. For information: Dr. K.T. Frank, Department of Fisheries and Oceans, Bedford Institute of Oceanography, Marine Fish Division, P.O. Box 1006, Dartmouth, Nova Scotia B2Y4A2.

**Restoring the Earth 1988**, a national gathering to consider the restoration of all natural resources and the redesign of urban areas, will be held January 13-16 at the University of California, Berkeley. The goal of the conference is to further the exchange of scientific information on restoration and to present the accomplishments and capabilities of restoration technology in resource management and planning. Information is available from Restoring the Earth Conference, 693 Mission Street, Room 708, San Francisco, California, 94705, (415) 777-9515.

**Stream Rehabilitation Training**--The Oregon Chapter of the American Fisheries Society will provide training in stream rehabilitation on February 10 to 11, 1988. The training will cover stream rehabilitation from design through evaluation. Each instructor is assembling a section of the manual that will be given to students. (Editor's note: The 100 positions available for this training session have been filled. If you would like to secure a copy of the training session manual, contact Bob House, USBLM, P.O. Box 3227, Salem, Oregon, 97302, (503/399-5608).

**An International Seafood Trade Show** has been announced by Sea Fare Expositions, Inc. The dates are February 17 to 19, 1988, at a Long Beach, California Convention Center, with the Hyatt Regency Long Beach as host hotel. About 450 exhibitors and 10,000 visitors are expected. For information contact Sea Faire Expositions, Inc., 3510 1st Avenue, N.W., Seattle, Washington, 98107, or call (206/547-6030).

**Colorado-Wyoming Chapter of the American Fisheries Society 23rd Annual Meet-**

ing--March 1-3, 1988 Fort Collins, Colorado. A MYSID-FISHERIES SYMPOSIUM will bring together fisheries biologists and others to discuss their experiences with Mysis and gamefish species, to look for potential solutions, and to establish lines of communication among fisheries professionals with similar objectives. For information, contact Tom Nesler, Colorado Division of Wildlife, 317 West Prospect, Fort Collins, Colorado, 80526, (303) 484-2836.

**The California Aquaculture Association Annual Meeting** will be held March 9-11, 1988, at the Holidome Holiday Inn, Sacramento, California. For information contact Fern Ray, P.O. Box 1004, Niland, California, 92257, or phone (619) 348-05467.

**Pacific Fisheries Biologists meetings**--March 30th to April 1, 1988, at the Ocean Shores Convention Center, Ocean Shores, Washington. This will be the 50th year of PFB, and WDAFS member Mike Dell is in charge of the "MOSSBACKS" committee, and will be working hard to "pull the MOSSBACKS in." Mossbacks can contact Mike at 1418 "D" Street SW, Ephrata, Washington, 98823 (509/754-3541, ext. 2150). WDAFS member Ken Chew has already started organizing the program. Anyone (PFB member or not) interested in contributing to the workshops, contact Ken Chew (206/543-6774) for details (School of Fisheries, University of Washington, Seattle, Washington, 98115).

**An international symposium on fishing with electricity** will be held in England on April 11 through 15, 1988. Sessions will cover electrophysiology of fish, electric fishing apparatus and the electrical field, influence of environmental factors, sampling by electrical fishing, electrical screens, safety requirements, and field experiences. For more detailed information, contact Dr. I. Crowx, Humberside College of Higher Education, School of Science, Cottingham Road, Hall, England.

**43rd Annual Convention of the National Fisheries Institute**--April 26-30, 1988. Marriott Marquis Hotel at Times Square, New York City, New York. For information: National Fisheries Institute, 2000 M Street, NW, Suite 580, Washington, D.C., 20036, (202) 296-5090.

**"Brown Trout Biology, Use and Management: Putting the Puzzle Together"** is the theme of a national workshop to be held April 28 through

30, 1988, at the Great Smokies Mountain Hilton, Asheville, North Carolina. For further information, contact T. Wayne Jones, Division of boating and Fisheries, 5112 N. Salisbury Street, Raleigh, North Carolina, 27611.

**The first international meeting to discuss all aspects of marking and tagging fish** is planned for June 27 to July 1, 1988, at the University of Washington in Seattle. Fish-marking technologies have rapidly improved and diversified embracing physics, electronics, chemistry, genetics and morphology. For more information: Nick C. Parker, Southeastern Fish Cultural Laboratory, Route 3, Box 86, Marion, Alabama, 36756, (205) 683-6175.

### WDAFS 1988 CALL FOR PAPERS

The annual Western Division AFS meeting, which is held jointly with the Western Association of Fish and Wildlife Agencies (WAFWA) is scheduled for July 10-13, 1988, in Albuquerque, New Mexico. Superb accommodations, conference rooms and reasonable rates will be provided at the Holiday Inn Journal Center. Attendees are encouraged to bring their families and/or guests to experience the enchantment of America's great Southwest.

The conference theme is "CHALLENGE--THE FUTURE." The meeting will provide technical sessions designed to let you bring home techniques and strategies which will improve the way you do your job or manage your program. The WAFWA sponsored portion of the program (beginning Monday) will provide attendees with one of the highest caliber sequence of training workshops available, with professional consultants and facilitators (including members of John Nesbitt's group--they authored "Megatrends") teaching skills necessary to manage in this changing environment.

Those wishing to participate in the WDAFS technical sessions should submit an abstract of no more than 2 or 3 paragraphs to:

Nancy M. MacHugh  
WDAFS 1988 Program Chair  
Oregon Department of Fish and Wildlife  
P.O. Box 59  
Portland, OR 97207

Please use the same title on your abstract that you will be using on your submitted paper. Abstracts should be submitted no later than January 15, 1988. Authors of accepted abstracts will receive further instructions for the preparation of their material for compilation in conference records. Abstracts should be typed on 8-1/2- by 11-inch paper, one side only, double spaced, with the format as follows:

1. Title (all capital letters)
2. The word "Abstract" followed by the text of the abstract
3. Put the name(s), affiliation(s), telephone number(s) and address(es) of the author(s) on a cover sheet entitled "First Call for Presentation" (NOT ON THE ABSTRACT).
4. The abstract should describe in clear, objective terms the purpose of the work, methods used, area or species covered, and should summarize the results and conclusions.

**International Billfish Symposium--August 1-5, 1988.** in Kailua-Kona, Hawaii The billfishes of the Atlantic, Pacific, and Indian Oceans will be the topic of discussion. The purpose of this symposium, the 13th conference in the annual Marine Recreational Fisheries series, is to review and evaluate science and management relative to billfishes--the marlins, broadbill swordfish, sailfish, and spearfishes--in order to foster more effective management and conservation domestically and on a worldwide basis.

**A Conference on Chemoreception in Aquatic Organisms** will assemble international experts whose research involves the detection and processing of chemical information by freshwater and marine animals. The meeting will be held at Louisiana State University, Baton Rouge and at Louisiana Universities Marine Consortium Laboratory in Cocodrie, Louisiana, August 6 through 9, 1988. For further information, contact Dr. John Caprio, Department of Zoology and Physiology, Louisiana State University, Baton Rouge, Louisiana, 70803, 504/388-1132.

**The 118th Annual Meeting of AFS--September 9-15, 1988.** Royal York Hotel, Toronto, Ontario. For information: Carl R. Sullivan, Exec. Dir., AFS, 5410 Grosvenor Lane, Bethesda, Maryland, 20814, (301) 897-8616.

**Fisheries Bioengineering Symposium--October 24 through 28, 1988,** Columbia River Red Lion Inn, Portland, Oregon. Presented by the Bioengineering Section of the American Fisheries Society, this conference will focus on solutions to major bioengineering problems that can limit fish production in developed river systems. For general information, contact David Owsley, U.S. Fish and Wildlife Service, Dworshak National Fish Hatchery, P.O. Box 18, Ahsahka, Idaho, 83520, (208) 476-4591.

## **AND FOR ALL YOU LONG-RANGE PLANNERS--1989!**

### **Aquaculture '89 First Call For Papers**

Submit by February 1, 1988, your 150-word abstract to:

**Dr. Terrence B. Kayes**  
University of Wisconsin Aquaculture Program  
Department of Food Science  
103 Babcock Hall  
University of Wisconsin-Madison  
Madison, Wisconsin 53706  
(608) 263-1242

Please contact Dr. Kayes for more information about guidelines for preparing your presentation.

## **V. JOB/VOLUNTEER OPPORTUNITIES**

### **JOBSOURCE**

JOBSource 800 number is now available and operators are ready to aid you in finding a job. If you are interested in a fisheries job or a better fisheries job, call 1-800-327-4728, and ask that a job form be sent to you. Enter the requested information and return as quickly as possible. You will promptly receive a printout of opportunities. The cost for the first search for AFS members is \$25.00 and \$20.00 for subsequent searches. Cost to non-members is \$49.00.

Attention everyone with a fisheries job to fill! The AFS JOBSource computerized job service is now operational serving you with daily updates. As an introductory offer all employers may list

fisheries-related jobs without cost. Send your job announcements to: AFS JOBSource, 418 South Howes Street, Suite D, Fort Collins, Colorado, 80521. For your convenience you may order Position Announcement forms by writing that address or phone toll free 1-800-327-4728.

### **FEDERAL GOVERNMENT SETS UP NATIONAL REGISTER**

The federal Office of Personnel Management now has a single nationwide register for professional biologists (general, fishery, wildlife and micro-) at the GS-5 and 7 entry levels, administered in Macon, Georgia. The B.S. degree is usually qualification for the GS-5 level; a year of advanced education, professional experience or superior scholastic achievement will qualify for the GS-7 level. The register will remain open until December 31, 1988. Application forms (SF-171) may be obtained from any OPM office, and many other federal offices, and should be sent to OPM, P.O. Box 9025, Macon, Georgia, 31927-4599. There is no standing register for biologist positions at higher levels or for Biological Technicians; see your local OPM office.

### **BIOLOGICAL SCIENTISTS**

Several positions are available in fisheries research throughout Florida. Biological Scientist II positions (salary \$19,307) require a bachelors degree in one of the biological sciences and 1 year biological experience or a masters degree in biological sciences. Biological Scientist III positions (salary \$23,146) require a bachelors degree in one of the biological sciences and 2 years professional experience, or a masters degree and 1 year experience. To apply, submit application and detailed resume to Bill Coleman, P.O. Box 1903, Eustis, Florida, 32727-1903. For details call (904) 357-6631.

### **WDAFS HISTORIAN/ARCHIVIST**

We are looking for an individual who has somewhat of a well-organized nature and has basic correspondence and filing skills and a willingness to serve the Western Division in the capacity of a historian/archivist. There is a minimal salary of a few free lunches and an occasional "attaboy" involved

for anyone willing to serve. If interested in this lucrative position, please contact Al Mills or Dudley Reiser to negotiate the benefits.

### **KANSAS**

Career Opportunity "booklets" from the Kansas Department of Wildlife and Parks have been received along with a request that they be distributed to those interested. Anyone wishing a copy should send a self-addressed 8-1/2" x 11" envelope with 56 cents postage to Mike Theurer, Chief, Fisheries division, Kansas Department of Wildlife and Parks, Box 54-A, Pratt, Kansas, 67124-9599. Ask Mike for a copy of their "Career Opportunity" booklet.

### **REVIEWERS**

The J. Frances Allen Scholarship Committee of AFS is soliciting volunteers to review proposals. This scholarship will be awarded to a female Ph.D. candidate in her second or third year. Since the research can be conducted in any branch of fisheries science, we need qualified reviewers in many fields. Anyone interested should contact Vicki Blazer, Cooperative Fish and Wildlife Research Unit, School of Forest Resources, University of Georgia, Athens, GA, 30602, (404/542-1165).

### **AQUATIC TOXICOLOGIST/MOLECULAR BIOLOGIST**

The Mississippi State University's College of Veterinary Medicine is seeking qualified applicants for the position of Aquatic Toxicologist/Molecular Biologist. Applicants should have DVM and/or Ph.D. degree. Preference given for DVM degree.

Responsibilities include participation in the College research program with emphasis in toxicology as related to molecular and cellular physiology in warmwater aquatic species (catfish). Teaching responsibilities would involve didactic and laboratory training for professional and graduate students. Qualified applicants are invited to submit a letter of application, a current curriculum vitae, and names of three references to: Dr. J.V. Kitzman, Chairman, Department of Basic and Applied Sciences, College of Veterinary Medicine, Mississippi State University, P.O. Drawer V, Mississippi State, Mississippi, 39762.



## MARINE AQUACULTURIST

Applications are invited for a faculty-level position for a continuing research program of culturing pelagic squids in closed seawater systems. The applicant should have a Ph.D. in marine biology, biological oceanography or related field with a minimum of 3 years practical experience in marine aquaculture, preferably closed-system culture. The appointee will participate in the planning, analysis, and publication of culture experiments. Applicant should have working knowledge of bios-tatics and seawater filtration and chemistry. Appointee will have the opportunity to pursue basic research in a subject related to the squid culture program. Highest priorities will be given to those applicants whose research specialty is in disease prevention, development, reproduction, or systems design.

Send curriculum vitae, selected reprints, and names of three scientific references to: Dr. Roger T. Hanlon, Chief, Division of Biology and Marine Resources, the Marine Biomedical Institute, The University of Texas Medical Branch, Galveston, Texas, 77550-2772.

## BIOLOGIST II

A Biologist II position (Assistant District Manager Supervisor) is available in Marshall, Texas, with the Texas Parks and Wildlife Department. Salary is \$1,844/month. Qualifications include B.S. (M.S. desired) in fisheries biology plus 1 year's experience. Advanced degree may be substituted for experience. Send application to Personnel Branch, 4200 Smith School Road, Austin, Texas, 78744, or call (512) 389-4954.

## PROFESSOR/COORDINATOR

An Associate or Full Professor and Aquaculture Coordinator is sought by the University of Idaho in Moscow, Idaho. The successful applicant will have a joint appointment in the College of Agriculture and the College of Forestry. The new full-time professor will be asked to build a university-wide integrated program of research, extension, and training to address the needs of a large, existing aquaculture industry in Idaho. Requires doctorate in relevant field plus proven ability to establish and manage cooperative industry/university programs.

Salary commensurate with experience. Applicants must submit (1) a personal letter stating interest in the position and describing relevant education and experience, (2) a resume, and (3) names, addresses, and phone numbers of four persons who can evaluate applicant's qualifications. Deadline is January 15, 1988. Contact is Dr. Ernest D. Ables, Search Committee Coordinator, Fish and Wildlife Department, University of Idaho, Moscow, Idaho, 83843, (208) 885-6434.

## BIOLOGIST I

Biologist I job opening; monthly salary \$1,742. Application deadline imminent. Call Oklahoma Department of Wildlife Conservation personnel office (405) 521-3851, immediately for details.

## HATCHERY MANAGER I

Job opening at the same salary as above. Ask personnel officer about this job also.

## FISHERIES BIOLOGIST/RESEARCH ANALYST

Coordinates and facilitates the analysis of technical fisheries data through direct analysis, or by providing biologists with software, training and support. B.S. in Fisheries Science plus four years research experience. Experience with fisheries statistics and research models is required. Salary \$23,938 to \$29,420. Submit resume and transcripts to the Utah Department of Natural Resources, Human Resources, 1636 West North Temple, Salt Lake City, Utah, 84116.

## WILDLIFE PROGRAM COORDINATOR, NONGAME FISH

Coordinates, develops, directs and evaluates the Division Statewide nongame fish, amphibian, and reptile programs and budgets. Major portion of program responsibilities will deal with fisheries. Designs and directs technical research. M.S. in Fisheries Science plus 3 years professional biological experience. Salary \$26,643 to \$31,633. Submit resume and transcripts to the Utah Department of Natural Resources, Human Resources, 1636 West North Temple, Salt Lake City, Utah, 84116.

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## THE TRIBUTARY

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