



# ONCORHYNCHUS

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## Steller Sea Lion Foraging

*Stellar sea lions at a haul out in Southeast Alaska.*

*Brendan P. Kelly*

The rim of the North Pacific Ocean from southern California to Japan is home to Steller sea lions (*Eumetopias jubatus*). The largest of the Otariidae, the pinniped family that includes sea lions (7 extant species) and fur seals (10 extant species), Steller sea lions average 275 kg (adult females) to 1,000 kg (adult males). Once numbering 300,000 or more in the North Pacific (about 85% in Alaskan waters), Steller sea lions probably ate several hundred million metric tons of pollock per year in the Gulf of Alaska. While pollock biomass soared in the Gulf of Alaska since the mid 1970s, Steller sea lion numbers there and in the Aleutian Islands declined by over 70%. The mismatch in those trajectories may, in part, have to do with demographic changes among pollock. It also has become clear, however, that other fish and cephalopods are important prey, and much current research is focused on the possibility that changes in prey communities are behind the declines in Steller sea lions, harbor seals (*Phoca vitulina richardsi*), and some seabirds.

In the Gulf of Alaska and the Aleutian Islands, the National Marine Mammal Laboratory of the NMFS found

the most common prey to be Atka mackerel, pollock and other gadids, salmon, cephalopods, and small schooling fish (herring, sand lance, capelin, and eulachon). They also found a strong, inverse relationship between the diversity of prey consumed and rates of sea lion decline in six local areas.

Steller sea lions east of Cape Suckling are considered a separate stock from those to the west based on genetic data and the fact that the population trend has been positive in the east throughout the decline of the western stock. The difference in population trends begs comparison of the ecology of the two stocks.

Mary Willson and her colleagues at the Alaska Forestry Sciences Laboratory have observed Steller sea lions feeding intensively on a eulachon run in southeastern Alaska. It may be that the annual intake of sea lions is dominated by a finite number of such predictable concentrations of prey, and Jamie Womble, one of my graduate students at the Juneau Center of the School of Fisheries and Ocean Science (UAF), has begun to investigate the problem using GIS to relate the seasonal

Continued on page 3

## The President's Column

*Carol Ann Woody*

The annual meeting was a great success. A community is less of a community if fragmentation or divisiveness exists, and if the rifts are deep, it is no community at all. We expect and want diversity, and there is dissension in the best of communities. But, "vital communities face and resolve differences" (John Gardner 1990, *On Leadership*, The Free Press, NY, NY).

I have recently witnessed an increasing rift develop between state and federal agencies; some involved are AFS members. At recent meetings, a state fisheries biologist spoke condescendingly and publicly to a federal fisheries biologist. Scientific disputes at the last Board of Fish meetings and a recent announcement that the state could no longer afford to participate in the federal-state subsistence co-management process widened the rift. If established professionals nurture this "we-they" divisiveness, and suppress dissent, the mission and goals of The American Fisheries Society will be undermined.

First and foremost, on joining AFS, we accept the responsibility to serve and manage aquatic resources for the benefit of those resources and of the public, based on the best scientific data, as specified by the Society's "North American Fisheries Policy" (see *Fisheries* 21(3):26- 9). Members will act ethically in their relationship with the general public and with their employers, employees, and associates.

I urge you as AFS members to discuss divisiveness within and between agencies. Do not allow the establishment of a "we-they" barrier between agencies. Do not let agency loyalties block self-examination. Be open to peer review, as it can only improve our science and our efforts toward conservation. When you conduct a peer review, privately or publicly, do it with respect and value the integrity of the person whose work you are reviewing. If we allow a chasm to form between agencies, it will only undermine the conservation of our aquatic resources. The difficulty we face in our profession, to conserve our resources for the good of all, as populations fluctuate widely and our understanding of why is limited, we need to work together. ♦



**Steller Sea Lion Foraging, from page 1**  
distributions of pinnipeds and forage fish aggregations in southeastern Alaska. Annually recurring use of certain haulout sites by sea lions may hint at where prey are aggregated and suggests that the same individual sea lions may return to particular sites. Some researchers believe, however, that, in fact, there is little or no fidelity to those sites. UAS student, Jacob Kammermeyer and I have developed a method of recognizing individual sea lions based on pelage markings, and one use of the method will be to determine site fidelity.

The ADFG is using satellite-linked transmitters to follow sea lion movements in part to identify likely foraging areas. On a finer scale, Mike Sigler (Auke Bay Laboratory) and I are beginning an effort to relate the movements and foraging behavior of sea lions to specific prey. Mike will use acoustic and net sampling to determine prey availability monthly in the vicinity of two sea lion haulouts. We also will visually and telemetrically follow individual sea lions from Benjamin Island to foraging areas where we will sample prey as the sea lions forage. The foraging strategy employed in a growing population should aid our understanding of the dynamics of the declining stock. ♦

## Electrofishing Injury Update

*Jim Reynolds*

A 5-year study on electrofishing-induced injury in fishes at the University of Alaska Fairbanks is nearing completion. Led by Dr. Jim Reynolds, the study is aimed at evaluating the scope of this problem and finding a solution where problems exist. Salmonids are clearly susceptible to this type of injury. Various states, including Alaska, have placed moratoria on the use of electrofishing where salmonid stocks of particular concern occur. However, these restrictions make it difficult to monitor recovery or status because electrofishing is often more effective than other sampling tools. Furthermore, information on injury in non-salmonids, including warm-water species, is scarce.

Jim and his graduate student, Mike Holliman, have been conducting experiments in Alaska, Mississippi, North Carolina, Texas and Washington in an attempt to address the twin questions of scope and solution. Some of their results are posted at Jim's website, [www.shockingnews.org](http://www.shockingnews.org), and more are to come. Guidelines for assessing and reducing injury in salmonids also appear as a paper at the website. As part of his PhD research, Mike Holliman is developing a risk model for electrofishing injury in a wide variety of species; he will complete his thesis this year, and the general results will also be posted at the website.

### ONCORHYNCHUS

Oncorhynchus is the quarterly newsletter of the Alaska Chapter of the American Fisheries Society. Material in this newsletter may be reprinted from *AFS Diary* and *Western Division*.

#### Editor

John Thedinga  
Auke Bay Laboratory  
11305 Glacier Hwy, Juneau 99801-8626  
(907) 789-6025, Fax 789-6094  
[John.Thedinga@noaa.gov](mailto:John.Thedinga@noaa.gov)

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**Alaska Chapter's Internet Home Page Address**  
<http://www.fisheries.org/afs-ak/>

#### Production

Connie Taylor / Fathom Graphics  
P.O. Box 200448  
Anchorage 99520-0448  
Phone/Fax (907) 272-3305  
[FathomPub@aol.com](mailto:FathomPub@aol.com)

**Mark Your Calendar Now!**  
**Annual Alaska Chapter Meeting**  
**November 12-15, 2001**

## Meetings and Events

### **AFS Annual Meeting—Attention Students!**

The American Fisheries Society's (AFS) Annual Meeting is a professional meeting of aquatic scientists from around the world. It is AFS's primary public event for the year, and it is used to help scientists share information on freshwater and marine fishes and fisheries. The 2001 meeting will be held at the Crowne Plaza Hotel and Phoenix Civic Plaza in beautiful downtown Phoenix, Arizona on August 19-23, 2001.

**Benefits of Attending the Annual AFS Meeting:** The annual meeting is a great place to meet and develop professional contacts with other individuals interested in fisheries. The meeting provides countless opportunities to socialize with fellow students, fishery professionals, potential employers, and graduate student mentors from around the world. Often, the key to landing that first job, graduate project, or post-doctoral research position depends a great deal on your ability to network and sell yourself to potential employers or graduate school mentors.

The AFS meeting also provides the opportunity to meet and learn from some of the leading pioneer fishery scientists in both casual and formal settings. The majority of the fishery professionals are quite approachable and will spend time talking to students who have an interest in learning more about their research or will provide valuable guidance to students who need assistance. In addition, the technical sessions, symposiums, and workshops will address many of the current and critical issues facing our freshwater and marine fisheries. These issues include, but are not limited to fish culture and health, genetics, habitat loss, and nonnative organisms.

**Student Job Fair and Social:** The American Fisheries Society will be organizing a student job fair and social during the annual meeting in Phoenix. The student job fair is tentatively being held on Tuesday, August 21, from 6-7:30 pm, and the student job fair social will follow directly after from 7:30-10:00 pm. If you are interested in employment or graduate school opportunities at this time, we recommend you attend both events. The AFS meetings are attended by representatives from state and federal government agencies, universities, and private organizations. Last year's meeting in St. Louis had representatives from 18 countries and 48 states including the District of Columbia attending. As in the past, a job board will be displayed with employment vacancies and graduate school opportunities. All interested students are encouraged to bring at least 20 resumes triple hole punched. These resumes will be placed into binders for potential employers and graduate mentors to view before the student job fair and social. The student social, besides having free food and drink, will provide an opportunity to talk one on one with potential employers or graduate student mentors. All employers and graduate student mentors will be strongly encouraged to bring extra copies of their job or graduate school announcements and be

prepared to discuss their openings with prospective students.

**Student Work Program:** The opportunity to attend the meeting and earn some extra money to offset the cost is also available. As in the past, a student work program will be available for highly motivated students who want the chance to work and earn money for the meeting and gain invaluable experience. Students will be paid \$8.00 per hour and must agree to work at least six hours during the meeting. Students who agree to work will be able to recoup the cost of their registration and may even be able to cover the partial costs for meals, lodging, and other expenses. All work assignments will be based on experience, conference needs, and student availability. Student assignments will include operation of audio/visual equipment, selling raffle tickets, registration assistance, transportation assistance, entertainment assistance, poster assistance, and general help as needed.

**Registration:** The registration fee for student members is only \$85, which includes membership into the AFS Student Subsection (Education). Non-member student registration is only \$115. Special hotel room rates are available at the Ramada Inn (\$59 single/double, \$69 triple, \$79 quad) and the Hotel San Carlos (\$77 single/double). The Crowne Plaza Hotel is the host hotel and also has very reasonable Room rates - \$80 for a single or double with a \$10 extra charge per person per night. Please mention that you are a student when making reservations at the Ramada Inn and Hotel San Carlos. To reserve a room call the hotels directly: Crowne Plaza 1-602-333-5000, Ramada Inn 1-602-275-5746, Hotel San Carlos 1-602-253-41.

**Contact Information:** Students wanting to work during the meeting or requiring further information should contact Student Affairs Chair Heidi B. Blasius as soon as possible at [hblasius@gf.state.az.us](mailto:hblasius@gf.state.az.us), phone, 520-628-5672, EXT. 136, Fax 520-628-5080, or regular mail at Arizona Game and Fish Department, 555 North Greasewood Road, Tucson, Arizona 85745. We Hope to See You in Phoenix! 

### **2001 Annual Chapter Meeting**

The annual Alaska Chapter meeting will be held November 12-15, 2001 in Sitka at the Harrigan Centennial Hall. Now is a good time to start thinking about giving a presentation. Ideas for session topics and workshops are welcome, and if you would like to volunteer to put together a session of related studies so much the better.

Some of the topics already offered are aquatic education and advances in technology for fish biology. Abstracts for contributed papers will be accepted through September. Submit your proposals and abstracts to David Wiswar, USFWS, 101 12<sup>th</sup> Ave., Box 17, Fairbanks, AK 99701 or email: [david\\_wiswar@fws.gov](mailto:david_wiswar@fws.gov). 

## Meetings and Events

### **Joint Meeting on Forest Ecosystem Management in 2002**

In December 2000, the Yukon River Chapter (interior Alaska) of the Society of American Foresters (SAF) hosted a continuing education workshop in Fairbanks. The workshop, titled "Biological Diversity: The New Silvicultural Challenge," was designed to give field foresters a broader conceptual background of "ecosystem management." In the northern boreal forests, much of the available timber occurs within the riparian habitat of major watersheds. At the workshop, it became clear that dialog between biologists, field foresters, and the public is extremely important if we hope to define and implement operational guidelines that are grounded in science and have general public approval. To facilitate this process, it was proposed to host a joint meeting of local/state chapters of the SAF, The Wildlife Society (TWS), and American Fisheries Society (AFS) in order to work on operational definitions of ecosystem management in boreal forests. A joint conference of 1-2 days could bring together statewide professionals for presentations, panels, and dialog on planning and forest management at the landscape scale, maintaining ecosystem structure and function for biological diversity, and working to define management objectives. Following the conference, a smaller group could hold a 1-2 dayworkshop focusing on operational guidelines for the boreal forest in the Tanana Valley (north of the Alaska Range), which contributes the majority of timber harvest in Interior Alaska. The proposed timing of this meeting is May 2002. AFS has long encouraged interactions with other professional societies in order to

achieve ecosystem approaches to resource management issues. If you would be willing to participate or help coordinate this meeting, please contact Tom Paragi by June 30, 2001. Tom Paragi, ADF&G, Div. of Wildlife Cons., Fairbanks, *Tom.Paragi@fishgame.state.ak.us*, 907-459-7327.

### **International Conference on Restoring Nutrients to Salmonid Ecosystems**

Final notice! Plan now to attend the "Nutrient Conference" — a defining event for salmon recovery and ecosystem management throughout the North Pacific, April 24-26, 2001; Eugene, Oregon. The historical and geographic context will be provided by plenary speakers Jim Lichatowich (USA), Takeshi Murota (Japan), and John Stockner (Canada). Eight scientific sessions, two panel discussions, and 20 posters will address a huge variety of technical issues including historic and future salmon escapements; dynamics among aquatic and terrestrial systems; nutrient contributions of carcasses, riparian vegetation, and artificial supplements; protocols for fertilizing lakes and streams in various ecotypes; methods for salmon carcass augmentation; and water quality and primary production effects of carcass decomposition. Other elements include a poster social, special showings of the David Suzuki documentary "The Salmon Forest," and coverage by a Japanese film crew. The packed agenda spans from 8:00 on the 24<sup>th</sup> to 18:00 on the 26<sup>th</sup>. Registration before April 1 is less than \$100. The registration form, agenda, and further information are available on the conference web page, [www.gpafs.org/confnutr](http://www.gpafs.org/confnutr) and via Richard Grost at 541-496-4580 (*rgrrost@compuserve.com*). See you there!

### **North Pacific Marine Sciences Organization (PICES)**

The Tenth Anniversary Meeting of the PICES will be held in Victoria, B.C., Canada, October 5-13, 2001. The session is titled "A Decade of Variability in the Physical and Biological Components of the Bering Sea Ecosystem: 1991-2001." This half-day symposium will examine the nature of climate changes in the Bering Sea over the past decade and the effects of these changes on the ecosystem. There is widespread recognition that significant changes occurred in the marine ecosystem over the last decade, possibly due to shifts in the Pacific Decadal Oscillation and Arctic Oscillation and influences of El Niño-La Niña. The character of the Bering Sea seasonal ice pack recently has changed from the "warm" phase that persisted since the regime shift of the late 1970s to one that exhibits rapid buildup in winter but earlier retreat in spring.

Vast colonies of cocolithophores began appearing on the Bering Sea shelf in the summer of 1997 and have recurred each summer since. Salmon stocks recruited in much lower numbers in the last few years than were forecast. Pollock distribution and abundance have varied with fluctuations in sea ice. Shifts have also been observed in crab, seabird, and marine mammal populations. The symposium will examine ecosystem change in the western

and eastern Bering Sea, identifying possible processes that effect change. Abstracts are due May 15, 2001. Selected papers will be published in a special issue of Progress in Oceanography. For more information, contact me or see the PICES web site at <http://pices.ios.bc.ca/>.

The second Bering Sea science symposium will be part of the Bering Sea Summit to be held April 22-26, 2002 at the Egan Center in Anchorage, Alaska. The purpose of the summit is to open dialogue among the highly diverse and international organizations, management agencies and communities in the Bering Sea region to establish creative alliances and partnerships, and achieve sustainable policies and durable decisions. Scientists, resource managers, commercial and industrial interests, subsistence users, local committees, Native organizations, community leaders, and conservationists will attend. The science symposium will be one of several symposia on issues affecting the Bering Sea.

The outcome of the summit is expected to be a multi-stakeholders' strategic vision for protecting and utilizing Bering Sea resources. Contact Allen Macklin for more information. Email: *Allen.Macklin@noaa.gov*, Ph. 206-526-6798.

## Best Paper at Annual Meeting

Ted Otis (ADF&G) won the best paper award for *Reliability and Performance of a Remote Video Escapement Recorder (RVER) for Counting Adult Pink and Chum Salmon in an Intertidal Stream.*

### Abstract

Although aerial survey is a widely used escapement monitoring method, it is susceptible to biases that frequently go unaccounted for (e.g., survey conditions, aerial observer efficiency, periodicity of survey flights, and stream residency of target species). In a previous study, we demonstrated that remote video and time-lapse recording technology could be used to estimate sockeye salmon escapement in remote, clear water streams. The purpose of this study was to evaluate the feasibility of using our remote video escapement recorder (RVER) to count adult pink and chum salmon in the intertidal portion of a modest-sized stream. We operated a modified floating weir concurrently with the RVER system to verify the accuracy of escapement counts derived by the time-lapse recorded video images. System reliability was evaluated based on the amount of "lost time" due to system malfunctions. Our hybrid solar/wind generation system successfully maintained the battery bank to operate RVER 100% of the time it was programmed to run. However, approximately 14% of the recordings were illegible due to a time-lapse synchronization problem with the VCR. It took 9.9 h to review 782 h of videotape, an average of just 16 minutes to review a day's escapement. The total escapement estimate based on video was only 7% less than the total weir count. However, there was a tendency for the reviewer to overestimate escapement while daily passage was low and underestimate escapement when it was high. Future innovations may be able to alleviate the difficulties we experienced counting intertidal pink and chum salmon, which had a tendency to flush in and out in



large groups with the ebb and flow of the tide. However, RVER may be best suited for applications above tidal influence and where run timing differences limit the extent of simultaneous multi-species returns. Our experience suggests that the analog recorder may be the weak link in our system. We'd like to remove that component from the system and begin transmitting digital images in real-time, via microwave or satellite, directly to our field office where they could be recorded onto hard drives. Digital images have the potential to be higher resolution and would facilitate greater flexibility in time-lapse recording and playback. Image recognition software could also be developed to facilitate auto counting for some applications. In short, incorporating real-time transmission of digital images into our current RVER system would dramatically improve a tool that already shows great promise for advancing our ability to monitor salmon escapements on small clear streams throughout Alaska. 

## Best Poster at Annual Meeting

George Sage (USGS) won the best poster award for *Colonization Patterns of Coho Salmon (*Oncorhynchus kisutch*) in Recently Deglaciated Streams in Glacier Bay, Alaska.*

### Abstract

Over the past 240 years, the glacial ice sheet in Glacier Bay has receded approximately 120 km and has uncovered over 121,000 ha of marine fjords. As the glacier retreated, new stream systems from 5 to 200 years old formed and provided a unique opportunity to study natural coho colonization over recent evolutionary time. Our objectives for this study were to determine if colonization of newly deglaciated streams is random within Glacier Bay, and if the levels of genetic variability and relatedness of populations are independent of physical characteristics of the stream such as stream age or location.

We used nuclear DNA markers to characterize the genetic diversity of coho salmon populations. Twenty-six sample collections from 19 streams were screened for genetic variation with nine microsatellite loci and one growth hormone gene. Sampling included multiple-year tests for five populations.

Results of our genetic analyses indicate there is significant genetic substructuring among the coho

populations in Glacier Bay. The genetic data suggest the populations segregate into three main groupings within the bay, and these groupings generally correspond with time since deglaciation. The group compositions and their pattern of genetic similarity, i.e. young streams grouping next to intermediate age streams and intermediate age streams grouping next to older streams, also suggest a step-wise pattern of colonization where colonizers originate from proximate populations.

To restore declining and extirpated populations of coho salmon, we need to understand the patterns of colonization in natural systems. The results of our analyses suggest colonization is not random within Glacier Bay, and that the levels of genetic variability and relatedness of populations are not independent of physical characteristics of the streams. Rather, colonization appears to occur in a step-wise fashion, where colonizers originate from proximate populations with colonizing events most likely occurring over multiple years. This information provides valuable insight into the processes of natural colonization, the genetic relationships among colonizers, and how the genetic characteristics of newly founded populations change over time, and is therefore an important contribution in our understanding of how coho colonize natural systems. 

## **UAF Student Subunit Annual Report**

*Eric Symmes, UAF Student Subunit President*

The AFS annual meeting last November included presentations and posters by several Fairbanks students, we also had about 10 additional students who attended the various sessions. Several students (Juneau and Fairbanks) worked very hard to collect prize donations and organize the raffle. Thank you to everyone who purchased tickets for the student raffle; it was a big success. Students from the Fairbanks subunit are looking forward to attending the meeting next fall in Southeast Alaska.

We started off the spring semester with a new group of officers, President - myself, Vice-President – Cheryl Dion, Treasurer – Theresa Tanner, and Secretary – Brian Collyard. We have been successful at increasing the student attendance at our monthly meetings; our last two meetings have been standing room only. One of our main objectives is to expand our membership to include more students from the Institute of Marine Science. We are also working to increase attendance of local professionals from area agencies.

At our February meeting, Matt Evenson from ADF&G Fairbanks presented “Burbot of Interior Alaska”, and there were more than 25 people in attendance. We followed Matt’s presentation with a burbot-fishing trip that was great, until someone vandalized our lines and stole our fish! Not easily discouraged, we are currently planning another attempt (in a different location).

At our March 21<sup>st</sup> meeting, Dr. Sue Hills from the Institute of Marine Science will be representing “Interactions between Stellar Sea Lions and Fisheries”. On April 19<sup>th</sup> we will be holding a potluck/BBQ social where we will elect the new officers for the coming year.

Our future plans include a t-shirt design contest/fundraising event, fishing trips, volunteer/educational activities within the community, educational events for our members, and lots of fun along the way! Please visit our website at [www.fisheries.org/afs-ak/student](http://www.fisheries.org/afs-ak/student) for upcoming events and news. 

## **Ecosystems Concern Committee (ECC)**

The ECC met briefly in Anchorage during February to determine annual goals and topics of interest. We are looking for interested parties to join in and help with committee projects. The following three topics have been chosen for focus for 2001.

- Cook Inlet Sport Halibut Fishery: Review of topics to determine suggested methods to increase productivity and to address local depletion and conflicts between sport and commercial user groups.
- Marine Protected Areas: What is a Marine Protected area? Is this a useful tool for Alaskan waters?
- Does SUV advertising encouraging destructive practices to riparian systems? What are the means to address this problem? How should SUV makers and their advertisers be contacted?

Anyone interested should contact Cathy Coon at [Cathy.Coon@noaa.gov](mailto:Cathy.Coon@noaa.gov) or 907-271-2809. 

## **Alaska Groundfish Fisheries SEIS**

NMFS recently submitted a draft programmatic supplemental environmental impact statement (SEIS) on Alaska groundfish fisheries. This SEIS has multiple purposes. It is a planning and reference document to accurately describe the current management regime for groundfish fisheries in Alaska. It also describes and analyzes current knowledge about the physical, biological, and human environment in order to assess impacts caused by past and current fishery activities. Significant changes have occurred in the environment since the original environmental impact statements (EIS) for the Gulf of Alaska and Bering Sea and Aleutian Islands groundfish fishery management plans were published approximately 20 years ago. While many environmental assessments and several EISs have been prepared for fishery plan amendments over the ensuing years, none examined the groundfish fishery management plans at a programmatic level. The National Environmental Policy Act requires preparation of an EIS (or SEIS) when environmental changes have occurred. This SEIS is intended to bring both the decision maker and the public up to date on the current state of the environment. In addition, the programmatic SEIS will also serve as the environmental baseline that will be used to shape future management policy and a future range of potential management actions. NMFS used the following key issues to develop the programmatic policy alternative considered in the SEIS:

- effects on marine mammals,
- effects on seabirds,
- effects on target groundfish species,
- effects on prohibited species,
- effects on essential fish habitat,
- effects on social economics of the fishery,
- effects on the marine ecosystem, and
- cumulative effects of the groundfish fisheries.

The Alaska Groundfish Fisheries Programmatic SEIS is on-line at the NOAA Fisheries Alaska Region web site [www.fakr.noaa.gov](http://www.fakr.noaa.gov). Copies of the SEIS in printed or CD format can be obtained by contacting Steven K. Davis, NMFS, 222 West 7th Avenue, Room 517, Anchorage, AK 99513 or [steven.k.davis@noaa.gov](mailto:steven.k.davis@noaa.gov). Due to the size and complexity of the document, the agency has extended the comment period an additional 60 days. Public comments can be submitted until June 25, 2001. 

## **Proceedings Offered at Discounted Price**

The American Fisheries Society is now offering the Proceedings of the Exxon Valdez Oil Spill Symposium (Rice, Spies, Wolf, Wright, editors; 1996) at a discounted rate. This is the symposium that was held in Anchorage, February 2-5, 1993. You can obtain a copy for the price of \$7 plus shipping (\$5.50 for the first book and \$2.00 for each additional book), by contacting AFS fulfillment by May 1, 2001. Prepaid orders only, please. Indicate the code AKEX for this special price. Regular price is \$35. American Fisheries Society Attn: Orders Department 1650 Bluegrass Lakes Parkway, Alpharetta, GA 30004. Order by phone: 678-366-1411, fax: 770-442-9742, or email: [mailto:afspubs@pbd.com](mailto:mailto:afspubs@pbd.com). 

## Fish Waste Linked To Otter Deaths

*WorldCatch News Network, Mar. 26*

Dozens of sea otters found washed up on beaches near Cordova could be dying from eating fish waste discharged into Orca Inlet by seafood processors. Investigators have found parasite infestations in the digestive tracts of the dead sea otters, perhaps from eating masses of fish bones. The Copper River Watershed Project in conjunction with the Native Village of Eyak and the city of Cordova put on a day-long conference this month to deal with the problem. "Everybody acknowledges that there is something going on. Otters are being killed by bone masses or parasites, but nobody knows for sure," said Kate Williams, director of environmental programs for the Native Village of Eyak. Glenn Ujioka of the Eyak Tribal Council said more than 100 sea otters died last winter between Hartney Bay and the cove. "Nearly all were prime-age animals," Ujioka said. Sea otters have a membrane that encases the stomach

when it is punctured. Fewer otters farther from town have the distinctive, dark membrane around the stomach, Ujioka said.

Steve Grabacki of Graystar Pacific Seafoods said annual reports from the Alaska Department of Fish and Game show that processors discharge between 22 million and 30 million pounds of fish waste into the inlet each year. The waste would be less of a problem if it could be converted into a marketable product, said Scott Smiley of the University of Alaska's Fisheries Industry Technology Center. Jerry Babbit of the National Marine Fisheries Service described a few techniques for converting the waste to fish meal, possibly even for human consumption in third world markets. Babbit cited the success of an innovative processing plant in Kodiak and recommended starting with small-scale experiments to determine what products might work for Cordova processors. 

## The Hutton Program

The American Fisheries Society (AFS) has developed an exciting new initiative—the Hutton Junior Fisheries Biology Program, an educational program designed to develop minority high school student interest in the fisheries profession. While the program focuses on minorities, non-minority students may also participate in the program.

The Hutton Junior Fisheries Biology Program provides students with a professional mentor and a summer-long, hands-on experience in fisheries science in either a marine or freshwater setting. A scholarship is provided to students accepted into the program.

Contributors to this new initiative include U.S. Forest Service, U.S. Minerals Management Service, and Philip Morris Companies, Inc.

The Hutton Program will begin during the summer of 2001. For more information, read the Hutton Brochure (.pdf Format). To apply, complete the student application package and mail it to the AFS office. Application packages must be received by March 31, 2001 to receive consideration. If you have any questions, please contact Ronald Eisler (phone: 301-897-8616, Ext. 213, email: [reisler@fisheries.org](mailto:reisler@fisheries.org)) or Jan Lubeck (phone: 301-897-8616, Ext. 206; email: [jlubeck@fisheries.org](mailto:jlubeck@fisheries.org)). 

## Continuing Education Announcements

### Short Course on Statistics

The Alaska Chapter of the American Statistical Association will be presenting a short course by Jose Pinheiro on *Mixed Effects Models* at its annual meeting in Anchorage, June 28-29. These methods allow the modeling of correlated or grouped data and are finding wide use, for example, in regional analyses of stock-return relations such as in Myers, Bowen, and Barrowman. (1999).

For more information or to register for the course or conference, check <http://www.amstat.org/chapters/Alaska/>. If you are interested in participating or helping coordinate a workshop on video monitoring methods, please contact Ted Otis, email [Ted\\_Otis@fishgame.state.ak.us](mailto:Ted_Otis@fishgame.state.ak.us) or call 907-235-1723. 

### Writing Workshop

Haunted by an unfinished manuscript or report? Want to improve your writing? Invest 5 days learning skills that will empower your writing and make you a more effective and efficient communicator: Scientific/Environmental Writing Workshops with Jud Monroe, Ph.D. Anchorage: 23-27, April, 2001, Fairbanks: mid-late

October, 2001 (tentative date). Juneau: January, 2002 (tentative date).

Dr. Monroe is returning to Alaska to repeat his highly praised technical writing workshops. Participants will learn general approaches to clear, effective writing and how to adjust their writing to the specific needs of management, regulatory, and scientific audiences. The workshop emphasizes immediate practical application of techniques: participants spend mornings learning techniques for specific stages of the writing process, then devote afternoons to applying and exploring these techniques on their own manuscripts. Participants must bring a technical/scientific paper or report to work on. Dr. Monroe will provide editorial feedback on each participant's manuscript until it is finalized, even after the conclusion of the workshop, if necessary (up to one year from the course date).

Each course is limited to 22 participants, so don't delay. Check the chapter website this summer for details on the Fairbanks and Juneau workshops. Cost of the workshop is \$350 for Alaska Chapter AFS members and \$400 for nonmembers. Register today with Joel Reynolds, email: [Joel\\_Reynolds@fishgame.state.ak.us](mailto:Joel_Reynolds@fishgame.state.ak.us) or call 907-267-2129. 

