

## In this issue:

2000 Annual Meeting

Third World Fisheries Congress

Western Division Meeting

Is Salmon Organic

Be a Chapter Officer

And more . . .



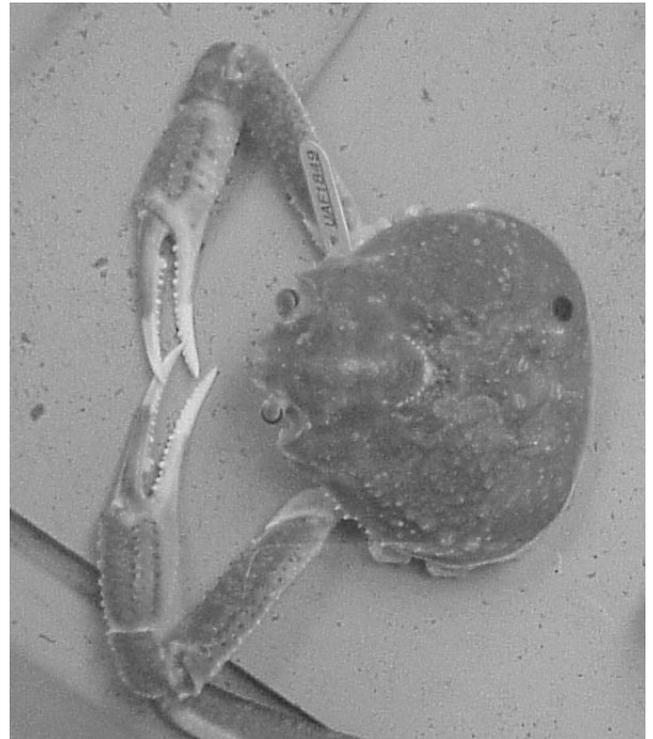
## **Chapter Annual Meeting First Call for Papers Alaskan Fisheries: Past, Present, and Future**

*Carol Ann Woody*

It's time once again! The 2000 Annual Meeting of the AFS Alaska Chapter will be in Fairbanks at the Wedgewood Hotel November 14-16. Plan now to join us this fall in what is gearing up to be a premier FISHERIES event. Pull together that great study, work in progress or put together a paper or poster that shares YOUR interesting information about Alaska's fisheries – Past, Present, or FUTURE. We want to hear from you, so start thinking and planning now for our big fall get together.

Sessions offered thus far are listed below. They range from specific watersheds such as the Yukon River to the Human Aspects of Fisheries and Management. If you are interested in presenting at a particular session contact that session chair and follow the abstract guidelines that follow this section. **If you would like to propose another session, please contact Carol Ann Woody at [carol\\_woody@usgs.gov](mailto:carol_woody@usgs.gov).**

Continued on page 5



A snow crab with missing limbs after windchill exposure

## **Windchill Exposure of Snow Crabs**

*Tom Shirley*

The severe weather that occurs during the Bering Sea snow crab fishery is definitely hard on the crews and equipment, but how does it affect the crabs caught as bycatch? Millions of snow crab, *Chionoecetes opilio*, are captured and discarded as bycatch each winter. Bycatch consists of the sublegal sized males (< 78 mm carapace width), less desirable legal males (< 101 mm carapace width), females, very old shell males, and injured crabs that are sorted on deck and returned to the sea. Discarded snow crabs receive aerial exposure to harsh windchill conditions during pot retrieval and sorting.

Jon Warrenchuk is studying the effects of wind and cold air exposure on snow crabs as his M.S. thesis research at the Juneau School of Fisheries and Ocean Sciences. His advisor, Dr. Tom Shirley, has performed similar studies on Tanner crab and red king crab. The ADF&G funded project seeks to understand the lethal and sublethal effects of windchill on snow crabs, which has important management implications to the fishery.

Jon collected male snow crabs from the Bering Sea, just prior to the delayed opening of the 2000 season. The crabs were transported live to Juneau where the laboratory study was performed. A wind tunnel in a walk in freezer simulated the windy and cold conditions on the deck of a commercial Bering Sea crab boat. Crabs were exposed to different wind speeds, air temperatures, and exposure times. Mortality, reduced activity in the form of righting response, limb loss, and haemolymph glucose concentration were assessed before, immediately after, 1 day, and 7 days post-treatment. Preliminary results indicate that snow crabs are more sensitive to windchill exposure than red king crabs and Tanner crabs. ☹

## The President's Column

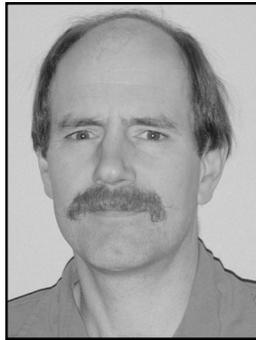
Bill Bechtol

### Secrets of the Sea

When in Washington, D.C. last year, I visited the Roosevelt Memorial. This is an outdoor memorial that consists of a series of walkways winding among stone walls, interspersed with waterfalls and sculptures, and with a backdrop of greenery. Into the stone walls are engraved various quotes from both Franklin and Eleanor Roosevelt. One of my favorite quotes from F.D.R. was, "Men and nature must work hand in hand. The throwing out of balance of the resources of nature throws out of balance also the lives of men."

Roosevelt understood that the human race and the natural resources are inextricably linked. It falls to us to manage human use of available resources to protect the integrity of that link. Natural resource management is, in itself, a balancing act. Each of us would readily admit that, in our professional positions, we are advocates for the aquatic resources. Upon sincere introspective analysis, I think most of us would admit that we are also advocates of one or more type of user of these same aquatic resources. Because it is difficult not to advocate, the true art comes in balancing the ways and degrees in which our advocacy is effective. We hone our skills, build our experiences, and evaluate the available base of knowledge in order to contribute to management that provides for long-term sustainability.

Individual contributions to resource management are many and varied. Resource assessment teams evaluate the status of the resource through techniques such as field surveys, harvest analysis, and genetic sampling and analyses. Regulatory management structures are established based on assessment results, allocation criteria, legal advice, and fishery manageability. Fisheries are then implemented within the context of the adopted management structures and rely on inseason management criteria. Fishery progress is monitored inseason by managers in the field or through catch reports and with oversight by regulation enforcement agencies. In some cases, such as for many recreational fisheries, fishery harvests are determined through post fishery mail surveys. Through subsequent analyses, the regulatory management structures are evaluated and modified as necessary to



improve achievement of management objectives. The foremost objective is often to provide for long-term sustained yield. All the above processes occur with input from various user groups or stakeholders. And we can, and should, as professionals, help maintain the balance of the natural resources by contributing to the above management process steps. To this end, we must improve ourselves in order to work "hand in hand with nature."

We have all heard of the importance of biological diversity in maintaining the health of an ecosystem. For aquatic resource professionals, it is important to maintain diversity in our career, just as in other aspects of our lives. It is not necessary to build an expertise in all aspects of the resource management process. But, it is important to have a breadth of understanding and to continue to build our knowledge. We must achieve diversity, both as individual professionals and as a professional society. Such a challenge comes as a process of continuing to learn.

Hanging in my office is a postcard with a picture of a boat docked at a small community harbor, a picture that could be taken out of Southeast Alaska or New England. Underneath the boat is a quote from Henry Wadsworth Longfellow, "My soul is full of longing for the secrets of the sea..." We are all, each in our own way, on a quest, to learn secrets of the sea and achieve the balance that will sustain the link between man and nature. Building professional skills and experience, particularly developing diversity in those aspects, requires that we continuously take advantage of learning opportunities that are placed before us. The Alaska Chapter AFS meeting is a prime example of such an opportunity in Alaska. In essence, *carpe diem!*

Or, in other words . . . When opportunity knocks, be at home! ☺

## You Can Be a Chapter Officer!

Cindy Hartmann, Past President

This fall we will have elections for the offices of treasurer and vice president. The treasurer position is a 2-year term. The treasurer maintains the chapter financial accounts, files the chapter taxes, and participates in excom meetings as a voting member of the executive committee.

The vice president is a 4-year commitment. As vice president, your first year in office, you are responsible for membership. As president elect, your second year in office, you are responsible for organizing the annual Alaska Chapter meeting. In your third year you are Chapter president and oversee the day-to-day business of the Chapter. This includes working directly with the committee chairs and interfacing with the Western Division AFS and Parent Society. When you are past president, your job is to update the procedures manual, find candidates to run for office, and do anything else that you volunteer for. All 4 years you are a voting member of the excom.

I have enjoyed my time on the excom and I think you will too. If you would like to run for office please let me know. You can contact me at 586-7585 or at [cindy.hartmann@noaa.gov](mailto:cindy.hartmann@noaa.gov). ☺

### 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*.

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Deadline for materials for the fall issue of Oncorhynchus is Sept. 10.

Alaska Chapter's Internet Home Page Address

<http://www.alaska.net/~fishak>

## Is Salmon Organic? Not Yet

*Condensed from New York Times, May 24, 2000*

Sen. Ted Stevens of Alaska says the wild salmon that swim around Alaskan waters are so pure and clean they are entitled to wear the organic label. As chairman of the Senate Appropriations Committee, he added \$75,000 to the Agriculture Department's budget to cover the cost of public hearings to ensure that the salmon are included in the federal organic standards expected to go into effect at the end of the year. The proposed standards will cover everything except aquatic animals and honeybees, but the Alaska salmon industry is pushing for the change in the rules because the organic label generally adds 25 to 35 percent to the value of a product.

According to documents of the National Organic Standards Boards, organic certification standards should not be developed for wild animals, including fish, because the issue is controversial. Organic farming as it has been defined for 30 years is a managed system tracking everything that goes into production, but salmon migrate thousands of miles across oceans and their habitats cannot be carefully monitored.

Instead of the organic label, the department is suggesting labeling to indicate the products were harvested and handled according to certain standards. The Marine Stewardship Council, an accreditation body founded by Unilever and the World Wildlife Fund that has developed ecolabel guidelines, would certify that such fish had come from healthy fisheries and that fishing for them had not hurt the environment.

In the past, Alaska has promoted its wild salmon as superior to farmed fish in flavor and quality. But few people know the difference between wild and farmed salmon and have no idea which kind they are eating. Farmed salmon now account for 60 percent of the world's market and have seriously depressed the price of wild salmon.

Like commercial chickens, farmed fish live in not particularly sanitary conditions. They are fed dye pellets to give them the pink color that occurs naturally in free-swimming salmon. They eat manufactured food that may contain genetically modified ingredients. They are treated with antibiotics because of fish lice.

Ironically, because the farmed fish live their entire lives in controlled waters, they could be certified organic if changes were made in their environment and food. Certified organic farmed fish are already being sold in Britain.

Two Pacific Northwest fish processors are now certified organic by two independent organic certifying agencies. Prime Select Seafood in Cordova is selling certified organic Copper River salmon and eventually may sell organic halibut as well. But Susan Laird, its vice president, said she had no idea if the label would be worth the added expenses of certification.

Wild sockeye salmon processed by Capalino Pacific in Bellingham, Washington, has also been certified organic, but the company decided not to use the label after consulting with some leading chefs. The chefs said that

organic salmon suggested farmed and that wild salmon was far superior.

"Organic is a lot sexier," said Jon Saarheim, a partner in Capalino Pacific, "but it seems more accurate to say the salmon is wild and that it is sustainable. So we label it 'certified sustainably wild and organically processed,' the wording approved by the Marine Stewardship Council.

Could Stevens be coming to the same conclusion? "Labeling something organic could be a first step toward wild salmon," he said in an interview, "but organic could also cover farm raised." The problem with that, he said, is: "There is a great deal of difference between salmon that spend a great portion of their lives in deep cold waters and those raised on a farm. They are not subject to any kind of runoff from farmlands, pesticides, to the growth of viruses in tanks or ponds. They really are disease free. Wild salmon or 'saumon sauvage,' which we consider superior, comes from the cold deep ocean waters. There may be another classification that will do the same thing."

Now there is an even greater threat to wild salmon lurking in some of those ponds where salmon are farmed: a genetically engineered version that grows quickly. Should those fish escape from their ponds, they could cause havoc to the ecosystem and might signal the end of a truly wild variety. Even an organic label would not help the industry then. ☹

## The Third World Fisheries Congress

**Feeding the world with fish in the next Millennium:  
The balance between production and environment**

As you know, the 3rd World Fisheries Congress is going to be held in Beijing from October 31<sup>st</sup> to November 3<sup>rd</sup> 2000. The Congress was organized by the China Society of Fisheries and got strong support from the Chinese Ministry of Agriculture.

The Congress intends to approach the issues commonly concerned by fishery professionals, mainly focusing on how to conserve and utilize the fish resource for humans by sustainable and responsible fisheries, to release the pressure on the grain production at the turn of the millennium. The congress gives a good chance for all professionals to exchange their ideas and give counsel to world fisheries.

Kindly note that you can still enjoy the discount rates for registration by 1 August 2000 instead of the original date 1 May 2000. Please note that visa authorization for your entry into China can only be issued to you upon receipt of the registration form.

For more information, please visit the web site: <http://www.fisheries.moa.gov.cn>. Wang Yanliang, Deputy Director- Bureau of Fisheries Ministry of Agriculture People's Republic of China and Vice Chairman of the international Steering Committee of the 3<sup>rd</sup> World Fisheries Congress. ☹

## Western Division Meeting

The Western Division of the American Fisheries Society (WDAFS) will be holding its annual meeting this year in Telluride, Colorado July 16-20. This years meeting promises to provide a wealth of current information for fisheries managers and researchers. The Program Committee has organized concurrent sessions on a variety of topics that are very pertinent for today's biologist, including Barrier Removal and Fish Passage, Special Regulations, Native Fish Conservation and Management in the West, Recovery Goals and the Endangered Species Act, and Invasive Species Issues and Management. And there's more.

This year attendees will also have the opportunity to learn new skills and sharpen old skills at one of these workshops:

- AFS Leadership Training
- Riparian Grazing Management Strategies to Achieve Stream Restoration Goals
- Modeling Recreational Fisheries with the Fishery Analysis Simulation Tool (FAST)
- Applied Fisheries Statistics

Qualified professionals will teach each of these workshops, but remember, availability is limited so early registration is suggested.

I am asking you to encourage your staff to attend this meeting and to participate in the workshops. There simply is no better mechanism to keep abreast of current methods, discuss management and research problems with colleagues, or to hone skills, than to attend professional meetings such as the one we have planned this year for the Western Division of the American Fisheries Society.

A current description of events, deadlines, registration requirements, social events, accommodations, and the program can be found at our website: <http://www.fisheries.org/wd/meet/2000/meet2000.htm>

Please share this invitation to attend with your staff, others who may be interested, or anyone who would benefit from attending this years meeting.

For questions contact Bill Bradshaw, WDAFS President-Elect, 307-672-7418, [Bbrads@state.wy.us](mailto:Bbrads@state.wy.us).

## Award Nominations Wanted

The Awards Committee is accepting nominations for recipient of the Meritorious Service Award for recent outstanding contribution to Alaska fishery science. Nomination forms can be found in the *Oncorhynchus*. Please list the qualifications of your nominee in as much detail as possible to help the Awards committee make their choice. A new award has been created for outstanding contribution to the Alaska Chapter of AFS. We are accepting nominations for this award as well. We have received no nominations for either award to date despite the many outstanding fisheries biologists and volunteers out there. There are many duties associated with this committee. If you would like to help, you can judge papers and posters at the Annual meeting, help us choose the Meritorious Service Award or Outstanding Chapter Award recipient, or just help us refine our selection criteria.

The Awards committee consists of chair: Nicky Szarzi. Volunteer judges and helpers include: Debbie Burwen, Jim Finn, Molly Ahlgren, Eric Knudsen, Kate Wedemeyer, Jerry Berg, Robert Piorkowski, and Dan Urban. If you would like to assist with the activities of the Awards committee please contact Nicky at ADFG, 3298 Douglas Place, Homer, Alaska 99603, phone 907-235-8191, or e-mail [nicky\\_szarzi@fishgame.state.ak.us](mailto:nicky_szarzi@fishgame.state.ak.us).

Please complete the form below and attach a sheet listing the qualifications of your nominee, related to the award criteria, in as much detail as possible to help the Awards Committee make their choice.

### AWARD NOMINATION FORM

I/We nominate \_\_\_\_\_ for the Alaska Chapter's (please check only one award below)

Wally Noerenberg Award (WNA) for career-long outstanding contributions to Alaska fisheries, or for the

Meritorious Service Award for recent outstanding contributions to Alaska fisheries, or for the

Alaska Chapter Service Award for contributions to the Chapter through participation mentorship, membership and/or education.

Nomination submitted by: \_\_\_\_\_ Phone \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Feel free to submit any supportive documentation that may be of use to the award committees. This form along with a written summary describing why the recipient deserves the award related to the award criteria must be received (postmarks constitute receipt) by July 31 for consideration in this calendar year. Mail your form to either (WNA) Gordon Kruse, ADF&G Div. Of Commercial Fisheries, P.O. Box 25526, Juneau 99802-5526 or (MSA/ACSA) Nicky Szarzi, ADF&G, 3298 Douglas Place, Homer 99603.

## Annual Meeting Sessions, from page 1

### Modeling: A Tool for Managing Alaska's Fisheries

Session Chair: Peggy Merritt, Alaska Department of Fish and Game

E-mail: [Peggy\\_Merritt@fishgame.state.ak.us](mailto:Peggy_Merritt@fishgame.state.ak.us) or phone: 459-7296 or fax: 456-2259

The aim of this session is to bring together expertise in modeling and to present new developments in the application of modeling to fishery management issues in Alaska. Fields of application will include, but are not limited to:

- modeling methods
- modeling applications
  - risk analysis
  - abundance estimation
  - forecasting
- how useful modeling has been for providing sound management advice
- future directions for modeling

### Subsistence Fisheries: Past, Present, and Future

Co-chairs: Jerry Berg, US Fish and Wildlife Service and Tom Kron, Alaska Department of Fish and Game

E-mail: [jerry\\_berg@fws.gov](mailto:jerry_berg@fws.gov) or phone: 786-3876; [tom\\_kron@fishgame.state.ak.us](mailto:tom_kron@fishgame.state.ak.us) or phone: 267-2166

Prior to 1939, Alaska's fisheries were managed by the Department of Commerce, Bureau of Fisheries. For the next 20 years (1940 - 1959) the Department of Interior's US Fish and Wildlife Service (USFWS) had responsibility for managing Alaska's fisheries. In 1960, just after statehood, ADF&G received management responsibility for fisheries in-state waters. And now, the Departments of Interior and Agriculture have resumed responsibility for subsistence fisheries on Federal public lands and waters to protect the rural priority established under ANILCA in 1980.

Last year, dual State-Federal management became a reality. Federal agencies have been staffing up to manage subsistence fisheries on Federal waters and have invested significant funding into new subsistence fishery monitoring and resource assessment projects. Federal subsistence regulatory proposals have been submitted by the public for review by the Federal Subsistence Board. Residents of the Kenai Peninsula are now considered rural under the Federal program.

The State and Federal government have reached agreement on an MOU and are working on joint management protocols to be developed for subsistence fisheries across the state. This session at the 2000 Alaska Chapter AFS meeting will include representation from state and federal agency staff as well as subsistence users. We will track the Past, Present, and Future of these important fisheries. We will be recruiting a core group of individuals for the session and welcome pertinent contributed papers during the first or second call for papers to be presented at the meeting.

## Sustainable Fisheries In Alaska

Session Chair: Steve Riefensthal

E-mail: [steve3@eagle.ptialaska.net](mailto:steve3@eagle.ptialaska.net)

This session will focus on Alaskan fisheries in light of sustainability- past, present, and future. Ideally the first part of the session would give some background on the concept and reality both globally and in Alaska. How did the mandate of sustainable fisheries management evolve and how does it function in Alaska? How will the recently adopted Sustainable Fisheries Policy affect current ADF&G management? Who are the stakeholders when it comes to sustaining Alaska's fisheries and what is their perspective on the feasibility of sustainability? How does politics play into the reality? The second part of the session will focus specifically on Alaskan fisheries and sustainability. Successes and critiques are desired. Papers that would be interesting and pertinent are: escapement-based management trends since statehood, abundance based management model for chinook; black cod management in Chatham Strait and corresponding stock assessment methods and interaction with fishermen for a sustainable fishery; Southeast Alaska coho management, use of index streams, cpu historical data, and trends in catch and escapement. How do we assess whether Alaska management is working? Please submit papers dealing with these topics and the theme of sustainability in Alaska to Steve.

### Human Nature, Human Influences- Is Alaska Really Different?

Session Chair: David Cannon, US Fish and Wildlife Service

E-mail: [dave\\_cannon@fws.gov](mailto:dave_cannon@fws.gov) or phone: 543-3151

The intent of this session is to generate thought about the future of Alaska's natural resources and to reflect on how human influence may hinder long term sustainability of our resources. By many people's standards, Alaska is quite different than the lower 48, especially considering its sparse population and abundant natural resources. However, fisheries around the world, including Alaska's fisheries, are under immense and increasing pressure from human activities. Given the influence of human beings, the lag time associated with "adaptive management", and environmental uncertainty, one might ask if scientific knowledge and management can keep pace to ensure sustainability. For this session I am soliciting papers and speakers focused on the human element of resource management. I hope to generate thought about the human challenges managers face and possible solutions on how we might learn from the past and prevent similar consequences as seen in the lower 48.

### Yukon River Fisheries: Past, Present, and Future

Session Chair: Randy Brown, USFWS

E-mail: [randy\\_j\\_brown@fws.gov](mailto:randy_j_brown@fws.gov); or phone: 456-0295 or send mail to: Fairbanks Fishery Resource Office, 101 12th Ave., Room 222, Fairbanks, AK 99701

The Yukon River is grand in scale, long in history, and dynamic in fishes and fisheries. I encourage submissions from a variety of topics including, but not limited to: general fish biology and life history; distribution and migration; harvest, monitoring and management; and historical perspectives. Please do not limit your

contributions to salmon related topics; the river is rich in species diversity and in life history variation within species. Submissions should be in the format described after these session descriptions. Please send your abstracts to me via e-mail by July 31, 2000. Please call if you have any questions.

### **Fishing Effects on the Seafloor**

Session Co-Chairs: Gordon Kruse and Phil Rigby  
E-mail: [Gordon\\_kruse@fishgame.state.ak.us](mailto:Gordon_kruse@fishgame.state.ak.us) or phone: 465-1606; [Phillip.Rigby@noaa.gov](mailto:Phillip.Rigby@noaa.gov)

Bottom trawls and dredges are common fishing gears used to harvest renewable resources from the world's oceans. Concerns exist about the chronic effects of mobile fishing gear on bottom habitats and non-target bottom-dwelling organisms. What are the effects of these fishing practices and what are the implications for management in Alaska's rich marine systems? In this session we will review the worldwide experience of fishing effects on the seafloor and discuss recent and ongoing research in Alaska. A special guest scientist, Jeremy Collie a Biological Oceanographer who specializes in fish population dynamics and benthic ecology at the University of Rhode Island, will review fishing effects studies conducted elsewhere in the world including experiments on Georges Bank, a prime fishing ground off the coast of New England. Regional scientists will present their latest findings from ongoing studies in the Gulf of Alaska, Aleutian Islands, and the Bering Sea. Finally, perspectives from the environmental and fishing communities will stimulate lively discussions on this fascinating topic.

### **Marine Protected Areas - Are They Right For Alaska?**

Session Co-Chairs: Alan Springer, University of Alaska Fairbanks and Michelle Ridgway, Oceanus  
E-mail: [ams@ims.uaf.edu](mailto:ams@ims.uaf.edu); or phone: 474-6213; [oceanus@ptialaska.net](mailto:oceanus@ptialaska.net) or phone: 463-6782

A variety of regulatory and closure areas for groundfish fisheries in the Bering Sea and Gulf of Alaska have been established in the past two decades to protect target species, reduce bycatch, preserve habitat, and ensure adequate prey resources for species at higher trophic levels. The most recent actions have placed no-trawl zones around many sea lion rookeries, and further restrictions are being sought to provide additional protections. A lively debate flourishes today over the need for marine protected areas (MPAs); do they achieve the desired goal of enhancing the abundance of sea lion prey, are they necessary, are they sufficient, will they lead to the collapse of lucrative fisheries for pollock, Pacific cod, and perhaps other species?

But the issue of MPAs is much larger than just the sea lion-pollock problem. In Alaska and elsewhere, have marine protected areas been effective? Do they impose unnecessary economic hardships? Do they have important scientific and conservation values? Faced with a burgeoning human population, ever increasing demands on the World's oceans to supply protein, and the riches of Alaskan waters, should we now consider additional MPAs to further preserve the spectacular biodiversity and productivity of Alaska's seas for their own sake and for the benefit of future generations? MPAs—are they right for Alaska?

### **Native Salmonids of Alaska**

Session Chair: Jack Piccolo

E-mail: [ftjpp1@uaf.edu](mailto:ftjpp1@uaf.edu) or phone: 586-8811 ext. 236

Restoration of native salmonids is receiving a lot of attention (and \$\$\$!) worldwide. Alaska is one of the few places left that maintains healthy wild populations of native salmonids. Restoration efforts in the lower 48 can benefit from information derived from our work on salmonids in relatively pristine environments. Subject matter for this session could be diverse, including population status, life history, movements, genetics, identification of unique stocks, management, and restoration, etc.. I will try to get funds to bring someone from in the lower 48 to give us some perspective on what the future could bring. If you are working with wild salmonids, please consider sharing your work in this session. Please contact Jack if you are interested.

### **Contributed Paper Session**

Session Chair: Carol Ann Woody

E-mail: [carol\\_woody@usgs.gov](mailto:carol_woody@usgs.gov)

I would like to encourage all fisheries biologists that have information to share but cannot fit their subject matter into the other session topics to submit abstracts to this session. I would like to encourage methods and techniques papers, ecological studies, ongoing research updates, and results of any fishery related studies for submission to this session. Please e-mail your abstracts in the suggested format by July 31.

### **Continuing Education Courses and Workshops**

#### **Course: Bootstrap Data Analysis: Applications and Limitations**

Instructor: Joel H. Reynolds, Biometrician, ADF&G and Affiliate Faculty, Dept. of Statistics, University of Washington

E-mail: [Joel\\_Reynolds@fishgame.state.ak.us](mailto:Joel_Reynolds@fishgame.state.ak.us)

Practical methods of applied statistics have expanded radically in recent years due to the availability of extensive computer power. This half-day course will provide a practical introduction to one of the most fruitful of these computer-intensive methods, bootstrap resampling. Properly applied, bootstrap resampling can liberate the data analyst from questionable distribution assumptions and greatly expand the available statistical tools, allowing the analysis to adapt to the problem rather than vice versa.

The course will introduce the basic concepts underlying bootstrap methods and demonstrate their use in developing bootstrap analyses for a range of common problems. Applications will include (as time permits): confidence interval estimation; single-, two-, and multi-group tests of equality (e.g., t-tests, ANOVA); regression (linear, nonlinear, nonparametric); repeated measures; likelihood ratio tests; etc.. The applications in which bootstrapping is known to work will be discussed, as will tricks to keep in mind in applying the methods to new problems. Handouts will be provided, including an annotated list of references to both the statistical and the application literature. After the course, the student should understand both the basics of how to apply the bootstrap as well as the breadth of problems to which it can be brought to bear.

**Course: Everything you Wanted to Know About Genetics but Were Afraid to Ask**

Instructors: Carol Kirkvleit and Jeff Olsen;  
Gene Conservation Laboratory, ADF&G  
E-mail: [carol\\_kirkvleit@fishgame.state.ak.us](mailto:carol_kirkvleit@fishgame.state.ak.us);  
[Jeff\\_olsen@fishgame.state.ak.us](mailto:Jeff_olsen@fishgame.state.ak.us)

Ever been confused at a genetics talk? Ever wonder who Hardy-Weinburg was and why it matters if his equilibrium is off? Or what a loci, allele, and gene have in common? Did you think  $F_{ST}$  stood for fast sexy things? What do those neighbor-joining trees mean anyway and how do you read them? Do you wonder what the difference between allozymes and microsatellites is and what such markers tell us about relationships among populations? Why is genetics such an important tool and how can it complement studies of life history, population distinction, and evolution? This session will cover these questions and more, including lingo, application, importance of and limitations related to current genetic markers. These instructors all started out not knowing anything about genetics and will NOT consider any question silly.

**Workshop: Age-Structured Assessment Models**

Facilitators: Fritz Funk and Peggy Merritt  
E-mail: [fritz\\_funk@fishgame.state.ak.us](mailto:fritz_funk@fishgame.state.ak.us)  
or phone: 456-6113; [Peggy\\_Merritt@fishgame.state.ak.us](mailto:Peggy_Merritt@fishgame.state.ak.us)  
or phone: 456-2259

In 1996, a workshop on "Age-Structured Assessment Models" was held in conjunction with the annual AFS meeting in Fairbanks, where informal discussions were held to promote an exchange of ideas. It's been 4 years, and it's time to get together again! Discussions will include, but are not limited to: current issues in fitting stock assessment models to heterogeneous data, weighting data sets, bootstrapping for variance estimation, use of Excel spreadsheets & Solver, how do those algorithms work anyway, evaluating model fit & parameter uncertainty, and more. . . .

If you are interested in participating in this informal workshop, or have a topic you'd like to share/bring up for discussion, please contact Fritz or Peggy.

**Alaska Chapter of the American Fisheries Society 2000 Meeting: Abstract Guidelines**

The following structured abstract is requested from potential presenters. Structured abstracts are beginning to replace traditional abstracts in journals because research indicates this format is more effective in information transfer. Two to three sentences are provided after each subheading. Limit the body of the abstract to 300 words or less.

*Title*

*Authors: affiliation, address, and e-mail*

**Background.****Purpose.****Method.****Results.****Conclusions.**

## Example:

Ecological relationship between freshwater sculpins and beach-spawning sockeye salmon in Iliamna Lake, Alaska  
*Chris J. Foote, School of Fisheries, Box 35-7980, University of Washington, Seattle WA 98036, [cjfoote@u.washington.edu](mailto:cjfoote@u.washington.edu)*  
*and Gayle S. Brown, Western Fisheries Research Center, U.S. Geological Survey, 6050 NE 65<sup>th</sup> St., Seattle, WA 98115, [gsbrown@usgs.gov](mailto:gsbrown@usgs.gov)*

**ABSTRACT**

**Background.** Pacific salmon spawning runs are highly predictable in space and time. Freshwater sculpins are suspected as significant predators on salmonid eggs, however, they are thought to eat only drifting or exposed eggs which would not survive to hatch.

**Purpose.** The purpose of this study was to examine and compare the distribution of spawning sockeye salmon and sculpin on beaches through time. We then estimate the magnitude of sculpin predation and address predator satiation as a means for reducing sockeye salmon clutch predation.

**Method.** Twelve sampling locations, which included spawning and non-spawning sockeye salmon habitat, were snorkel surveyed 20 times before, during, and after the spawning period. Numbers of sockeye and sculpin were assessed during each survey. The number and size of eggs sculpins (size categorized) could consume in 1 hr to 7 d was assessed in controlled enclosure experiments.

**Results.** Sculpin were more abundant on spawning vs. non-spawning areas prior to spawning by sockeye salmon; sculpin densities increased on spawning beaches until ~4 d after the density of spawning sockeye salmon females peaked. Sculpin densities declined as female sockeye salmon density declined. Sculpin predation on sockeye eggs is positively dependent on sculpin size and egg state (fresh vs. water hardened). Large sculpins can consume up to 50 eggs/hr and 130 over a 7 d period.

**Conclusions.** We conclude that sculpin actively move to specific spawning beaches and that the initiation of their movements precedes the start of sockeye spawning. It is estimated that sculpin can consume up to 16% of the eggs laid by beach spawning sockeye. Sockeye spawning appears to be an important factor affecting ecology of the two resident sculpin species, while sculpin appear to have helped shape the spawning behavior of sockeye- specifically their compressed spawning season, which could reduce predation by swamping predators with food.

# Oncorhynchus

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