

In this issue:

A Problem with Diet Studies of Humpback and Broad Whitefish

AFS Publications

New Chapter Continuing Education Chair

William Royce Passes Away

1st Call For Papers: Alaska Chapter Conference

Distinguished Service Award

Meetings and Events

And more . . .



An adult humpback and broad whitefish.

New Publications from AFS: Guidelines for the Use of Fishes in Research

The new 2004 Guidelines were developed to help scientists develop realistic understandings of fish in the design and conduct of research on fish and fish habitats. The Guidelines provide a structure that ensures appropriate attention to valid experimental design and procedures while ensuring humane treatment of fish. Written by the 11-member Uses of Fishes in Research Committee, the Guidelines provide recommendations on field and laboratory activities, such as sampling, holding, and handling fishes; information on administrative matters, including regulations and permits; and advice on ethical questions such as perceptions of pain or discomfort that may be experienced by experimental subjects. The 53-page document now includes many listings of web sites of value.

The Guidelines have been developed for use by researchers within the U.S.; therefore, the roles, responsibilities, and information needs of Institutional Animal Care and Use Committees are given specific attention. However, the principles described in the Guidelines are applicable to research on fishes everywhere. The Guidelines are available at: www.fisheries.org/html/Public_Affairs/Sound_Science/Guidelines2004.shtml. Cost of the guideline is \$7.00 per copy (includes shipping). ☺

A Problem with Diet Studies of Humpback and Broad Whitefish

Randy Brown

The diets of humpback whitefish (*Coregonus pidschian*) and broad whitefish (*C. nasus*) have been investigated by many scientists in many habitats. Common food items include mussels, clams, snails, crustaceans, insect larvae, zooplankton, and even plant matter. Generally, the bivalves and snails are reported to be the largest component of stomach content by mass. However, the author of one recent study remarked that the mass of stomach content was greater than total digestible mass because the shells of bivalves and snails were not subtracted from the total, leaving us with no real idea of which organisms were most important to the energy needs of the fish. But this problem is even stranger yet.

During the early summer of 2003, the U.S. Fish and Wildlife Service sampled harvested whitefish for stomach contents in the Kanuti and Selawik National Wildlife Refuges. All humpback and broad whitefish examined had been feeding and their stomachs were collected and stored in alcohol for later analyses. Clearly, in both sample areas, bivalves were the major food. The stomachs appeared to be completely packed with clams or mussels ranging from 1 to 10 mm in diameter. The bivalves have not been enumerated yet, but several hundred were present in each fish. A small number of snails and other small invertebrates were present too, as well as some unidentifiable material. We expected that when bivalves were digested the shells would separate, so we were surprised to see that the lower intestinal tracts of these fish were packed with intact bivalves that looked just like those in the stomach.

Being biologists we had to investigate this matter further. We started by breaking into a

Continued on page2

The President's Column

Tim Joyce

A few years ago, I switched from a job with the state of Alaska to one with the U.S. Forest Service. My career with the state dealt primarily with salmon and trout in one way or another. So when I took my new job as a subsistence fishery biologist, I anticipated using my background in the salmon field quite extensively. I have a small reference library and contacts that I could call for help should the need arise. What a shock it was when the first project that I was assigned dealt with eulachon (*Thaleichthys pacificus*) where a trophy fish was 8 inches long! I thought to myself at the time “at least they are anadromous.” I learned enough about eulachon that summer and fall to realize that there are other fishes in the sea, besides salmon, and not too much is known about them. I also realized that I needed to broaden my focus beyond salmon and trout and expand my library and contact list. As a subsistence biologist I was now dealing with social impacts of fisheries and not just the biological and economic impacts. Some of these lesser known species are just as important to the people that use them as are salmon to the commercial and sport fishermen.

The next project that came along was collecting basic population information on cutthroat trout (*Oncorhynchus clarkii*), Dolly Varden (*Salvelinus malma*) and humpback whitefish (*Coregonus pidschian*) in the local area. Once again, I was surprised at how little was known about some of these fish. The first big debate that occurred was over the species of whitefish that was in the local area. This is where the expertise of the members of the Alaska Chapter of AFS comes in. I remembered that a whitefish committee was starting to get organized at the November 2003 chapter conference, so I emailed one of the organizers to get advice on these whitefish. It was from this advice that we arrived at a consensus on the species. Later, I was put in touch with another biologist who had been radio tagging whitefish to study the migration patterns of mature adults in large



river and lake systems. Now, I wonder if the whitefish adults found in the lake systems during the summer on the short coastal streams where I work also migrate to various other systems to spawn? I think it rather important that we at least know the spawning grounds of these fish. What is the best way to track these fish? If we use radio tags, which ones work the best?

I am using these examples to illustrate the importance of our fisheries society. There are a variety of fields in the fisheries profession. As in many cultures, specializations occur as a matter of efficiency. We have specialists in the fisheries field too and they can be of great help. The Alaska Chapter brings these people together as a group to pool all that information. As a group, the fisheries professionals are some of the most helpful people you will find. Their advice is not only helpful, but can lead you to ask the right questions. Stay involved with your chapter, attend the annual conference, visit the web site and read the newsletter. You never know when that new project might come along and that expert advice just might be needed or, even better, you may be able to provide that advice to someone else. ☺

Bill Wilson Receives Distinguished Service Award

Bill Wilson, North Pacific Council, was honored at the 2003 national AFS meeting for his guidance, oversight, and inspiration in completing *Fishes of Alaska*—the first comprehensive taxonomic guide to North Pacific fisheries identification produced in nearly four decades. Bill is shown in the photo with AFS Past President Fred Harris. ☺



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

Production

Connie Taylor / Fathom Graphics
P.O. Box 200448
Anchorage 99520-0448
Phone/Fax (907) 272-3305
mct@alaska.net

Deadline for materials for the spring issue of *Oncorhynchus* is June 10.

Alaska Chapter's Internet Home Page Address

<http://www.fisheries.org/afs-ak/>

William Royce Passes Away

William F. Royce, a professor and textbook author whose four decades of research helped modernize the fishing industry, died of Alzheimer's disease January 26 at the age of 88. Royce wrote more than 116 professional papers, books and scientific fishery articles between 1935 and 1994.

Royce was born in upstate New York, and earned a doctorate from Cornell University in 1943. He conducted some of the earliest studies of lake trout populations in his home state, devising an under water camera housing to photograph lake trout.

During his more than 15 years working for the U.S. Fish and Wildlife Service, Royce was director of the Woods Hole Fisheries Laboratory and assistant director of research in Juneau. He joined the University of Washington in 1958 as director of research at the UW College of Fisheries; later he was named associate dean. He traced North Pacific salmon migrations and directed studies of salmon and aquatic environments.

A fellow scientist, Robert Burgner, said of Royce "He was extremely organized and very professional. One of the things he got us doing was publishing our research. Until he encouraged us, the research had just been sitting around. That got our results out in the open."

One of Royce's leading works, "Introduction to Fishery Science," was published in 1972, the year he was appointed associate director for research at the National Marine Fisheries Service.

Royce, who was described as an original thinker by his sons, believed in protecting the environment but sometimes resisted popular opinion. After the *Exxon Valdez* oil spill, Professor Royce testified for Exxon, pointing out that the tragic incident would not permanently disable affected fish populations.

After retiring from active teaching and research, he consulted for the U.S. Agency for International Development on Fish Farm Development for the Third World in the late 1970s and early '80s. ☹

Diet, Continued from Page 1

few of the larger individuals. There appeared to be bivalve tissue inside rather than waste material. We rinsed out the contents of the lower intestinal tracts of several fish and encountered less than 10 open shells among many hundreds that were closed. It was looking like bivalves were eaten and rarely digested, but were they actually alive? Even thinking such a thing seemed absurd, but solid evidence is persuasive.

My academic training failed to teach me how to tell live from dead bivalves, so we puzzled over this matter for some time. It's not nearly as straight forward as with a fish or a bird. Eventually we just rinsed them until all we had was a petri dish with clear water and a bunch of small bivalves. Then we let them sit without moving. After a long time (bivalves are very patient) they began to open up and their siphons and feet emerged from their shells. We could see them probing around, and it was clear that they were alive. Not just some of them, all of them were alive. It was then we realized that diet studies had a much bigger problem than just not subtracting the mass of the shells from the stomach contents.

Research into curious findings often leads one across disciplinary boundaries, and that is what has happened in this case. We began to realize that this story was as much about bivalve biology as it was about fish biology. Bivalves in marine environments broadcast spawn, the larvae drift as plankton for some time and then become demersal. If they are in a good place when this happens, they live, if not, they die. In freshwater systems bivalves also broadcast spawn, but the fertilized eggs sink and rapidly develop into minute young bivalves that resemble adult forms. Obviously, if they practiced drift distribution the young would always be at or downstream of the parent locations,

which would be a problem in the long-term. Those who have studied bivalve distribution in freshwater have discovered that for some species, the young will get sucked through a fish's gills and clamp on for a period of weeks or months before dropping off, thus solving the distribution problem. It appears that we stumbled upon another dispersal option for freshwater bivalves.

The concept of these fish as great underwater busses for bivalves isn't very appealing to a fish biologist. The energetic implications are huge and have a bearing on previous and future diet studies. What benefit could there be for fish to pass such great quantities of unutilized material through their intestinal tracts? There must be more to this story, and we will continue our investigations this coming summer with a more formal plan to document the live passage of bivalves through the intestinal tracts of humpback and broad whitefish. I don't know what we will discover, but I'm sure it will be interesting. ☹

New Chapter Continuing Education Chair

Toshihide Hamachan / Hamazaki

I am taking over Debby Burwen's AFS-AK Chapter's Continuing Education Chair position. Thanks to Debby's efforts, we had great workshops, and I certainly hope to continue this tradition. I am now preparing for the workshop program for the November 2004 meeting in Sitka.

Based on last year's workshop waiting lists, we still have demands for GIS and database courses. Also, there are some demands for advanced statistics courses, such as Bayesian, bootstrap, and fishery stock assessment modeling.

At this moment, I am open to your suggestions. Please let me know your workshop suggestions (and possible instructor) so that I can meet your workshop needs. Phone: 267-2158, e-mail: toshihide_hamazaki@fishgame.state.ak.us. ☹

First Call for Papers: Alaska Chapter Annual Conference Sustaining Alaska's Fisheries: Visions for the Future

Molly Ahlgren

The 2004 Annual Conference of the Alaska Chapter of AFS will be held November 15-18 in Sitka at the Harrigan Centennial Hall. Now is a good time to start thinking about presenting your work in one of the sessions. Several sessions are already being planned and are listed below. If you are interested in presenting at a particular session, contact that session chair. Detailed information about abstract format and deadlines will be available in the summer issue of the *Oncorhynchus*. If you have ideas for continuing education courses or other session topics please contact Molly Ahlgren, e-mail: moahlgren@sj-alaska.edu, or phone: 747-5255.

Human Dimensions of Fisheries Management

Session Chair: Martin Robards, University of Alaska, Anchorage, e-mail: mro@uaa.alaska.edu, or phone: 786-7749.

Description: Humans and fish have interacted with each other and their environment for millennia. Retrospectively, it is clear that these relationships have been ones where both actors and their environment have been in constant states of flux. As a result, historically dependent equilibria between humans, fish, and their environment have been elusive, or at best transitory. It is these inherent dynamics that continues to challenge policy designed to optimize system outputs. In this session, we focus on cases where humans and fish have continued to adapt and respond to profound changes in their environments, while maintaining functionality. Rather than focus on quantitative methods to assess fishery status, we will use this session to elucidate elements of functional and response diversity that have fostered the ability of humans and fish species to respond and persist through change. This is at the heart of the developing field of resilience and a promising scientific arena from which policy might draw guidance.

Managing Alaska Marine Fisheries in the Face of Arctic and Subarctic Climate Change

Session Chair: Kate Wedemeyer, Department of the Interior Minerals Management Service, Anchorage, e-mail: kate.wedemeyer@mms.gov, or phone: 271-6424.

Description: Global climate change has been measured as an average global change of 0.6°C over the past several decades. Measures and predictions of future change indicate it is greatly magnified toward the polar regions. Indeed, Alaska has experienced a 2°C change over the same period. The mean arctic annual surface temperature increase north of 60° is projected to be 2-4°C higher by mid century. Along with temperature changes, precipitation is predicted to increase 8%. The purpose of this symposium is to review how that climate change is being reflected in Alaska's fisheries. More importantly, the symposium would begin a discussion around the question, "How do we AFS members, as fisheries professionals, prepare and manage in the face of such changes?"

Marine Protected Areas

Session chair: Dolly Garza, University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, e-mail: ffdag@uaf.edu, or phone: 247-4978.

Description: During this session we will review the efforts of the federal committee on marine protected areas as well as presentations on regional efforts. More local efforts and concerns will also be presented from tribal and community members.

Early Life History of Marine Fishes

Session Chair: Mike Byerly, Alaska Department of Fish and Game, Homer, e-mail: mike_byerly@fishgame.state.ak.us.

Description: Reproductive success in marine fish populations can fluctuate widely. These fluctuations can telegraph through a cohort's growth resulting in substantial variability in recruitment to a fishery. Recruitment is ultimately the product of a series of dynamic physical and biological processes acting on a cohort. Processes affecting egg fertilization, larval growth and survival, retention and dispersal of larvae, settlement and habitat selection, and post-settlement growth and survival can act separately or in concert in determining successful recruitment. Many early life history studies focus on understanding the basic biology and ecology of larval or juvenile marine fish to address one or more of these factors. Still other research focuses on assessing habitat requirements for a particular life history stage. This session will bring together researchers studying the biology, ecology, and recruitment of larval and juvenile marine fishes in the north Pacific.

Advances in Marine Biology

Session Chair: Dan Urban, Alaska Department of Fish and Game, Kodiak, e-mail: dan_urban@fishgame.state.ak.us, or phone: 486-1849.

Description: Research continues around Alaska in the marine environment on non-salmonid issues. This session will serve as a venue for publicizing the wide variety of innovative and important work being done. Possible topics could include survey techniques, adult life history, interpretation of age structures, and habitat classification techniques.

Coregonid Life History Research: Methods and Application

Session co-Chairs: Randy J. Brown, U.S. Fish and Wildlife Service, Fairbanks FWFO, e-mail: randy_j_brown@fws.gov, or phone 456-0295, and Ken Harper, U.S. Fish and Wildlife Service, Kenai FWFO, e-mail: ken_harper@fws.gov, or phone: 260-0122.

Description: Coregonid fish species are widely distributed across much of North America, Asia, and Europe. They are often found in great abundance and are a major food resource in many places. Range maps for most species are reasonably accurate in North America, but our understanding of population dynamics is lacking in most aquatic systems, particularly so in Alaska. With few exceptions, rearing areas, feeding habitats, spawning locations, spawning periodicity, abundance, and migration dynamics are all unknown. In addition, a number of taxonomic issues remain to be resolved.

This session's focus will highlight an assemblage of fish that is very common in Alaska yet receives relatively little research. Papers dealing with habitat considerations, migration, taxonomy, population monitoring, harvest management, abundance, life history stage determination, ecological factors, traditional ecological knowledge, and other topics related to coregonid fish will be considered for inclusion.

Char Life History, Diversity, Distribution and Management in Alaska.

Session Chair: Fred DeCicco, Alaska Department of Fish and Game, Sport Fish Division, Fairbanks, e-mail: fred_decicco@fishgame.state.ak.us or phone: 459-7270.

Description: Four species of char are distributed throughout Alaska from the lakes and streams of Southeast to those of the

northern Arctic coast. Char occur in a variety of forms and life history types suited to the habitats in which they are found. Char can exist as anadromous, lake resident, stream resident, and dwarf populations, sometimes with more than one form and more than one species occurring in the same watershed. All this variety coupled with complex movement patterns of some species or forms result in a challenge to managers who are given the task of managing for sustained yield while conserving populations. Robert Armstrong once summarized the migrations of southeastern Alaska Dolly Varden as a “manager’s nightmare”. This session is soliciting papers that provide information on management, distribution, diversity, and the relationship among species and stocks of char in Alaska.

Alaska Enhancement Programs: Steep Passes to Lake Stocking to Large Scale Hatcheries.

Session chair: Steve Reifensstuhl, Northern Southeast Regional Aquaculture Association, Sitka; e-mail: steve_reifensstuhl@nsraa.org, or phone: 747-6850.

Description: This session is soliciting papers that provide

information on the breadth of enhancement strategies used in Alaska today with an emphasis on evaluation and monitoring of programs, benefits to the public and user groups, and current research on wild stock and hatchery interactions. A diversity of papers is being sought that represent the variety of programs across state, federal, tribal and private non-profit enhancement agencies.

Contributed Papers

Session chair: Lisa Stuby, Alaska Department of Fish and Game, Fairbanks; e-mail: lisa_stuby@fishgame.state.ak.us, or phone: 459-7202.

Description: Presenters with topics that do not fit the subject matter of the other sessions are encouraged to submit abstracts to this session (e.g., methods and techniques papers, ecological studies, ongoing research updates).


Poster Session

Session chair: Corrine Ferguson, U.S. Forest Service, Sitka; e-mail: corrineferguson@fs.fed.us, or phone: 747-4247.

Description: Contributors interested in presenting their work with a poster should submit abstracts. ☺

Meetings and Events

Second International Burbot Symposium



The second international burbot symposium will be held in association with the Western Division AFS and the National AFS 2005 annual meetings in Anchorage. Contact Vaughn L. Paragamian, Idaho Department of Fish and Game, 2750 Kathleen Avenue, Coer d' Alene, ID 83815, e-mail: vparagam@idfg.state.id.us.

2004 Alaska Chapter ASA meeting update

Gregg Rosenkranz

The 2004 meeting of the Alaska Chapter of the American Statistical Association will be held in Kodiak July 13-15. Carol Gotway-Crawford of the Center for Disease Control will be presenting a seminar on GIS and spatial statistics that I'm sure will be of interest to many of you.

Our local visitor's bureau would like to help us by negotiating prices for and reserving a block of rooms at a local motel. But first they need a head count. Typically, July is a busy time in Kodiak due to good weather and good fishing, and places may be hard to find at the last minute. So I'm requesting that folks who know they are coming and want a motel room let me know by e-mail ASAP, gregg_rosenkranz@fishgame.state.ak.us.

The Kodiak Island Convention and Visitors Bureau also has a nice website that you might like to check out, <http://www.kodiak.org/>. Among other things, there is contact information for B&Bs (in case that's more to your taste than a motel room), Ft. Abercrombie State Park (in case you want to camp out), and sea kayak rentals.

There are also spots available if anyone is interested in going salmon/halibut fishing on a charter boat in the evening after Tuesday's seminar. The estimated cost is \$100 per person and you must have a valid Alaska fishing license. If the boat is full, I will lead a hike to the top of a nearby mountain, but if there are unclaimed spots, I'm going fishing myself!

4th World Fisheries Congress

The AFS invites you to the Fourth World Fisheries Congress to be held in Vancouver, British Columbia, Canada from May 2-6, 2004. The congress theme, Reconciling Fisheries with Conservation: The Challenge of Managing Aquatic Ecosystems, will be addressed by a world class list of keynote speakers, session topics, posters, limited presentations, round table discussions, forums, workshops and debates. The Congress website, <http://www.worldfisheries2004.org/home.htm>, has recently been updated with the complete program, including abstracts from over 10,000 oral presentations and poster sessions.



28th Annual Larval Fish Conference

The 2004 Larval Fish Conference will be held May 23-26, 2004 in Clemson South Carolina. Three days of talks will be held at the Outdoor Laboratory at Clemson University. Please contact info@lfc2004.org or visit the conference website, <http://www.lfc2004.org/index.html> for all questions concerning the conference.



International Congress on the Biology of Fish

The National Institute for Research in the Amazon and the American Fisheries Society Physiology Section are pleased to invite you to participate in the Sixth International Congress on the Biology of Fish, at the Tropical Hotel Manaus Conference Center, Manaus, Brazil, August 1-5, 2004.

Take advantage of this once-in-a-lifetime opportunity to see the heart of the Amazon and catch up on the latest advances in fish biology. Complete travel packages from the U.S. start at less than \$1000 for airfare, hotel, and all meals.

Student travel grants are also available. For more information visit the web site: <http://www.fishbiologycongress.com.br/index.htm>. ☺

Oncorhynchus

Allen Bingham
P.O. Box 221804
Anchorage, AK 99522-1804

RETURN REQUESTED - DO NOT FORWARD

2004 Alaska Chapter Officers

President Tim Joyce, USFS, PO Box 280, Cordova 99574-0280, Phone: 424-4747, Fax: 424-7214, tjoyce@fs.fed.us

President-Elect Molly Ahlgren, Sheldon Jackson College, 801 Lincoln Street, Sitka 99835-7699, Phone: 747-5255 Fax 747-5254, mahlgren@sj-alaska.edu

Vice President Hal Geiger, ADF&G/CF, P.O. Box 240020, Douglas 99824-0020, Phone: 465-4257, Harold_J_Geiger@fishgame.state.ak.us

Treasurer Ray Hander, Fairbanks Fish and Wildlife Office, 101 12th Ave., Room 222, Box 17, Fairbanks 99701, Phone: 456-0402, Fax: 456-0454, ray_hander@fws.gov

Secretary Bob Piorkowski, ADF&G/CF, 1225 W. 8th St., Juneau 99802, Phone: 465-6109, Robert_Piorkowski@fishgame.state.ak.us

Past President Carol M. Kerkvliet, ADF&G/CF, 333 Raspberry Rd. Anchorage 99518-1599, Phone: 267-2379 (w), 248-3343 (h), Fax: 267-2442

Student Unit President Mark Stichert, University of Alaska Fairbanks, 211 Irving I Building, P.O. Box 757020, Fairbanks 99775 Phone: 474-7717, fbafs@uaf.edu

Feel free to contact the Executive Committee members.

2004 AFS Membership Application

You can JOIN the AFS and the Alaska Chapter on-line (or by fax/phone), see <http://www.fisheries.org/html/membership/choicenew.shtml> for details, or fill out the application form and process as noted below.

Print or type applicant's name in full

Address

City

State

Zip Code

Nation

Membership year*

Kindly make checks payable to American Fisheries Society in U.S. Currency or drawn on a U.S. bank.

Please mail to Allen Bingham P.O. Box 221804 Anchorage, AK 99522-1804

Professional recruiting others (PROCLUB)

If applicant is a student as defined below, the teacher endorsing him signs here.**

Name of institution where student is enrolled

Date

Please provide phone numbers for directory and Society use only:

Home _____ Work _____

Fax _____ Email _____

Employed by:

federal govt. state/prov.gov't. industry academia self

Alaska Dues: \$10.00 Alaska Student Dues: \$5.00

Membership Dues (includes *Fisheries* and Membership Directory)

Regular (North America): \$76.00 (Other than North America, \$88.00)

Student (North America)**: \$38.00 (Other than North America, \$44.00)

Young Professional***: \$38.00

Retired (North America): (65 or over): \$38.00 (Other than North America \$44.00)

Life (All): \$1,737.00 (includes *Fisheries* and one other journal of choice)

¹ Prices are for AFS members only ² Membership not required for subscription
* New members accepted Jan. 1-Aug.31 are credited to full membership for that year. (Back issues of Journals are sent.) Members accepted Sept. 1-Dec. 31 credited to full membership as of next Jan. 1, unless requested otherwise. Membership on calendar year only.

Journal Subscriptions (Optional)

Transactions of the AFS ¹ NA. Journal of Fisheries Management ¹

\$43.00 Paper in North America \$48.00 Paper other than N.A.

\$25.00 E-Pub via WWW/Internet

North American Journal Journal of Aquatic Animal Health ¹

\$38.00 Paper in North America \$41.00 Paper other than N.A.

\$25.00 E-Pub via WWW/Internet

** Bona fide students of fisheries subjects are eligible for Student membership (limited to 6 years). Persons employed full-time not eligible. Teacher endorsement required (see above).

*** Within 3 years of graduation.

NOTE: Retired membership for Active members upon retiring at age 65.

Sustaining membership for commercial firms, conservation clubs, or others desiring to support the Society. Library Subscriptions include bimonthly *Transactions*, quarterly *North American Journal of Fisheries Management*, *Journal of Aquatic Animal Health*, quarterly *The Progressive Fish-Culturist*, bimonthly *Fisheries*, and Membership Directory.