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Basket of weathervane scallops aboard the F/V Provider. Photo by Jessica Glass.

Alaskan Weathervane Scallops:

Shucking Socioeconomic and Biological Unknowns

Jessica Glass

Weathervane scallops (*Patinopecten caurinus*), the world's largest scallop, can grow to shell heights of 25 cm and live up to 28 years old! Targeted by one of Alaska's smallest commercial fisheries (there are currently only four active vessels), most of the catch is shucked, flash frozen, and packaged onboard, leading to a high-quality product commonly offered at white tablecloth restaurants in Alaska and the Pacific Northwest, or seen wrapped in bacon at the Ballard, Washington Seafood Festival. All four vessels are home-ported in Kodiak, where scallops make an appearance at the annual Kodiak Crab Festival. Another hub for weathervane sales is the Kenai Peninsula, where scallops can be found at the Farmer's Market, Coal Point Seafood Company, or roadside stands.

Broadly distributed across the continental shelf in the North Pacific, weathervane scallops occur

from central California to the Pribilof Islands in aggregations known as beds, to depths of 300 m. Beds include clay, sand, and gravel sediment types. Considered a "hard-on-bottom" fishery, Alaskan vessels typically tow two New Bedford-style dredges. The dredges essentially consist of metal frames that support "bags" constructed of metal rings, allowing soft sediments to be sifted while retaining the scallop catch. This gear is quite efficient at catching scallops, but species caught as bycatch include benthic invertebrates (e.g., crabs, sea stars, and anemones) and fishes (e.g., skates, flatfishes, and other groundfish). The fishery is managed inseason by the Alaska Department of Fish and Game (ADF&G), with overfishing determinations implemented through the North Pacific Fishery Management Council and the National Marine Fisheries Service (NMFS). Since

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The President's Corner

Phil Loring

This is the last *President's Corner* that I will have the pleasure of contributing to our newsletter. In October, the gavel will change hands to Jennifer Stahl at the annual meeting, which she is chairing.

Jenny joined the Ex-com in 2012, and has been a valuable colleague and an asset to the team. She works with groundfish at ADF&G in Juneau, and holds a Master's degree from UAF, which she received in 2004 working with advisor Gordon Kruse. This year's meeting should be a really exciting affair; with Jenny's leadership it stands to be the largest and most diverse meeting we've had.

As Chapter President, a goal of mine has been to shine a spotlight on areas where fisheries science in Alaska engages (or can engage) with societal issues broadly, and I will continue to do so in my role as Past-President. One such area that I believe needs much more attention from us all is the issue of food security, whether scoped locally or globally, and the related question of aquaculture. In Alaska, we all know that aquaculture is widely considered to be a four letter word, even though so many of our fisheries are subsidized by hatcheries. "Friends don't let friends eat farmed fish" is a bumper sticker that one sees on many cars in towns like Homer, Cordova, and Kodiak, and the sentiment is both valid and appreciable. Competition hurts the prices that our local fishermen receive, and the various ecological impacts and risks that many aquaculture solutions pose are difficult to justify under any circumstances. Nevertheless, people worldwide continue to experiment and develop aquaculture solutions, driven largely by an opportunity in global markets to cultivate



Phil Loring, AFS Alaska Chapter President.

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Weathervane Scallops, continued

1993, 100% observer coverage has been required for vessels fishing in all registration districts except Cook Inlet, where observer coverage is at the discretion of ADF&G managers.

In the early 1950s and mid 1960s, exploratory fishing expeditions identified commercially viable weathervane scallop beds around Yakutat and Kodiak Island. However, a commercial scallop fishery did not develop until 1967, largely due to a lack of specialized scallop gear in Alaska. After a single vessel fished in 1967, the fishery quickly escalated. A "boom and bust" cycle ensued during 1970–1993, as vessel participation rose and fell with weathervane scallop stock status and with fluctuations in the landings and market conditions for the Atlantic sea scallop (*Placoplecten magellanicus*) found off the northeastern United States and eastern Canada. Known in the past for their rowdy crews, many weathervane scallop vessels originated from New England, but local participants from Alaska soon began to outfit crab, salmon, halibut, and shrimp vessels with scallop dredges.

For the past decade, the scallop fishery off Alaska was managed under a license limitation program in federal waters (3–300 miles offshore), and a limited entry permit program in state waters (0–3 miles). Recently, political tension emerged concerning the amount of consolidation that has occurred after some vessels formed a cooperative; specifically, some people feel that consolidation has hindered economic opportunities for Alaskan residents. Because of these concerns, the Alaska State Legislature failed to pass a bill that would have renewed the limited entry provision of the fishery in state waters. The result was a management discontinuity with license limitation remaining in federal waters and open-access in state waters beginning in 2014. Although 80% of the commercial harvest of weathervane scallops occurs in federal waters, reverting back to an open-access fishery after limited access for almost a decade marks a unique event in the history of Alaskan fishery management! In addition to resource allocation issues, other recent concerns include declining stock status, and whether some areas containing

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The President's Corner, continued

and grow the appetite for fish. To be clear, we're not talking about feeding the world; a lack of food production is not the reason people go hungry today and it will not be the reason 10 or even 50 years from now. People are the reason why other people go hungry, and population growth and ecological overshoot are symptoms, not mandates (but I digress).

The point that I am leading to is that the aquaculture question is a gorilla in the room that requires active engagement if we want to help ensure the future of Alaska's various fisheries and fishing communities. As with most debates over the social and ecological appropriateness of new technologies, most people are polarized, arguing to caricatures of the issue rather than focusing on the important details of scale and power. Recently, however, an extraordinarily rational review piece on the matter was published by *Max Troell et al. (2014)*. This is a must read and a manifesto for how societies might proceed with respect to answering the aquaculture question. The authors ask, more or less, "What is our goal for aquaculture?" If that goal is to build capacity and perhaps even resilience into local and global food systems, then a great many issues need to be addressed. Specifically, the authors highlight the market's failure to accurately represent the ecological costs of aquaculture practices in the prices of its products, and also the importance of not allowing aquaculture to degrade regional resilience and local economies by pushing out the small-scale fishing sector.

We are poised here in Alaska to contribute

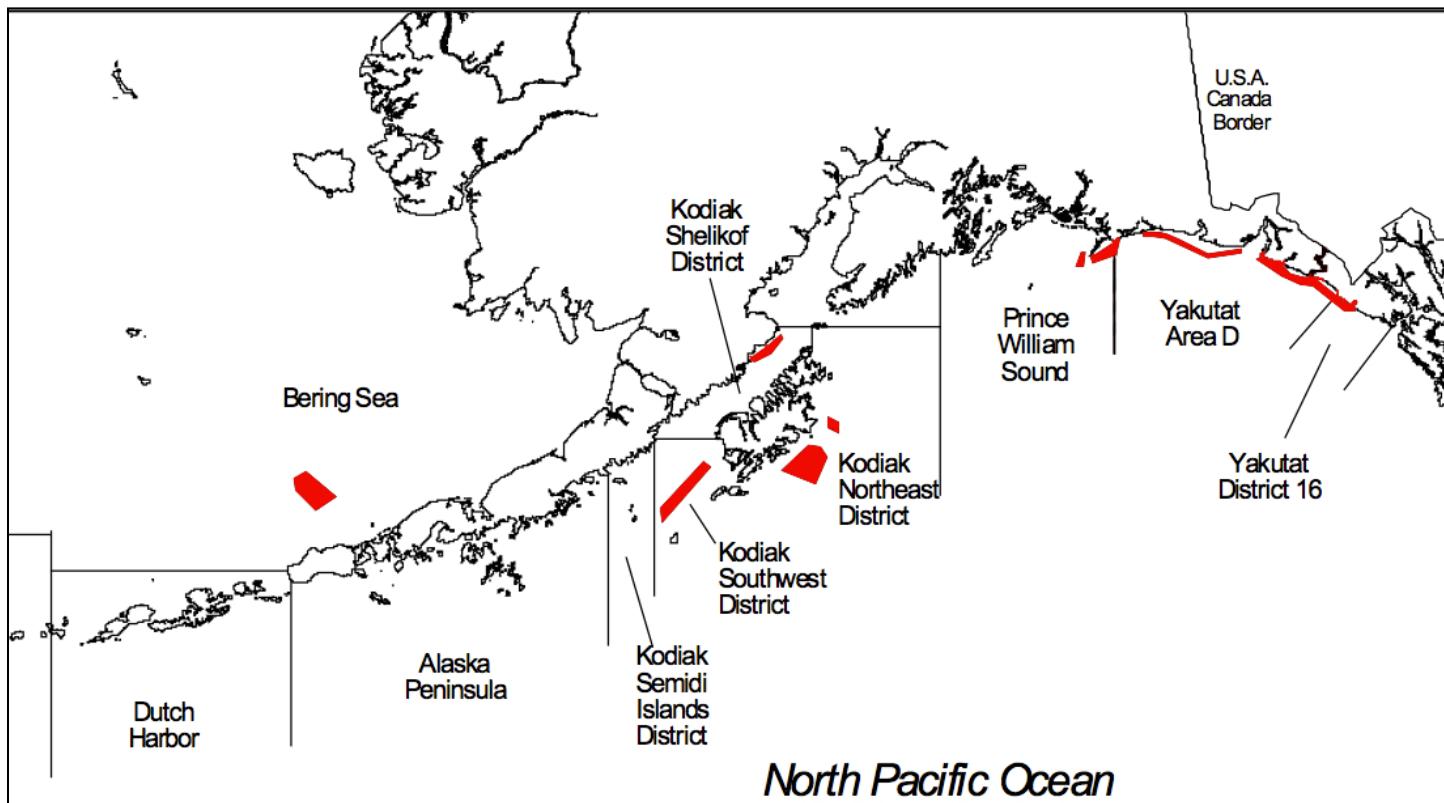
substantively to both of these discussions. We are in many ways on the front-line, with small-scale fishing communities and cultures already struggling for autonomy and self-determination in an increasingly globalized and warming world. We steward an invaluable treasure trove of genetic diversity in our salmon runs and other fisheries. And, we have been experimenting for decades with ways to enhance our fisheries through hatcheries and escapement targets. Who better to answer the difficult questions of how to implement aquaculture without accepting the social and ecological consequences that it presents in its current form? I am not arguing for advocacy here, but for producing the best possible science that explores these issues—the genetic and environmental and social justice issues—in the most comprehensive way possible. Ultimately, decisions will be made one way or the other; better, in my opinion, to be at the reigns.

I believe that our membership represents an unparalleled body of professionals, so have nothing but the utmost expectations for our collective ability to engage with these issues. It has been a pleasure becoming more engaged with you all through my role as President and I hope to continue to cultivate these relationships for a long time yet. I will not see you at our annual meeting; my wife and I recently had a little girl, Cordelia Jean Loring, though she came nearly three months too early and as such I spend much of my free time with her in the NICU. I do wish you all a grand time at the meeting in October, and hope to see you all very soon. 

2014 Annual Meeting of the Alaska Chapter of the American Fisheries Society

The 41st annual meeting of the Alaska Chapter of the American Fisheries Society (AFS) will be held jointly with the annual Alaska Chapter meetings of the American Water Resources Association (AWRA) and the Southeast Alaska Fish Habitat Partnership (SEAKFHP) in Juneau from October 20 to 24, 2014. The theme of the meeting is "Bridging Disciplines to Solve Today's Challenges in Resource Management." This will be an exciting meeting and include continuing education courses, plenary speakers, contributed talks, and special sessions. There will also be lots of social events for getting to know your colleagues and for cross-fertilization between organizations, including a welcome social, short film festival, poster session, and banquet. A total of 34 special sessions will be presented with themes in marine and freshwater fisheries, habitat, hydrology, human dimensions, climate, and data collection and management. A list of all sessions and any updated information is available at <http://www.afs-alaska.org/annual-meetings/fall-2014>. 

Alaskan Weathervane Scallops, continued



Fishery Registration Areas.jpg Registration areas requiring observer coverage for the weathervane scallop fishery off Alaska.
Figure from Gregg Rosenkranz, ADF&G.

viable scallop beds that were closed in the 1960s to protect crab stocks should remain closed, given the failure of depressed king and Tanner crab populations to recover.

Given these concerns and unknowns, the two main goals of my research were to: (1) identify a comprehensive suite of social and economic factors influencing the commercial weathervane scallop fishery; and (2) explore patterns in benthic species associated with weathervane scallop beds across the continental shelf off Alaska.

To look at socioeconomic issues, I turned to a method developed in the 1960s for strategic management in the business and marketing fields: a strengths, weaknesses, opportunities, and threats (SWOT) analysis. A SWOT analysis involves gathering opinions from people knowledgeable about a particular business or industry. I used a SWOT analysis to identify, clarify, and offer potential solutions to current socioeconomic issues, as well as to instigate a dialogue about future fishery options in Alaska. Along with my advisor, Gordon Kruse, and Scott Miller at NMFS, I developed a questionnaire and conducted semi-

structured interviews with the scallop fleet, as well as plant managers, fishery biologists, fishery managers, and members of Alaskan coastal communities connected to the scallop industry through professional involvement. Questionnaire topics included attitudes of the Alaskan public towards scallop dredging, impacts of the scallop industry on Alaskan coastal communities, market influences of U.S. east coast and imported scallops, changes in scallop fishery management (to include both observed changes from the past and desirable changes for the future), and environmental considerations. Responses from 29 interviewees were recorded and compiled.

Several unifying opinions emerged from this study, including a perception that many Alaskans are unaware of the fishery, given its small size. The industry is largely concerned about rising fuel costs and diminishing harvest levels. Whereas the data-poor status of the stock appears to be the fishery's biggest weakness, the greatest strengths come from conservative management, industry self-regulation, and a relatively small fishery.

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Alaskan Weathervane Scallops, continued

footprint. Impending threats include stock declines, unknown long-term effects of dredging, and changes in the management and structure of the fishery with reintroduced open access in state waters. The majority of participants consider the fishery to be managed sustainably, although lack of data on scallop recruitment and abundance is a big concern. Scallop dredge surveys are conducted annually in Cook Inlet and off Kayak Island, but not in other regions where the majority of commercial effort takes place.

Whereas balancing progressive management with cost-effectiveness

appears to be the most pressing challenge facing managers of Alaska's weathervane scallop fishery, industry members are more concerned with maintaining high prices to dampen effects of harvest declines. Given that increased agency funding for scallop research and assessment is unlikely, future steps in gear development, bycatch avoidance, and other aspects of weathervane scallop research need to be driven by industry and academic involvement.

Despite broad consensus among stakeholders on many scallop fishery issues, the topic of bycatch, my second research focus, was more controversial. Many scallop biologists and fishery managers expressed little or no immediate concerns about bycatch by the scallop fleet, whereas bycatch was a prominent issue among coastal community members. Although the scallop fishery has made strides to reduce bycatch, particularly with respect to crabs, there remains room for improvement and innovation. As a step in this direction, an analysis of how bycatch has changed over time was sorely needed. Fortunately, mandatory observer coverage has created a multi-decade span of bycatch observations from the commercial scallop fishery.



Shucking scallops (extracting the meats) aboard the F/V Provider. Photo from Jessica Glass.

I used bycatch data over 1996–2012 as an index of benthic community composition, and analyzed data for spatial patterns and temporal changes, looking specifically at how those changes related to environmental variables and fishing effort.

Across weathervane scallop beds in the Gulf of Alaska, Aleutian Islands, and eastern Bering Sea, commercial scallop hauls were dominated by four families: Pectinidae (scallops), Pleuronectiformes (flatfish), Rajidae (rays), and Asteroidea (sea stars). Using non-parametric statistics, I found significant differences in benthic community structure at a relatively large scale (among fishery registration districts), as well as among individual scallop beds. Spatial differences were most strongly correlated with sediment, depth, and dredging effort. In some comparisons, such as between muddy Yakutat beds and gravelly beds in the Aleutian Islands, variations in depth and sediment type of a bed were clearly reflected in differing species compositions. Spatial correlations between species composition and dredging effort were most prominent in Shelikof Strait, where high dredging effort on one bed was reflected in lower catch per unit effort of

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Alaskan Weathervane Scallops, continued



Preparing dredges for deployment from the F/V Provider. Figure by Jessica Glass.

bycatch species, compared to a bed that was rarely fished throughout the sampling period.

Changes in species composition over time were also detected, with significant differences between 1996–1999 and 2000–2012. This observed split might be attributed to changes in the observer program after the start-up years, or altered fishing behavior associated with the formation of a fishery cooperative in the year 2000. Temporal changes were weak, but significantly correlated with freshwater discharge and dredging effort. In the Bering Sea, for example, dredging effort is currently much lower than in the mid 1990s, and increases over time in the relative abundance of certain families of sessile organisms, including sponges and sea pens, might be indicative of an evolving benthic system.

Characterizations of these spatial and temporal patterns bear on federal Essential Fish Habitat (EFH) designations for weathervane scallops and associated species. Defining EFH, as mandated by the Sustainable Fisheries Act of 1996, has been challenging, given sparse information on benthic communities and associated habitat. My research

provides a quantitative baseline of benthic community composition on weathervane scallop beds against which future changes can be assessed. Some of the most comprehensive benthic characterizations across the Gulf of Alaska were collected over three decades ago, and few data were collected previously with a specific focus on the weathervane scallop fishery.

As my results lead to even more questions about weathervane scallops and their associated communities, there are numerous opportunities to build from this research. Basic questions on weathervane scallop ecology, including larval

advection and metapopulation dynamics, still need to be addressed. Controlled studies comparing benthic species composition in dredged versus un-dredged areas across Alaska's continental shelf should be expanded in order to elucidate potential dredging effects. Collaboration with weathervane scallop industry members and ADF&G was critical for my research. Vessel captains work closely with ADF&G to improve research efforts through observer sampling, as well as collecting live specimens and ancillary data for special projects. These cooperative efforts should be encouraged and expanded, as they contribute to effective management and the sustainability of the weathervane scallop fishery.

Jessica Glass received her M.S. in Fisheries in August 2014 from the University of Alaska Fairbanks, with funding through the Marine Ecosystem Sustainability in the Arctic and Subarctic (MESAS) program and the National Science Foundation. Ms. Glass is now pursuing a Ph.D. in Ecology and Evolutionary Biology at Yale University, where she will study marine fish phylogeography in the Western Indian Ocean.

2014 Continuing Education Classes Update

Sara Miller and Kari Fenske

The Continuing Education Committee has arranged for a variety of workshops to be provided during October 20–21, 2014 in association with the 41st annual meeting of the Alaska Chapter of the American Fisheries Society (AFS) in Juneau. Although some classes are filling up fast, the minimum enrollment for several classes must still be met by October 10 or those classes will be cancelled! There are still spaces available in the fee-based classes: *Stock Synthesis: Fisheries Stock Assessment Software; A Mesh is a Mesh — Basic Net Construction and Repair Workshop; An Introduction to ArcGIS with Fisheries Applications; and the Technical Writing Workshop*. Unfortunately, the electrofishing workshop by Jim Reynolds had to be cancelled this year.

By partnering this year with the American Water Resources Association and the Southeast Alaska Fish Habitat Partnership, we are also offering some free workshops: *Fish Passage; AK Hydro: A Regional Approach to National Hydrography Stewardship in Alaska; and Unmanned Aircraft Systems and Applications*. If you are already traveling to the meeting (or live in Juneau), why not come a day or two early and learn a marketable new skill for your current job or future job prospects. Don't delay if you are interested in any of these classes. In addition to helping meet the minimum class enrollment, early registration qualifies you for reduced registration fees. Additional information and registration forms can be found at the Continuing Education link at the Alaska Chapter website <http://www.afs-alaska.org/>.

Training Opportunities for Acoustic Tag and Hydroacoustic Assessments

Several short courses in acoustics will be presented through HTI and School of Aquatic and Fishery Sciences at the University of Washington, Seattle, WA. *Using Acoustic Tags to Track Fish*, offered from 9:00 am to 5:00 pm on 5–6 February 2015, will address aspects of tracking fish movement with acoustic tags, including three-dimensional tracking with sub-meter resolution. The course will include hands-on-operation and a variety of applications. *Using Hydroacoustics for Fisheries Assessment* is offered from 9:00 am to 5:00 pm on 12–13 February 2015. The hydroacoustics course covers mobile and fixed-location survey techniques, including basic hydroacoustic theory, deployment logistics, and data collection and processing; split-beam, single-beam, and multi-beam frequency techniques are discussed. These courses are available on-site or online, with tuition discounts up to 50% for university students and staff, non-profit, and tribal organizations. To reserve a seat or ask a question, email HTI at support@HTIconar.com, or go to http://www.HTIconar.com/at_short_course.htm.

Alaska Fish Film Festival

The Southeast Alaska Fish Habitat Partnership (www.seakfhp.org) will be hosting the first annual Alaska Fish Film Festival during the welcoming social being held on Tuesday, October 21, in Juneau at the joint meeting of the Alaska Chapters of the American Fisheries Society and American Water Resources Association. Please join us in viewing interesting short films, videos, and vines showcasing the important roll fish play in Alaska. Film submission details can be found here through a link at <http://www.seakfhp.org>. If you have any questions please contact Mark Kaelke, Trout Unlimited's Southeast Alaska Project Director, at MKaelke@tu.org.



The Southeast Alaska Fish Habitat Partnership (SEAKFHP) formed through local working group efforts initiated in 2010 to bring together local communities, non-profit organizations, state and federal agencies, and residents to conserve fish habitat across Southeast Alaska utilizing coordinated strategies and local partnership actions.

Student Subunit Happenings

Emily Whitney

It is exciting to see the start of the school year bring new and returning students back to campuses. Because many new students and other members have asked about the Alaska AFS student subunit and what we do, here is an overview.

There are currently four student groups located in Fairbanks, Anchorage, and Juneau and representing University of Alaska Anchorage (UAA), University of Alaska Fairbanks (UAF), and Alaska Pacific University (APU). Student groups meet regularly and participate in a variety of activities throughout the year. Activities include:

- AFS Meetings: Students attend Chapter, Western Division, and National AFS meetings including meetings this past year in Mazatlán, Mexico and Quebec City, Canada. Some students will be presenting and serving as volunteers at the upcoming Alaska Chapter meeting in Juneau. Thank you Alaska Chapter members for supporting student travel!
- AFS Student Symposium: The symposium is a student-run event held on the first Friday of each April. The symposium provides students the opportunity to present their research through talks or short videos.
- Research Projects: Undergraduate and graduate students participate in ongoing research. One student group project is looking at blackfish in the Fairbanks area.
- Community involvement: Students conduct outreach events for children at local schools and coordinate events such as beach clean ups.
- Student-led Workshops: Students lead workshops for other students on topics such as using packages in R and tools in GIS.

Beyond these activities, each summer brings new opportunities, such as the following highlights from this past summer.

- Fourteen undergraduate students from APU completed a field study to enhance the quantity and quality of razor clam population information at Ninilchik and Clam Gulch. Study goals were to characterize razor clam habitat, growth, recruitment, and predation by sea otters. The APACHE Alaska Corp provided support for students including funds to purchase an unmanned aerial vehicle used for habitat mapping, and instruments used for baseline water quality samples.



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Undergraduate students from APU gear up for a razor clam habitat assessment in Cook Inlet. Photo by Talyor Duclos.

Student Subunit Happenings, continued



Undergraduate students learn how to measure river discharge on the upper reaches of the Ninilchik River.
Photo by Taylor Duclos.

- Josh Ashline, M.S. student at APU, completed the final season of data collection on coho salmon habitat use and migration in the Big Lake watershed. His research is part of an ongoing project with the United States Fish and Wildlife Service that uses PIT tags and radio telemetry techniques to attribute stream habitat features to relative abundances of juvenile coho.
- Norton Sound's high turbidity makes the use of optical methods challenging, if not ineffective. For Mabel Baldwin-Schaeffer, APU M.S. student, this summer's fieldwork consisted of testing acoustic methods to sample and map seabed complexity using an Unmanned Surface Vessel equipped with a Kongsberg M3 Multibeam Sonar (M3) and a Dual Frequency Identification Sonar (DIDSON) to collect geo-referenced acoustic seabed imagery suitable for mapping benthic structures that are potentially important for juvenile red king crab. Both the M3 and DIDSON allowed the survey crew to use sound to "see" in zero visibility conditions, as nearly 50 miles of transect data were collected over three days.
- Sabrina Larsen, APU M.S. student, completed the initial stages of her thesis work on the triploidization of hatchery Chinook as she collaborates with staff at the ADF&G William-Jack Hernandez Sport Fish Hatchery in Anchorage. The purpose of her research is to optimize the survival and triploidization of Chinook by quantifying shock duration effects and maternal effects.
- Thomas Farrugia, Ph.D. student at UAF, traveled to Durban, South Africa to present his research at the Sharks International conference, an aggregation of chondrichthyan researchers from around the world.

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Student Subunit Happenings, continued

- In Juneau, M.S. student Emily Whitney and student volunteers beach seined in Juneau-area estuaries to collect samples for a study examining community composition and feeding ecology of nearshore fishes.

Finally, throughout the year, student members also participate in AFS leadership. Below is a note from Alaska Chapter student member Jane Sullivan on her new role as Western Division Student Representative.

Dear Alaska AFS Chapter members:

I was recently elected to serve as the Student Representative to the Executive Committee of the AFS Western Division (WDAFS) in 2014–2015. Thank you to the Alaskan students who supported me during the elections. As Student Representative, I will connect with fisheries students across the region, voice students' needs and concerns to WDAFS Excom, organize student events at the WDAFS annual conference, and help make the WDAFS Student Colloquium at Utah State University in spring 2015 a successful and memorable event. This colloquium is an excellent opportunity for Alaskan AFS students to become more involved with Western Division activities. I welcome ideas and feedback from AFS students and professionals throughout my term.

A little bit about myself: I am a fisheries M.S. student at the University of Alaska Fairbanks facility in Juneau. I'm working with Dr. Gordon Kruse on a project funded by the North Pacific Research Board investigating mechanisms influencing the declines in size-at-age of Pacific halibut. We are collaborating with scientists at the International Pacific Halibut Commission and NOAA Alaska Fisheries Science Center to better understand how fisheries policy, environmental variability, and population dynamics of groundfish in the North Pacific Ocean influence spatial and temporal variability in growth and size-at-age of Pacific halibut. I look forward to sharing my research with you at the October 2014 Alaska AFS conference in Juneau!

Finally, I want to tell you some of the amazing opportunities

I had this summer as a University of Alaska Fairbanks student. In July, I volunteered on the NOAA longline sablefish survey aboard the *F/V Alaskan Leader*. During a two-week leg covering from Ketchikan to Yakutat, I tagged and collected size data from sablefish, while learning the duties and culture aboard a commercial fishing vessel. In August, I volunteered in the Aleutian Islands and Alaska Peninsula with a group of seabird researchers from the United States Geological Society. Each day we left the comforts of the *R/V Tiglax* and hiked up to tufted puffin burrows to sample chick condition and diet. I learned to identify important forage fish species, many of which were larvae or juveniles. It was truly a privilege to be a part of these agency projects, and I want to send a big thank you Pat Malecha, Chris Lunsford, and Pete Hulson at NOAA, and Sarah Schoen, John Piatt, and Mayumi Arimitsu at USGS. I really appreciate your patience and willingness to share your passion and expertise with me this summer. I strongly encourage fisheries students to reach out to state and federal agencies in Alaska for potential volunteer opportunities – you never know where these opportunities will take you!

Jane Sullivan, AFS Western Division Student Representative, jysullivan@alaska.edu.



Jane Sullivan, AFS Western Division Student Representative, on the NOAA longline sablefish survey. Photo from Jane Sullivan.

Thomas Farrugia Receives Knauss Fellowship

Thomas Farrugia, AFS Alaska Chapter member and UAF graduate student, will soon be working in Washington, D.C. as a 2015 National Sea Grant Knauss Fellow. The fellowship trains graduate students in marine resource management and marine policy. Farrugia, nominated by Alaska Sea Grant, was one of 50 students selected nationwide. Knauss Fellows receive a year's stipend while working in the federal executive branch or with congressional committees; Farrugia has been selected as a legislative fellow. "Reviewers were impressed with his background and experience with fisheries in Alaska along

with his impressive publication record and participation in the Marine Ecosystem Sustainability in the Arctic and Subarctic (MESAS) program," said Ginny Eckert, Alaska Sea Grant associate director for research.

Being selected as a legislative fellow fits well with Farrugia's plans for his future. "It is going to give me some experience with the public policy aspect of natural resource management in the oceans," said Farrugia. His Ph.D. research is on the development of potential skate fisheries in Alaska. Farrugia is currently working on his dissertation, but will put it on hold during the fellowship. Upon completion of his doctorate, Farrugia would like to work internationally in developing fishery management plans for other countries. Farrugia will begin the fellowship in February 2015. 

Marine Debris Funding Opportunity

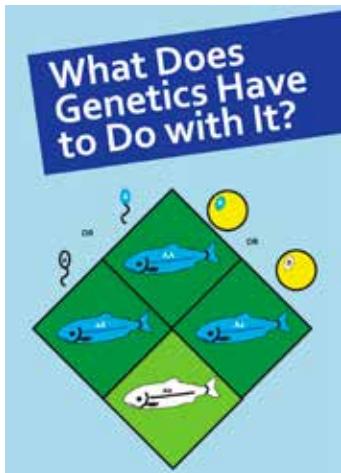
The NOAA Marine Debris Program provides funding to help implement locally-driven, community-based marine debris prevention, assessment, and removal projects that will benefit coastal habitat, waterways, and NOAA trust resources. Projects awarded through this grant will have strong habitat restoration components involving the removal of marine debris, including derelict fishing gear, and also provide benefits to coastal communities, and create long-term ecological habitat improvements for NOAA trust resources. Through this solicitation, NOAA identifies marine debris removal projects, strengthens the development and implementation



AFS Alaska Chapter member Thomas Farrugia was named a Knauss Fellow for 2015 and will be working in Washington, D.C. for 2015. Photo from Thomas Farrugia.

of habitat restoration through community-based marine debris removal, and fosters awareness of the effects of marine debris to further the conservation of living marine resource habitats, as well as contributes to the understanding of debris types and impacts.

Successful proposals through this solicitation will be funded through cooperative agreements. Total funding of up to \$2,000,000 is expected to be available in FY2015, with typical awards ranging from \$50,000 to \$150,000. Proposals must be submitted by November 17, 2014. For more information contact Peter Murphy at peter.murphy@noaa.gov (206-526-4661). 



What Does Genetics Have to Do with It?

Released in 2014 is the third edition of the book *What Does Genetics Have to Do with It?*, edited by Anthony J. Gharrett. The book makes understandable contributions to our knowledge of the biology of fishes, by clarifying the role genetics plays in conservation and management of fisheries. Mechanisms of inheritance, and changes to genetic instructions that occur during evolution, are the basis of all aspects of fish biology. Fish culturists, fish managers, harvesters, and the public will find this introduction to fisheries genetics invaluable. This edition adds new chapters on how oceanography and the distances that fish travel come into play. The publication is available as a free electronic download from the University of Alaska Sea Grant Bookstore at <http://seagrant.uaf.edu/bookstore/pubs/AN-18.html>.

AFS Alaska Chapter Officer Elections

Under the AFS Alaska Chapter Bylaws, Chapter officers consist of a President, President-Elect, Vice-President, Treasurer, and a Secretary, with officers elected from ballots presented in the Chapter newsletter, *Oncorhynchus*. The terms of the Treasurer and Secretary shall be two years, with the Treasurer's election occurring on even numbered years and the Secretary's election occurring on odd numbered years. The term of the Vice-President shall be one year. At the end of the one-year term, the Vice-President shall succeed the President-Elect, who in turn shall succeed the President. This year, 2014, the Chapter is electing a Vice-President and a Treasurer. Candidates' statements are shown below. Ballots must be received by Mark Wifpli no later than October 17, 2014.

Aaron Martin, Vice President

Aaron Martin currently serves as the Supervisory Fisheries Biologist for the Subsistence Fisheries Branch of the U.S. Fish and Wildlife Service - Fairbanks Field Office. In his position he is responsible for coordinating monitoring projects for subsistence fish species and their habitat across the Yukon River Basin. His career path has been one filled with diverse geographic and resource experiences. Aaron started his fisheries career working seasonal jobs with State and Federal agencies across the west and in Alaska. After graduating from the University of Montana, Aaron received his Master's degree from the University of Alaska Fairbanks where he studied the effects of various stream restoration techniques on aquatic communities in the Chugach National Forest. After a short stint working for the U.S. Forest Service in Oregon, Aaron returned to Fairbanks with his wife and chocolate lab to seek out more adventures and unfished waters.

One could say the fruit didn't fall too far from the tree with Aaron. He has been involved in AFS since he was old enough to walk it seems; often attending

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Lee Ann Gardner, Treasurer

Lee Ann Gardner is an environmental consultant with more than 25 years experience in management of multidisciplinary environmental studies, compliance monitoring, and permitting. Ms. Gardner received a Bachelor of Science in Biological Sciences from the University of Alaska in 1978 and a Masters of Science in Fisheries with a minor in Statistics from Oregon State University in 1983. Prior to graduate school, she worked for the U.S. Fish and Wildlife Service, Western Alaska Ecological Services office in Anchorage, conducting permit reviews. She then worked for the National Marine Fisheries Service Laboratory in Kodiak, conducting groundfish assessment surveys in the Bering Sea, and shrimp assessment surveys along the Aleutian Chain and in the Kodiak Archipelago. Her Masters thesis, on stock separation of pink shrimp, evolved from this work experience.

Following graduate school, Ms. Gardner worked as an environmental consultant for ENSR Consulting and Engineering in Anchorage through 1995. During that time she managed a number of multidisciplinary environmental studies for

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AFS Alaska Chapter Officer Elections, continued



Western AFS and Idaho Chapter AFS meetings with his parents (both actively involved members for years). The people, places, and resources that Aaron learned about at these meetings and while growing up in rural Idaho left

a deep appreciation for free flowing rivers, intact ecosystems, and the old and new cultures that have evolved around the world's fishes. Aaron has been directly involved in AFS as a member since 2000 and served as Secretary, Vice President, and President of the UAF subunit while in graduate school. Aaron has been a session chair and has presented at past AK-AFS meetings. He takes great honor and pride in working with the diverse users of Alaska's fisheries resources as well as mentoring (e.g., AFS Hutton Program Mentor) others that share a passion for fisheries biology. Aaron hopes that being an active participant in the Alaska Chapter's Executive Committee will allow him to help AFS reach out to a broader audience to strengthen our role and voice throughout state.

When Aaron isn't at work, he is usually bounding down a trail in a pair of running shoes, hiking up a mountain, tempting fish with various hooks, and sharing the outdoors with his family; usually, all in any given weekend! ☺

government and industrial clients at a variety of locations in Alaska. Since 1996, Ms. Gardner has had her own consulting business in Chugiak, and continues to work for government and industrial clients. Her work projects are on the North Slope, and in western and southcentral Alaska. Being self-employed has also enabled her to devote more time to volunteer activities in professional and community organizations.

Ms. Gardner first joined the American Fisheries Society (AFS) while in graduate school in 1981. She began with intermittent attendance at Alaska Chapter annual meetings, progressing to serve as a member of the local organizing committee for both the 1998 Alaska Chapter meeting, and the 2005 Parent



Society meeting. She has served previously as Chapter Secretary, and is currently Treasurer. If re-elected, Ms. Gardner hopes to continue streamlining the Chapter's financial accounts and working with the Molly Ahlgren Scholarship Committee and the Alaska Chapter Finance Committee.

Besides membership in the AFS, Ms. Gardner is also a member of the National Association of Environmental Professionals, the Phi Kappa Phi honorary society, and is a NAUI Certified SCUBA Diver. She is a current board member of the Alaska Association of Environmental Professionals and serves as its Scholarship Chairperson. A life-long Alaskan, Ms. Gardner was born in Palmer and raised in Anchorage; she has lived in Chugiak since 1983 with her husband, and has two children now in college. ☺

ONCORHYNCHUS

Oncorhynchus is the quarterly newsletter of the Alaska Chapter of the American Fisheries Society. Material in this newsletter may be reprinted from other AFS websites.

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Officer Ballot

For Chapter Vice President and Treasurer

Please cut and paste ballot into an email with subject "Vote" by **October 17, 2014** and send it to:
Mark Wipfli at mwipfli@alaska.edu or mail via the U.S. Post Office to:

Mark S. Wipfli
USGS Alaska Cooperative Fish and Wildlife Research Unit,
209 Irving I Bldg, Institute of Arctic Biology
University of Alaska Fairbanks
Fairbanks, AK 9977

Vice President:

Aaron Martin

Write-in _____

Secretary:

Lee Ann Gardner

Write-in _____

Meetings and Events

41st Annual Meeting of the American Fisheries Society Alaska Chapter

October 20–24, 2014: This meeting will be held in Juneau, AK with the theme "Bridging Disciplines to Solve Today's Challenges in Resource Management." The meeting chair and program contact is Jennifer Stahl (jennifer.stahl@alaska.gov).



Effects of Climate Change on the World's Oceans

March 23–27, 2015: This meeting, cosponsored by ICES, PICES, and IOC-UNESCO, will be held in São Paulo, Brazil. For more information, go to www.pices.int.



145th Annual Meeting of the American Fisheries Society Symposium

August 16–20, 2015: This meeting will be held in Portland, Oregon. For more information, see <http://fisheries.org/afs-2015>.



2014 Alaska Chapter Officers

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Feel free to contact the Executive Committee members.