ONCORHYNCHUS

Newsletter of the Alaska Chapter, American Fisheries Society

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In this issue:

Subsistence salmon hanging in Fort Yukon. Photo by Jeff Estensen.

Predicting Subsistence Demand in the AYK Salmon Fisheries: People, Dogs, and Fish

Robert J. Wolfe

Alaska has a long history of subsistence fisheries. Providing for subsistence is the highest consumptive use priority for Alaska's salmon managers. But what is the future for subsistence fisheries? A scientific panel, funded by the Arctic-Yukon-Kuskokwim (AYK) Sustainable Salmon Initiative, developed a model of potential subsistence and commercial harvests of salmon to the year 2050 in the Yukon, Kuskokwim, and Norton Sound drainages. This article summarizes model components addressing subsistence demand, defined as salmon harvests for subsistence uses in years with sufficient salmon returns. The model predicts total demand for wild foods in villages and then calculates what proportion of the wild food harvest may be varieties of salmon.

Subsistence Demand for Food

Subsistence salmon production occurs within local mixed subsistence-cash economies. In mixed economies, families invest labor and income in traditional fishing and hunting to produce wild foods for consumption. The relative mix of wild and store-bought foods is sensitive to several factors. Increased incomes within communities are generally associated with shifts toward store-bought foods. Geography is a factor, with more wild food use in communities off the main road systems. Wild food harvests also are sensitive to cultural factors, such as customary dietary preferences and community cultural composition.

To develop a model of future subsistence demand, data on income, culture, geography, and wild food production at the village level were analyzed for 149 Alaskan communities in rural Southeast Alaska, rural Gulf of Alaska-Bristol Bay, rural road-connected Interior Alaska, and urban/urban-rural fringe

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The President's Corner

Trent Sutton, AFS Alaska Chapter President.

Trent Sutton

Summer is here, days are long, and, for all of us, it is a busy time of year. And, yes, summer is synonymous with house and yard projects, which in turn invariably involves sun burns, mosquito swatting, and trying to keep moose out of the garden. But summer also means field work, which yields data, which provides us with new information for presenting at meetings. Speaking of which (nice segue ☺), our annual chapter meeting in Kodiak will be less than four months away by the time you read this newsletter. I know that President-Elect Mark Wipfli and his Program and Arrangements Committees are busily organizing what is shaping up to be a full slate of continuing education courses and oral presentation and poster sessions. For more details, look for the First Call for Papers, as well as other related meeting information, in this newsletter.

As many of you may have heard by now, we were not successful with our bid to host the 7th World Fisheries Congress (to be held

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Predicting Subsistence Demand,
continued

areas. These communities represent a range of socioeconomic, cultural, and geographic conditions that affect wages, stores, wild food harvests, and other factors. A regression model identified four community-level variables significantly related to wild food harvests (annual lbs/capita): income (mean/capita); cultural composition (percentage Alaska Native); and binary variables reflecting road-connectedness and urban location (in an urban/urban-rural fringe). The relationship of Harvest = 329 – 5.276 x Income + 1.067 x Cultural Composition, reduced by 114 lbs if road-connected and 188 lbs for urban/urban-rural fringe, explained 81% of harvest variation among communities (R^2 = 0.81; P<0.001 for each variable). Applying this regression to the 2000 U.S. Census data, estimated per capita demand for wild foods, including salmon, for human consumption ranged from 351 lbs to 391 lbs in rural AYK villages and was 22 lbs in urban Fairbanks.

To calculate salmon-only demand, total wild food demand was multiplied by the salmon percentage in wild food harvests. Local salmon comprise an estimated 41–46% of wild food harvest weights in selected Yukon and Kuskokwim areas, 22%–33% in Norton Sound areas, and 3% at Fairbanks (most Fairbanks residents harvest salmon from the Copper River and Kenai Peninsula rivers). The predictive model assumed little change in future salmon percentage of wild food harvests (though this model variable can be altered to assess affects).

Total demand of subsistence salmon for human consumption was extrapolated as the product of per capita demand and area population, as projected by Alaska Department of Labor (ADL) fertility and migration estimates (bracketed as low, middle, or high growth to represent uncertainty). Net projections in 5-year increments through 2050 indicate that rural populations taking salmon in the AYK region will increase 24% under low growth, increase 54% under middle growth, and increase 88% under high growth. An exception is the middle-upper Yukon River, where villages taking salmon are projected to decline 32% (middle case). Urban populations are also expected to increase, with Fairbanks increasing 54% (middle case). Overall,

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The President's Corner, continued

in 2016) in Anchorage. Instead, the winning bid went to Korea. I wanted to personally thank our two Chapter members that served as co-chairs of the steering committee, Karen Gillis and Malcolm McEwen, and Visit Anchorage representative Helen Thomas for all their hard work in developing and presenting the bid.

I mentioned in the last newsletter that the Bristol Bay resolution from the Western Division of AFS (WD-AFS) had been submitted to the AFS Resolutions Committee Chair. To date, a vote still has not been taken regarding the resolution, but I anticipate that the vote will have occurred by the time this newsletter gets distributed to the membership. I would also like to mention that WD-AFS has formed a review team to evaluate and comment on the recent U.S. Environmental Protection Agency report on the impacts of mining on Bristol Bay. I would like to thank Vice President Phil Loring for agreeing to serve on the review team to represent our Chapter's interest. I will provide an update on the resolution and review team's comments in our fall newsletter.

I mentioned in my first President's Corner in January that one of my goals this year was to clean up and formalize some of our chapter policies, particularly as they related to our annual chapter meeting. Over the past several months, I have worked with our Chapter Executive Committee to identify and develop the following four policies: Student Meeting Travel/Volunteer; Executive Committee Meeting Travel; Retired Member Meeting Registration; and Vendor Meeting Registration. I have provided these policy statements in this newsletter for your information.

That is all for now until the fall newsletter. In the meantime, enjoy our wonderful, albeit brief, summer.

Predicting Subsistence Demand, continued

more human consumers of subsistence salmon are expected in most of the AYK region. Demand by salmon variety in an area was calculated by multiplying total extrapolated salmon demand by catch composition. Finally, each salmon variety was divided by mean fish weight to determine numbers of fish.

Subsistence Demand for Dog Food

Dogs also consume subsistence-caught salmon in the AYK region. Before the shift to snomachines, virtually every AYK rural household relied on small teams of sled dogs, commonly fed with chum salmon and other fish. Dog numbers fell during

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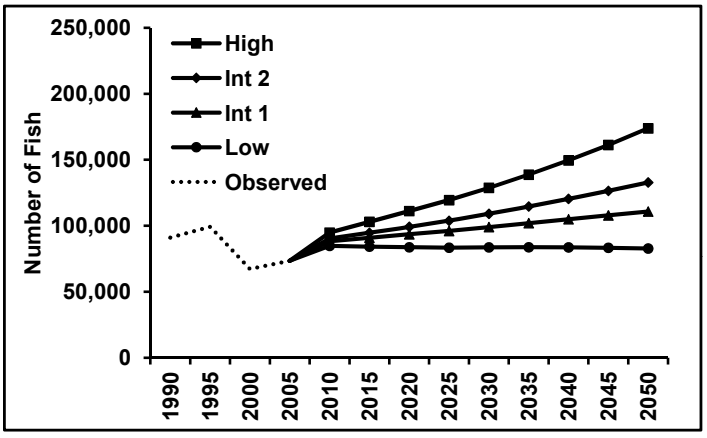
Community Type/Area	Per Capita Income	Alaska Native	Wild Food Demand (lb/capita)	Salmon Contribution
Lower Yukon River	$9,163	94.8%	381.8	40.70%
Upper Yukon River	$11,812	78.6%	350.6	46.10%
Lower Kuskokwim	$7,877	96.7%	390.6	46.03%
Middle-Upper Kuskokwim	$10,164	80.2%	360.9	44.81%
South Kuskokwim Bay	$7,537	94.7%	390.3	44.57%
Bering Sea Coast	$8,990	94.0%	380.3	5.21%
South Norton Sound	$11,553	92.1%	366.3	33.33%
North Norton Sound	$10,142	91.8%	373.4	21.51%
Regional Centers				
Bethel	$20,267	68.0%	176.8	76.61%
Nome	$23,402	58.0%	107.0	13.89%
Urban				
Fairbanks	$23,381	9.6%	21.6	3.02%

Predicted wild food demand for human consumption by community type/area in the AYK region, 2000.

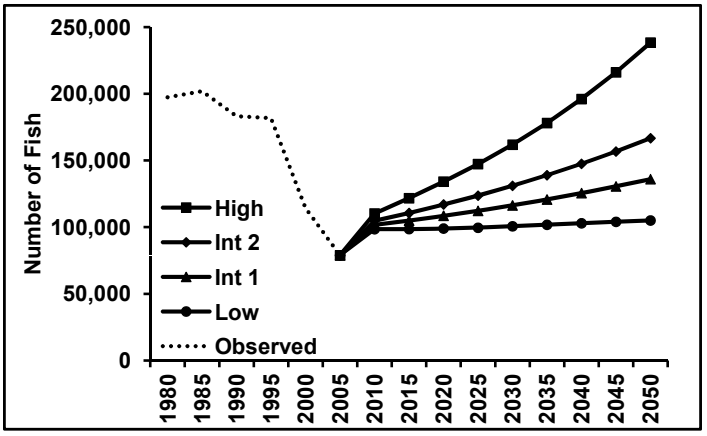
Predicting Subsistence Demand, continued

the 1960s, rebounded with the 1970s resurgence in dog racing, peaked in the early 1990s, and declined recently due to economic stresses (including high dog food costs) and reduced interest in dog racing.

Currently, many households keep *pet or scrap dogs* to serve as watchdogs for bears and as consumers of family table scraps (a culturally respectful way to dispose of fish waste). These dogs are primarily fed a combination of scraps and commercial dog food, though small numbers of whole salmon may be used as a dietary supplement by some owners. *Sled dogs in small lots* (<25 dogs) represent a category encompassing most AYK dog teams. Small yards or kennels of sled dogs are maintained for winter transportation, trapping, and racing during village carnivals. The kennels commonly consist of a core team of 7–10 dogs, with some younger and older dogs held as spares or in development for core team placement. Owners of small lot dogs tend to be highly reliant on fish for feeding dogs. On the middle-upper Yukon River, small lot dogs have been major consumers of chum and coho salmon. *Sled dogs in large lots* (25–80 dogs) occur in some areas, primarily in the upper Yukon River and urban fringe areas. Large kennels tend to be associated with competitive dog racing. To field a competitive team of 10–14 dogs, elite racers maintain large kennels with dogs selected for specific race distances, trails, and weather conditions. Large lot dogs tend to be less reliant on fish for food than smaller lots due to the nutritional demands of competitive racing and the task of fishing to feed large numbers of dogs.



Kuskokwim Chinook observed subsistence harvests for 1990-2005, and projected total subsistence demand for 2010-2050, under Low, Intermediate 1, Intermediate 2, and High demand scenarios.



Yukon summer chum observed subsistence harvests for 1990-2005, and projected total subsistence demand for 2010-2050, under Low, Intermediate 1, Intermediate 2, and High demand scenarios.

In the subsistence demand model, dog numbers were estimated by the three categories (small yards, large yards, and scrap/pet). Residents of the AYK region owned an estimated 12,300 dogs in 2005, with 75% in the scrap/pet category. A working sled dog almost exclusively fed salmon may annually consume about 200 small salmon (chum, coho, or sockeye), although most sled dogs are fed considerably less. Mean consumption ranged from 10.4 salmon/dog (5% of annual diet) in North Norton Sound to 60.0 salmon/dog (30% of annual diet) in the Upper Yukon. Scrap/pet dogs consumed considerably less whole salmon with an assumed 0.5 salmon/dog, except for 3.0 salmon/dog on the Yukon River. The model estimated future salmon demand for dog food as the product of dog abundance and salmon consumption/dog.

Subsistence Demand Scenarios

Altogether, prediction of future subsistence salmon demand involved ten factors, six for human food and four for dog food. Owing to uncertainty regarding future trends in human populations, dog numbers, incomes, available salmon, and other factors, demand was conditioned on a range of assumptions about the future. Four scenarios *(Low, Intermediate One, Intermediate Two, and High)* were examined to assess potential future subsistence demands. Intermediate scenarios one and two respectively assumed: the middle

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Predicting Subsistence Demand, continued

projection in human populations; modest income gains in villages (3% and 5% per five-yr period); little change in cultural composition (1% decrease and no change in percent Alaska Natives); 2% decrease and 2% increase in sled dog populations; 1% increase or no change in salmon proportion of wild foods; and no salmon species composition change. By contrast, the low scenario assumed the low projection in human populations, income increases of 8% in villages and 6% in Bethel, Nome, and Fairbanks; 1% decreases in percentage Alaska Natives; 2% decreases in sled dogs; 1% decreases of salmon in dog diets; and no change in salmon proportion of wild foods or salmon composition. Finally, the high scenario assumed the high projection in human populations, no changes in income or percentage Alaska Natives; 10% increases in sled dogs; 2% increases in salmon contribution to dog diets; 1% increases in salmon contribution to wild foods; and no salmon composition change.

Fish wheel near Nenana on the Tanana River, Yukon Area. Photo by Jeff Estensen.

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ANS Stock		Amount Necessary for Subsistence	Predicted Subsistence Demand by Secenario			
Area	Variety		Low	Intermediate 1	Intermediate 2	High
Norton Sound Subdistrict 1	Chum	3,430-5,716	2,608	3,635	4,864	7,040
Norton Sound-Port Clarence	Salmon	96,000-160,000	101,674	139,470	167,473	220,338
Yukon-Northern Area	Chinook	45,500-66,704	49,965	68,231	81,232	104,981
	Summer Chum	83,500-142,192	105,024	137,213	166,678	238,338
	Fall Chum	89,500-167,100	50,595	61,704	82,305	151,029
	Coho	20,500-51,980	11,539	14,697	18,856	30,822
Kuskokwim River Drainage	Chinook	64,500-83,000	76,649	102,660	123,414	161,950
	Chum	39,500-75,500	68,760	89,377	109,619	155,515
	Sockeye	27,500-39,500	39,614	49,919	59,893	78,446
	Coho	24,500-35,000	37,913	49,951	61,697	86,393
Kuskokwim Area	Salmon	7,500-13,500	25,037	32,987	38,389	48,595

Estimated subsistence demand in the year 2050 by scenario compared to the Amount Necessary for Subsistence (ANS) as determined by the Alaska Board of Fisheries for stocks in the AYK region.

Predicting Subsistence Demand, continued

"Predicting the Future:" Subsistence Demand to 2050

The model's predicted subsistence demand for salmon to 2050 in the Kuskokwim, Yukon, and Norton Sound areas varied with assumed future conditions of human populations, dog populations, household incomes, community cultural composition, and other factors. Examples here include prediction summaries for Chinook in the Kuskokwim area and summer chum in the Yukon area. Details for other salmon varieties and areas are presented in the panel's final report (Wolfe, R.J., G. Knapp, W.R. Bechtol, D. Andersen, and C. Scott. 2011. Salmon harvests to the year 2050: a predictive model for the Yukon, Kuskokwim, and Norton Sound drainages in Alaska. Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, Project Final Product, June 2011).

In the Kuskokwim area, demand for salmon remains the same or declines slightly under low scenario assumptions, but increases for all salmon species under other scenarios, especially on the lower river where more people reside. Demand increases primarily for human food, except on the middle-upper Kuskokwim River where ~20% of the harvest may be used for dog food. In the Yukon area, salmon demand remains the same or declines slightly under low scenario assumptions. For most other scenarios, salmon demand increases, due primarily to food needs along the lower Yukon River from increasing human populations. However, salmon demand for human food along the middle-upper Yukon River declines under all scenarios due to falling human populations. Demand for summer chum, fall chum, and coho along the middle-upper Yukon River increases under the high scenario as dog populations increase, but in other scenarios dog food demand changes slightly along the middle-upper Yukon River. Along the lower Yukon River, demand for dog food remains relatively low under all scenarios. Overall, salmon demand remains stable along Norton Sound under the low scenario, but increases under other scenarios. Salmon demand for dog food remains a small component of harvests along Norton Sound.

Predictions of subsistence demand in 2050 under the four scenarios were compared with the amounts necessary for subsistence (ANS) set by the Alaska Board of Fisheries for 11 salmon stocks defined in state regulations. Under the low scenario, predicted demand falls within the ANS ranges for 6 stocks, falls below for 3 stocks, and exceeds ANS for 2 stocks. In the high scenario, predicted demand exceeds ANS for 9 stocks and falls within ANS for 2 stocks. For the two intermediate scenarios, predicted demand in the Kuskokwim area exceeds ANS for all stocks, and falls within ANS for the Norton Sound and Yukon areas for most stocks, with the exception of Chinook in the Yukon area where predicted demand exceeds ANS. Overall, under different plausible future scenarios, subsistence demand for salmon is stable or increases in the AYK region. Changes in subsistence demand over time may lead to requests by salmon users for revisions of ANS determinations by the Alaska Board of Fisheries.

Robert J. Wolfe is a cultural anthropologist who currently is research director of Robert J. Wolfe and Associates in San Marcos, CA. He previously served as research director in the Alaska Department of Fish and Game, Division of Subsistence.

Continuing Education

Tammy Hoem Neher

A broad selection of continuing education workshops is being developed for the AFS Alaska Chapter meeting at Kodiak in October 2012. Several of these are scheduled as two-day workshops and will start at 9 A.M. on Sunday, October 21. The current slate of available workshops includes: Introduction to Scientific Study Design and Writing; Aircraft Safety and Crash Survival in Alaska; Mark-Recapture Study Design and Analytical Techniques; Communicating Science to Non-Scientists; Hands on Hydroacoustic Sampling for Salmon Smolt; Beginning GIS; and Hands-on (field applied) DIDSON Sonar. Detailed descriptions of the workshops will be available in July on the Alaska Chapter website (*http://www.afs-alaska.org/*). For additional information, or to provide suggestions, contact Tammy Hoem Neher (*tdhoem@alaska.edu*, c: 299-6389).

Alaska Chapter Policy Statements

The following policy statements were developed by the AFS Alaska Chapter President Trent Sutton in cooperation with the Chapter Executive Committee. Please contact Trent (*tmsutton@alaska.edu*) if you have any comments on these policies.

Student Meeting Travel/Volunteer Policy

The student representative will work with the President-Elect and Treasurer to organize and coordinate student volunteers at the annual Alaska Chapter meeting. Together, they will determine how many students are needed to volunteer at the annual meeting (setting up and taking down, running audio-visual equipment, etc.), and how many students can be accommodated given the meeting budget for that particular year. On average, students will be expected to contribute eight hours of time (or a pre-determined equivalent) helping out at the meeting as compensation for a travel subsidy. The student representative will also explore the feasibility of cheaper lodging options at nearby locations (e.g., hostels, agency bunkhouses, university dormitories). The student representative will work with a representative of each of the student groups to identify the most cost- and time-effective travel arrangements that comply with UA travel and insurance guidelines to allow for the safe delivery of students to the annual meeting venue.

Priority rankings for Alaska Chapter of AFS meeting attendance – Because there will be a limit to the number of students for which the Alaska Chapter of the American Fisheries Society can subsidize travel and lodging to attend and volunteer at the annual meeting, the following priority rankings and criteria will be followed in determining whether students are eligible to be considered for a travel subsidy.

A. Undergraduate and graduate students giving a presentation (paper or poster):
   1. Must be a member of the American Fisheries Society, including the Alaska Chapter.
   2. Students involved in significant meeting planning or serving as a session moderator, symposium organizer, etc., will have higher priority than students not involved in these activities.
   3. Must be an active participant of a UA student subunit of AFS (e.g., officer, committee chair, active member, etc.).

B. Undergraduate and first-year graduate students not giving a presentation:
   1. Must be a member of the American Fisheries Society, including the Alaska Chapter.
   2. Must be an active participant of a UA student subunit of AFS (e.g., officer, committee chair, active member, etc.).
   3. Students involved in significant meeting planning or serving as a session moderator, symposium organizer, etc., will have higher priority than students not involved in these activities.
   4. Upperclass undergraduate students (e.g., juniors and seniors) will have priority over underclass undergraduate students (e.g., freshmen and sophomores).

C. Second-year+ graduate students not giving a presentation:
   1. Must be a member of the American Fisheries Society, including the Alaska Chapter.
   2. Must be an active participant of a UA student subunit of AFS (e.g., officer, committee chair, etc.).
   3. Students involved in significant meeting planning or serving as a session moderator, symposium organizer, etc., will have higher priority than students not involved in these activities.

Executive Committee Meeting Travel Policy

Because the functioning of the Alaska Chapter of the American Fisheries Society, in particular the annual meeting, is heavily dependent on the involvement of the Executive Committee (President, President-Elect, Vice President, Past President, Treasurer, Secretary, and Student Representative), every attempt should be made for Executive Committee members to attend and participate in the annual meeting. As a result, if Executive Committee members do not have grant funding or funding from their employer for travel to the annual chapter meeting, the Chapter will cover their travel costs for attending the meeting. These travel costs should include airfare and/or ground transportation, lodging, and a waiver of registration fees. Any personal costs (e.g., continuing education course registration, side trips at meeting locations, etc.) will not be covered by the Chapter.

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Alaska Policy Statements, continued

Note that the Chapter will cover the aforementioned travel costs, including the registration fees, for the President during his/her term of office to attend either the annual meeting of the American Fisheries Society (Parent Society) or the Western Division of the American Fisheries Society in order to represent the Alaska Chapter.

Retired Member Meeting Registration Policy

Retired members of the Alaska Chapter of the American Fisheries Society often do not have the income or support of an employer to attend the annual chapter meeting. As a result, all retired members in good standing that demonstrate a need and make the request for a waiver will have their registration fee waived for attending the annual meeting. However, the Chapter will not be responsible for covering any other meeting-associated costs for retired members.

Vendor Meeting Registration Policy

The attendance of vendors at the annual meeting of the Alaska Chapter of the American Fisheries Society provides value-added opportunities for the members of the Chapter. As a result, the attendance of vendors at the annual meeting should always be encouraged. Because most meeting venues require a fee for room/space rental and the rental of tables, chairs, electrical cords, power strips, etc., it is necessary that the vendors cover this cost. However, those costs vary among meeting venues. As a result, for a vendor to be able to participate in the annual meeting, where participation would include setting up a display (either stand along or on a provided table) for one or more days, the vendor is required to pay the full meeting registration fee as designated for the annual meeting that particular year.

Fisheries Ph.D. Graduates

At the University of Alaska Commencement in Juneau in early May, Ph.D. degrees were awarded to five students who received Alaska Sea Grant support: Ben Daly, advised by Ginny Eckert; Kray Van Kirk and Peter-John Hulson, mentored by Terry Quinn; Jason Gasper, with Gordon Kruse as advisor; and Dion Oxman, advised by Tony Gharrett. Ashwin Sreenivasan and Cynthia Tribuzio rounded out the record number of seven fisheries Ph.D.s awarded at the Juneau ceremony.

Daly and Van Kirk defended their theses in the past month. Daly's dissertation title is "Red King Crab Hatchery Culture and Ecological Requirements: Improving Stock Enhancement Feasibility." His lab and field research on red king crab diet, culture density, size sorting, and predation demonstrated that: (1) hatchery production can be improved with specific advances in rearing technology; (2) hatchery-cultured red king crabs are morphologically and behaviorally changeable; (3) hatchery-cultured crabs tethered in the field show no obvious behavioral deficiencies that may make them more susceptible to predation; and (4) differences in predation susceptibility during the first juvenile instar stages are subtle and may be ecologically inconsequential for post-release survival. As bottlenecks in hatchery production and survival of released juveniles continue to be overcome, stock enhancement will become increasingly feasible for red king crabs in Alaska. Red king crab is depleted throughout much of the North Pacific, making it a good candidate for stock enhancement.

"Assessment Modeling as a Tool of Fisheries Management in the Gulf of Alaska" is the title of Kray Van Kirk's Ph.D. thesis. Van Kirk developed a multispecies age-structured assessment model for the Gulf of Alaska. He modeled age-specific predation mortality as a flexible function of predator and prey abundances that were fitted to stomach-content data. Modeled species include arrowtooth flounder, Pacific cod, walleye pollock, Pacific halibut, and Steller sea lions. Management strategy simulations demonstrate that multispecies harvest control rules and biological reference points are more conservative and more efficient at preserving stock abundance, while maintaining catch levels, than their single-species counterparts.

First Call for Papers, 2012 Annual Meeting of the AFS Alaska Chapter

"Ecosystem, Fishery, and Food Sustainability in a Changing World"

Mark Wipfli

The 2012 Alaska Chapter Meeting of the American Fisheries Society will be held in Kodiak, Alaska, at the Kodiak Convention Center during October 21–26, 2012. Continuing education workshops and organized tours will be held on the first three days of the meeting (October 21–23; see the article in this newsletter by Tammy Hoem Neher for more details) and a welcome social will be held Tuesday evening, October 23. The keynote address and plenary session will be Wednesday morning, addressing the theme of the meeting, *"Ecosystem, Fishery, and Food Sustainability in a Changing World."* The plenary session will be followed by concurrent oral sessions beginning Wednesday morning, with the poster session and social that evening. Thursday and Friday, October 25–26, will be dedicated to concurrent special and contributed sessions throughout the days, with the banquet Thursday evening along with entertainment and an auction. The meeting will end Friday afternoon.

The meeting theme is exemplified through the broad array of sessions, including contributed oral sessions and a poster session, and a long list of pre- and post-meeting activities and tours. The special sessions (listed below) are open for presentation submissions; please contact the session chair(s) listed in the session descriptions below for additional information. The deadline for abstract submission is September 5 *(note – there will be no abstract deadline extension this year).* Instructions on abstract submission are forthcoming. Each submitted abstract should include: presentation title (in title case – e.g., Arctic Grayling Movement Patterns on the Arctic Coastal Plain); list of authors, their affiliations and addresses; email and phone number of presenting author; and abstract (single paragraph up to 250 words). State whether you prefer an oral or poster presentation, and which special session you request. In order to ensure speakers are included in the session of their choice, contact your session chair(s) in advance, sending a copy of your abstract (this is in addition to your online submission). Students (undergraduate and graduate) are encouraged to present a talk or poster at the meeting, as both the Best Student Poster and Best Student Oral Presentation winners will receive monetary and plaque awards.

Be sure to come early this year, to take advantage of reduced-rate fishing charters and tours, lodging deals, and loads of local pre-meeting outdoor and community activities being planned. Besides charter fishing, there are wildlife viewing and sightseeing tours, a windmill farm, the local brewery, seafood processors, boat harbors, hiking, kayaking, and hunting. We encourage arriving early in case of weather delays, to avoid missing meetings and events. Both ERA and Alaska Airlines have agreed to provide discounted airfares for meeting goers. The Shelikof Lodge (907-486-4141; *www.shelikoflodgealaska.com*) and Kodiak Best Western Inn (907-486-5712; *www.kodiakinn.com*), both within a short walk of the Conference Center, have set aside blocks of rooms at discounted rates for the meeting. Several B&Bs offering reduced rates for the conference will also be posted on the website. Phone ahead to reserve your room, and be sure to identify yourself as an AFS conference attendee to get the good rate. Check the AFS Alaska Chapter website for conference updates through the summer.

Marine Ecosystem Dynamics and Sustainable Fisheries

Session Co-Chairs: Gordon Kruse (*gordon.kruse@alaska.edu*) and Vanessa von Biela (*vvonbiela@usgs.gov*)

Alaska marine ecosystems are dynamic systems subject to climate forcing and human impacts, such as fishing. Moreover, range extensions of top predators (e.g., sea otters in Southeast Alaska) can restructure benthic community composition and threaten the future sustainability of valuable commercial fisheries. Such marine ecosystem dynamics pose challenges for sustainable fisheries, especially for coastal communities. The purpose of this session is to deepen our understanding of Alaska marine ecosystem dynamics and to examine ways in which sustainable commercial, subsistence, and recreational fisheries can be maintained in an ever-changing marine environment.

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First Call for Papers, continued

Recent Advances in Marine Biology

Session Chair: Dan Urban (*dan.urban@noaa.gov*)

Marine researchers in Alaska work on a broad variety of topics including ocean acidification, basic life history, and stock surveys. Given the diversity of the research being conducted, it is often difficult to stay current on the important advances that are being made. This session would bring together marine researchers in a general session allowing for the interchange of ideas and results.

Crab Fisheries, Biology, and Ecology

Session Chair: Robert Foy (*robert.foy@noaa.gov*)

The biomass of crab stocks in Alaska fluctuated dramatically prior to and during the current management regime. Due to complex life histories and sensitivities to environmental variability, crab stocks have proven difficult to manage under typical fisheries management methods. Recent stock assessment, oceanographic, and life history research has furthered our understanding of crab species in Alaska. The goal of this session is to examine our current understanding of crab fisheries management in light of new data on crab biology and ecology.

Arctic Marine Fish and Shellfish Resources in a Changing Climate

Session Co-Chairs: Franz Mueter (*fmueter@alaska.edu*) and Jen Marsh (*jmmarsh@alaska.edu*)

The Arctic Ocean, including waters of the northern Bering Sea, Chukchi Sea, and Beaufort Sea, are undergoing rapid environmental changes, most notably in the extent and duration of sea ice cover. The consequences of these changes on marine fish and shellfish resources are complicated and difficult to predict. Changes in the abundance and spatial distribution of some fishes have been documented, but whether subarctic species will expand into the Arctic and how Arctic species will respond to an extended ice-free season is highly uncertain. This session seeks to advance our understanding of present and future responses of Arctic marine species to climate change. We encourage contributions on the biology and ecology of Arctic marine fish and shellfish, distributional shifts into Arctic waters, the capacity of local species to adapt to changing conditions, the fisheries potential of the Arctic Ocean, and approaches to managing marine fisheries resources in the Arctic.

Alaska Seafood Processing, Quality, and Marketing: Challenges and Advances

Session Co-Chairs: Alexandra Oliveira (*acoliveira@alaska.edu*) and Ray RaLonde (*ray.ralonde@alaska.edu*)

The fishing/seafood sector in Alaska generates about $1.3 billion per year in landed value and about $3.3 billion per year in first-wholesale value. Given the importance of seafood harvesting and processing to Alaska's economy, this session explores current challenges and advances in the sector. We invite contributions on all aspects of Alaska seafood processing, safety, quality, and marketing. We encourage contributors to consider emerging issues and new technologies that may impact the Alaskan harvesting and processing sectors in their operations.

Marketing Sustainability of Alaskan Salmon Fisheries

Session Chair: Hal Geiger (*geiger@alaska.com*)

The Alaskan salmon fishery was the first U.S. fishery certified as sustainable by the Marine Stewardship Council in 2000. However, Alaska pulled out of the Marine Stewardship process in 2012, a fact widely reported both inside and outside of Alaska. In the meantime, other organizations have emerged to influence markets by offering review or comment on fishery sustainability, or even alternative certifications. Other organizations have offered ratings of sustainability for fish buyers. How will fishery markets evaluate certification, or the lack of it, and how does certification, in turn, influence management responsibility? What are the real underlying issues leading to the recent decisions to abandon the Marine Stewardship process in Alaska, and how will these decisions ultimately affect markets for Alaskan salmon? In this session we will try to answer some of these questions and to review how these issues will affect marketing and management in the future.

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ONCORHYNCHUS

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

First Call for Papers, continued

Fish, Food Security, and Health: Supporting Local Communities through Supporting Local Fisheries

Session Co-Chairs: Andrea Bersamin (*abersamin@alaska.edu*) and Phil Loring (*ploring@alaska.edu*)

Any discussion of health and food security in Alaska is incomplete without at least some attention to the current and potential role of fisheries. For thousands of years, coastal and living marine resources have provided a keystone for the cultural, economic, and environmental health and wellbeing of Alaska's people and communities. This session provides a framework for understanding the role Alaskan fisheries play in the health and food security of Alaskans. We encourage submissions from a broad range of stakeholders including researchers, community members, and industry.

Ensuring Subsistence Fisheries through Partnerships

Session Chair: Aaron Martin (*aaron_e_martin@fws.gov*)

Indigenous and rural people of Alaska have utilized various freshwater and marine fish species for subsistence purposes for thousands of years. This traditional use provides families with valuable sustenance and cultural connections to our natural resources, and trade among regions due to local resource availability. State and federal regulations prioritize subsistence fishing over other consumptive uses (commercial, personal use, sport). However, these uses and management efforts often overlap and needs are better met when partnerships are established and the public is involved in the management process. This session highlights subsistence research projects and management efforts that have integrated collaborative efforts among interest groups to secure our state's subsistence resources and opportunities. Ideally, presenters would incorporate a food security theme into their presentations by discussing how their projects help maintain/restore subsistence resources for future use given current/future political and environmental changes.

Challenges and Opportunities in a Transdisciplinary World: Working at the Intersection of Social and Natural Sciences in Fisheries

Session Co-Chairs: Anne Beaudreau (*abeaudreau@alaska.edu*), Courtney Carothers (*clcarothers@alaska.edu*), Phil Loring (*ploring@alaska.edu*)

There has been an increasing movement in fisheries science towards approaches that transcend disciplinary boundaries to address issues in coupled social-ecological systems. While interdisciplinary research allows for broader perspectives on difficult environmental problems, it is also challenged by differences in terminology, methodology, theories of knowledge and knowing, and research paradigms among contributing disciplines. This session highlights fisheries research at the interface of social and ecological sciences and provides individual perspectives on the opportunities and challenges of interdisciplinary collaborative processes. Talks by social and natural scientists will be followed by a facilitated discussion.

Hatchery Programs in Alaska: Reviewing the Old, Evaluating the New

Session Co-Chairs: Steve Heinl (*steve.heinl@alaska.gov*), Ben Daly (*benjamin.j.daly@gmail.com*), Milo Adkison (*mdadkison@alaska.edu*)

In Alaska, hatcheries provide substantial benefits to the sport fishing and commercial salmon industries. Widespread otolith marking has allowed better evaluation of the interaction of hatchery fish with wild populations. Hatcheries are frequently proposed as solutions to declines in fish populations; king crab hatchery techniques are being developed, and hatchery programs for other species have been suggested. This session focuses on the track record of existing hatchery programs, and the potential benefits and risks of expanding hatchery production to new species and locations.

Bering Cisco Research in Response to a New Commercial Fishery

Session Chair: Randy J. Brown, U.S. Fish and Wildlife Service, (*randy_j_brown@fws.gov*)

Bering cisco *Coregonus laurettae* is an anadromous coregonid species with known spawning populations in the Yukon, Kuskokwim, and

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First Call for Papers, continued

Susitna rivers in Alaska. No Asian populations have been identified. In 2005, a commercial fishery for coregonid species was initiated at the mouth of the Yukon River supplying a kosher smoked fish market in New York City. By 2007 the buyers in New York expressed an interest in Bering cisco only. To our knowledge, this is the first outside market for an Alaskan coregonid species. The fishery is limited by the Alaska Department of Fish and Game to approximately 10,000 fish per year, but the market would support a much larger allocation. This session will highlight the broad diversity of biological research that has been initiated in response to the demands of this commercial fishery.

Aquatic Invasive Species Threats to Alaska's Fisheries and Aquatic Resources

Session Chair: Cecil Rich (*cecil_rich@fws.gov*)

The recent arrival of highly invasive species such as the colonial tunicate, *Didemnum vexillum* near Sitka and the submersed aquatic plant *Elodea* in Fairbanks, Anchorage, and Cordova has made it clear that Alaska is susceptible to some of the same invasive species threats that have had enormous costs elsewhere in the world. Alaska, however, is in a unique position to avoid widespread introduction and establishment of invasive species. Contributions are invited that cover prevention, early detection and rapid response, and current and potential invasive species threats to Alaska's fisheries and aquatic resources.

Physical, Biological, and Human Factors Affecting Fishes on the North Slope of Alaska

Session Co-Chairs: Jeff Adams (*jeff_adams@fws.gov*), Matthew Whitman (*mwhitman@blm.gov*), and Jason McFarland (*jsn.mcfarland@gmail.com*)

With the effects of climate change becoming more evident and the expectation of increased oil and gas development, fish populations and their habitats on the North Slope will be subjected to increasing stress. These stressors have the potential to change the fundamental physical and biological properties that affect population fitness, define ecological niches, and influence patterns of harvest. To better understand the projected responses to these stressors, managers and researchers must first recognize the current and historical statuses of these populations. This session highlights projects and activities that will lead to increased understanding of factors that drive North Slope fish ecology and how these factors may affect the use of these populations.

Elasmobranchs in Alaska

Session Co-Chairs: Thomas Farrugia (*tjfarrugia@alaska.edu*) and Andy Seitz (*acseitz@alaska.edu*)

Sharks, skates, and rays (elasmobranchs) are long-lived species with slow growth and low reproductive output. There is increasing economic pressure from the global market to develop fisheries for several Alaskan species of elasmobranchs, leading to an urgent need to understand the biology, ecology, and population dynamics of these species. This session brings together current research being conducted on elasmobranchs in Alaskan waters and development of sustainable target and non-target elasmobranch fisheries.

Understanding Fish Movement

Session Co-Chairs: Julie Nielsen (*jknielsen@alaska.edu*) and Andy Seitz (*acseitz@alaska.edu*)

Information on fish movement provides important insights into the spatial and temporal distributions of fishes and relationships with habitat or environmental conditions. This information is the basis for incorporating explicit spatial data into fisheries management and resource conservation practices. Various methods may be used to determine how fish move, including spatial distributions from research surveys, mark/recapture of tagged fish in commercial harvests, detailed movements of individuals determined from electronic tags, and genetic studies. This session features results from fish movement studies in Alaska along with analytical methods to help researchers design future movement studies.

Nutrients and Food Webs in Lake and Stream Ecosystems

Session Co-Chairs: Bert Lewis (*bert.lewis@alaska.gov*), Christian Zimmerman (*czimmerman@usgs.gov*), and Mark Wipfli (*mwipfli@alaska.edu*)

Freshwater ecosystems in the North are typically oligotrophic and nutrient dynamics are important in describing biological productivity and food web dynamics of lakes and streams. Understanding these complex ecosystems

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First Call for Papers, continued

incorporates a broad range of disciplines from biogeochemistry and hydrology to limnology and food web dynamics. This session examines the relationship of nutrient budgets and fluxes, trophic transfer, and productivity of food webs and fishes in the context of fishery and ecosystem management. We invite contributions on all aspects of nutrient dynamics in fresh waters, including biological response to nutrient variability, role of migratory species in transporting nutrients to or from fresh waters, nutrient mitigation (fertilization), and the assessment of nutrient budgets within an ecosystem and fishery context.

Water Temperatures in Alaska Freshwater Habitats

Co-Chairs: Jeff Falke (*jeffrey.falke@alaska.edu*) and Sue Mauger (*sue@inletkeeper.org*)

Water temperature is a key control on growth and survival of fishes and ultimately influences productivity and life history expression. Consequently, understanding natural and human-caused variation in thermal conditions has important implications for fish conservation and management. This session highlights past and current efforts to monitor, model, or characterize water temperature patterns in Alaska's freshwater habitats, including the potential effects of climate change. We invite contributions from river, stream, and lake temperature investigations that may improve our understanding of freshwater thermal regimes in Alaska.

Nominations for the Oscar E. Sette Award

The Oscar E. Sette Award Committee of the AFS Marine Fisheries Section seeks nominations for the 2011 Sette Award. The Award is presented to an individual who has demonstrated sustained excellence in marine fishery biology through research, teaching, administration, or a combination of the three. Award criteria are at *http://fishweb.ifas.ufl.edu/mfs/index_files/Sette_Award.htm*. Nominations will be accepted through July 31, 2011.

Alaska Chapter Seeks Listserve Manager

The AFS Alaska Chapter is seeking one or more individuals to manage the Chapter membership database and to oversee the listserve for distribution information to Chapter members. This is a great opportunity to serve that Alaska Chapter and the professional society supporting Alaska's fisheries. This position is currently occupied by Allen Bingham who has offered to work with interested individuals during 2012 to provide a transition period.

The Electronics Communication Committee for the Alaska Chapter maintains an email distribution list for most Chapter members with email addresses in the Chapter's membership database. The distribution list is used to inform subscribers of Chapter activities such as announcements for the Chapter Annual Conference, chapter elections, the chapter newsletter, and other items of interest. The parent Society hosts our Chapter's email listserver, and all Chapter members with an email address (who have chosen to participate) can be members of that list. Chapter members that are subscribed may post emails to the list at the address *akchap@lists.fisheries.org*. To reduce SPAM messages and to control for mistaken "Reply-to-All" responses, the listserve manager filters submissions before allowing transmission to subscribed participants. In recent years, approximately 100 email messages were sent participants.

Related to this duty, the chair for the Electronics Communication Committee also maintains the distribution list for the Chapter's email list, this essential method of information exchange for our Chapter. The current approach uses a combination of MSExcel and some SAS code to manage the database. It would be optimal for the individual interested in this position to either be conversant in SAS and with access to a SAS license, or be someone with good skills in some other database package (e.g., MS SQL, MS ACCESS, etc.) who can re-write the code in the language of their choice.

Anyone potentially interested in fulfilling these responsibilities can direct questions to Allen Bingham (*allen.bingham@alaska.gov*) or Chapter President Trent Sutton (*tmsutton@alaska.edu*).

Student Subunit Happenings

Thomas Farrugia, Student Subunit Representative

AFS students visit the Alaska Pacific Seafoods processing plant during the NPFMC meeting in Kodiak Alaska; Ben Williams, Thomas Farrugia, Michael Kohan, Ellen Chenoweth, Suzie Teerlink, Kevin Siwicke, and Emily Hutchinson, Jessica Glass with the plant foreman. Photo provided by Thomas Farrugia.

The students of the AFS Alaska Chapter subunit have been busy getting ready for the field season! However, some will no longer need to do fieldwork since they have defended their research. Dan Prince completed his thesis entitled "Ancient Clade and Morphological Analysis of Threespine Stickleback Populations from the Kenai Peninsula, Alaska" and received his Bachelors degree from UAA. Molly Fox Zaleski defended her thesis "Reproductive Indices of Male Snow Crab, *Chionoecetes opilio,* from the Eastern Bering Sea" as part of her Masters in Fisheries at UAF, and Kray Van Kirk defended his Ph.D. dissertation "Multispecies Age-Structured Assessment Modeling as a Tool of Fisheries Management in the Gulf of Alaska."

In addition to these presentations, the AFS Student Symposium on April 13, 2012 was a resounding success! It provided a great opportunity for students to improve their public speaking and presentation skills, helped us stay current on research being conducted by our peers, and increased cohesion among students at different campuses. Twenty-two AFS students from Juneau, Fairbanks and Anchorage presented their research through videoconference among campuses. Thaddeus Buser, Elizabeth Siddon, and Jason Neuswanger won awards for best presentations. The AFS Alaska Chapter sponsored the event.

Finally, a group of AFS graduate students from UAF had the opportunity to take a fisheries management field course and attended the North Pacific Fisheries Management Council (NPFMC) meeting at Kodiak in June 2012. Students received an inside look at the Council process and were able to meet with a wide variety of stakeholders to explore the complexities of fisheries management issues in Alaska. This experience was invaluable to the education of the next generation of fisheries leaders.

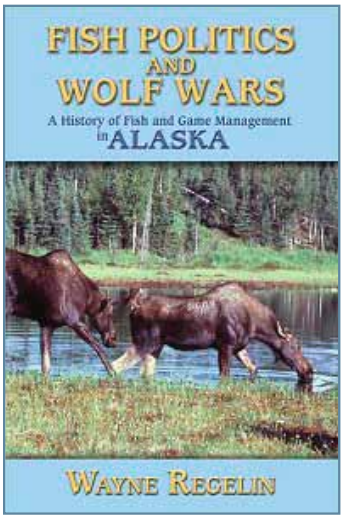
Alaska Fish Photo Contest

The U.S. Fish and Wildlife Service is now accepting submissions for its second annual Alaska Fish Photo Contest! We need your help taking great photos that can be used in educational materials to celebrate the diversity of Alaska's native fishes, their seasonal movements and behavior, and their importance to people and ecosystems in Alaska and beyond. The 2012 photo submission themes include "Fish Doing Fishy Things; What a Girl (Fish) Wants; Fish for the Future; and Unique Alaska." Entries for the 2012 contest must be postmarked by November 1, 2012 Contest details, rules and entry form at: *http://alaska.fws.gov/fisheries/fish/contest_photo.htm.*

New Books

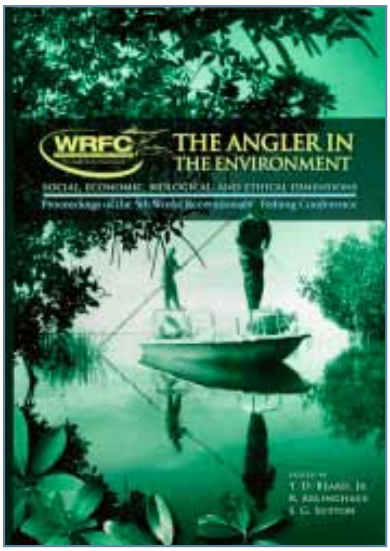
Fish Politics and Wolf Wars - A History of Fish and Game Management in Alaska, by Wayne Regelin. Arctic Loon Press, ISBN-13: 978-0-615-56223-0.

Over the past 250 years, the management of Alaska's magnificent fish and wildlife resources has included ruthless exploitation, extreme protectionism, and excellent conservation. Based on 30 years as a wildlife biologist in Alaska, the author looks into the history of fish and game management in Alaska, with a focus on the Alaska Department of Fish and Game.



The book begins with a brief discussion about the impacts of humans on fish and wildlife prior to European contact, followed by a description of the Russian Era exploitation of fur seals and sea otters. The third chapter reveals fish and game management during territorial days, focusing on fisheries politics and efforts to gain local salmon management authority. The development and evolution of the Alaska Department of Fish and Game in the 50 years following statehood are discussed in the fourth chapter. Several chapters delve into more detail about salmon management and predator management from territorial days until the present time. The final third of the book covers the major issues affecting fish and game management since statehood; including federal land ownership, ANSCA, ANILCA, subsistence disputes, oil development and its effect on resource use and funding for management and research, logging on the Tongass, and the 1996 amendment to the Migratory Bird Treaty Act. The final chapter covers contributions to fish and game management in Alaska by people outside of the Alaska Department of Fish and Game. The book has 245 pages and includes many tables and figures, as well as seven appendixes listing state and federal agencies, and their leaders, responsible for fish and game management in Alaska.

The Angler in the Environment: Social, Economic, Biological, and Ethical Dimensions. by T. Douglas Beard, Robert Arlinghaus, and Stephen G. Sutton (eds.). American Fisheries Society, ISBN: 978-1-934874-24-0.



Based on papers presented at the 5th World Recreational Fishing Conference, this timely book focuses on interactions between recreational anglers and the aquatic environment. Among the issues covered in the book are: the consequences of various fishing rights for sustainable recreational fisheries; partnership approaches among the recreational fishing industry, managers, and researchers for solving sustainability challenges; biological impacts of recreational fisheries; the ethics of the sport; and innovative survey methods for assessing recreational fisheries.

Meetings and Events

American Society of Ichthyologists and Herpetologists and the American Elasmobranch Society 2012, Annual Meeting

August 8–14, 2012: This meeting will be held in Vancouver, British Columbia, Canada. Visit *http://wch2012vancouver.com/*.

Alaska Chapter Meeting of the American Statistical Association

August 15-17, 2012: This meeting will be held in Anchorage. For more information, contact Kanapathi Thiru (*afkt@uaa.alaska.edu*).

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Meetings and Events , continued

142nd Annual Meeting of the American Fisheries Society Symposium

August 19–23, 2012: This meeting will be held in Minneapolis and Saint Paul, Minnesota with the theme "Fisheries Networks: Building Ecological, Social, and Professional Relationships." Please visit *http://www.afs2012.org*.

PICES 2012 Annual Meeting

October 12–21, 2012: This meeting will be held in Hiroshima, Japan with the theme "Effects of natural and anthropogenic stressors in the North Pacific ecosystems: Scientific challenges and possible solutions." For more information, please visit *http://www.pices.int/*.

39th Annual Meeting of the American Fisheries Society Alaska Chapter

October 21–26, 2012: This meeting will be held in Kodiak, AK with the theme "Ecosystem, Fishery, and Food Sustainability in a Changing World." The meeting chair and program contact is Mark Wipfli (*mwipfli@alaska.edu*).

Kodiak Fish Passage Workshop

October 23-24, 2012: This 2-day classroom/field-based workshop takes place at the Kodiak National Wildlife Refuge Visitor Center. Contact Katrina Mueller for more information: *katrina_mueller@fws.gov* or (907) 786-3637.

Responses of Arctic Marine Ecosystems to Climate Change

March 26–29, 2013: This meeting will be held in Anchorage, Alaska. For more information, please visit *http://seagrant.uaf.edu/conferences/2013/wakefield-arctic-ecosystems/index.php*.

7th International Fisheries Observer and Monitoring Conference

April 8–12, 2013: This meeting will be held in the city of Viña del Mar, Chile. For more information, please visit *www.ifomc.com*.

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Feel free to contact the Executive Committee members