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Saxitoxin DNA

Graduate student Zhengyu Wei is among the first to identify genes and proteins involved in saxitoxin biosynthesis. He is doing his research under IMS associate professor Gerry Plumley on the Sea Grant-funded project "Molecular Biology of Paralytic Shellfish Poisoning: Role of Prokaryotes in Toxin Production."

Paralytic shellfish poisoning (PSP) is deadly; it causes serious health problems and economic loss. People can become very sick after eating shellfish contaminated with saxitoxins that are produced in algal blooms.

In their quest to find the cause of PSP, researchers in the past concluded that the saxitoxin in algal blooms is produced by dinoflagellates present in large numbers. In recent years, however, further studies have confirmed that bacteria can synthesize saxitoxin. Saxitoxins are alkaloid neurotoxins that resemble purines.

Working with a saxitoxin-producing strain of bacteria, Wei is creating mutants by transposon mutagenesis. In this procedure, a fragment of DNA is transferred from a donor bacterium to a saxitoxin-producing host where it creates a mutation. The insertion occurs at random and inactivates any gene that it is inserted into. Many of the host bacteria are killed because the mutation is lethal, but some survive and multiply. Wei's next step is to screen thousands of mutant colonies to determine if they can still synthesize saxitoxin. The colonies unable to make saxitoxin have the foreign DNA inserted into one of the saxitoxin genes. From there, it is easy to identify the inserted DNA and the gene it was inserted into. Once the saxitoxin gene fragments are in hand, Plumley, Wei, and others will sequence the genes, and determine environmental variables that influence gene expression. The availability of the saxitoxin genes will lead to better understanding of toxin production under natural conditions.

Wei came to UAF in 1995 after earning a master's degree at the Chinese Academy of Agricultural Science in Beijing. He expects to finish his Ph.D. in biochemistry at UAF in 1999.

PSP: The Alaska Problem

Paralytic Shellfish Poisoning: The Alaska Problem. This issue of *Alaska Marine Resources*, published by the Marine Advisory Program, is an excellent summary of the PSP problem in Alaska. PSP poisoning is caused by neurologically damaging saxitoxins. People who eat shellfish that have been feeding on toxic dinoflagellates can suffer from numbness, paralysis, disorientation, and death. Testing programs in Alaska ensure that shellfish reaching the retail food market are safe. But the widespread indifference of recreational and subsistence harvesters to PSP warnings results in about seven individual cases of poisoning per year in Alaska.

Authors include Ray RaLonde, Gerry Plumley, and Zhengyu Wei (UAF), Brad Gessner (Alaska Department of Health and Social Services), Rita Horner (University of Washington), and Robert Fortuine, M.D. *Alaska Marine Resources* 8(2), 1996, 20 pp., \$2.00. Available at the Sea Grant office (907) 474-6707.

New Schedule for Sea Grant Proposals

The schedule for Sea Grant proposals and the process of selection will change in 1997. The standards for Sea Grant proposals are unchanged (i.e., quality research or education focused on a priority issue), but the schedule and decision process will change to comply with new guidelines from the National Sea Grant office of NOAA. The anticipated schedule is:

31 January 1997. The call for 4-page letters of intent (LOI) will be issued by Alaska Sea Grant. The announcement will have details on the format of the LOI and will include a brief statement of priority issues.

1 April 1997. Letters of intent are due in the Alaska Sea Grant office.

Advisory panels will help Alaska Sea Grant select projects that most effectively address the needs of the region. A more substantial cut in the number of projects will occur at this stage than in past years. Alaska Sea Grant has been asked to carry forward fewer projects to the full proposal stage than in the past, to lighten the burden on the national peer review system.

30 April 1997. Faculty will be advised whether to develop full proposals.

20 June 1997. Full proposals are due in the Alaska Sea Grant Office.

Peer reviews will be sought in summer 1997. An outside scientific panel will be seated the first week of September to advise on the final selection of projects to be included in the omnibus proposal to the National Sea Grant office.

1 February 1998. Funding available.

Educating Marine Technologists

Dillingham MAP agent Terry Johnson recently participated in a Marine Advance Technology Education forum in Monterey, CA, sponsored by the National Science Foundation. NSF has a major initiative to fund advanced technology education around the nation, but has yet to fund marine projects under this initiative. The forum was held by several colleges with marine technology programs to develop a project they hope will be funded. Worldwide more than one million people are employed as marine technicians, one-third being in the United States, with expertise in ocean thermal conversion, deep seabed mining, offshore gas and oil, deep sea salvage and recovery, oceanographic research, underwater construction, and pollution abatement. The MATE project would involve about six colleges, including Prince William Sound Community College in Valdez, AK.

Radio Stories

Arctic Science Journeys radio stories soon will be heard on the Canadian Broadcast Corporation's Radio Noon, aired in Whitehorse, Yukon Territory. *Arctic Science Journeys* produced four radio stories during the past month: (1) Black Guillemots new to Alaska with warming climate, (2) Low birthweight babies in Alaska Native population, (3) Recent sightings of the rare northern right whale, and (4) Role of computers and email in Alaska medical care. ASJ provides stories about science, culture, and the environment of the Arctic, and features University of Alaska research. It is a production of the Alaska Sea Grant Program and UAF University Relations.

Awards

Alaska Sea Grant won two awards in the National Association of Government Communicators 1996 competition. *Arctic Science Journeys* won first place in the weekly radio show category, and the book *Guide to Northeast Pacific Flatfishes* won third place in the four-color publication for technical audience category. In addition, the video news releases from the National Fisheries Forum "Can America Save Its Fisheries," organized by the national Sea Grant network, tied for second place in the NAGC competition. Alaska Sea Grant director Ron Dearborn chaired the steering committee for the forum, held in 1995.

Fishlines is a monthly in-house newsletter reporting on Alaska Sea Grant activities of interest to staff, students, and principal investigators of Alaska Sea Grant and the Marine Advisory Program, and staff of the School of Fisheries and Ocean Sciences. For more information about *Fishlines* contact Sue Keller, (907) 474-6703.

Alaska Sea Grant College Program
University of Alaska Fairbanks
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U.S. Congress Hearing

The Resources Committee of the U.S. House of Representatives has scheduled its first hearing of the 105th Congress to consider reauthorization of the National Sea Grant Program (HR 437), February 27 at 10 am, in Room 1334 of the Longworth House Office Building. The hearing will be chaired by Rep. Jim Saxton of New Jersey, chair of the Subcommittee on Fisheries, Wildlife, and Oceans.

Witnesses will be Ronald Dearborn on behalf of the Sea Grant Association, Ron Baird on behalf of NOAA, John Toll on behalf of the National Sea Grant Review Panel, and Leonard Pietrafesa on behalf of the Board on Oceans and Atmosphere of NASULGC (National Association of State Universities and Land Grant Colleges).

Sea Grant Week '97

Ron Dearborn, president of the Sea Grant Association, is organizing the 1997 Sea Grant Week meeting, to be held in Madison, WI, August 10-13. Sea Grant Week '97 will be at Monona Terrace, a new convention center designed by Frank Lloyd Wright, now under construction. Sea Grant Week is a biennial gathering for Sea Grant directors and other staff and affiliates. The 1997 meeting will feature presentations on the most effective Sea Grant research, education, and outreach efforts in seafood technology and ecosystem issues, and will also include group meetings and planning sessions. Sea Grant Week '97 will commemorate Sea Grant's 30-year anniversary.

Nuisance Species in Prince William Sound?

The risk of aquatic nuisance species invading Prince William Sound is the topic for a workshop sponsored by the Prince William Sound Regional Citizens' Advisory Council and U.S. Fish and Wildlife Service. The workshop will be held March 25, 1997, 9-4:30, in the Captain Cook Hotel in Anchorage. Speakers include Robert Benda, RCAC; James Carlton, Williams College, CT; Anson Hines, Smithsonian Environmental Research Center, Edgewater, MD; and Allegra Cangelosi, Northeast/Midwest Institute, Washington, DC. To register, call Joel Kopp at RCAC (907) 835-5957 by Feb. 28. Registration is free.

It is widely believed that most invasions of aquatic nuisance species around the world have been via ballast water carried by large vessels for stability. In any 2-hour period, 3,000 species of living organisms are being transported around the world in ship ballast tanks. While most of those species die in the receiving ports, a small number can cause major ecosystem disruption, as they have in San Francisco Bay, the Great Lakes, Chesapeake Bay, Australia, and the Black Sea.

The Port of Valdez receives about 20 million metric tons of tanker ballast water annually. Little is known about what species are arriving in tanker ballast water, what species could survive in Prince William Sound, what species can survive in the dirty ballast water and the ballast water treatment facility, and what impact survivors would have.

To help answer these questions, the RCAC, in conjunction with USFWS is (1) forming a nonindigenous species working group of more than a dozen industry, agency, and public stakeholders; (2) enlisting the Smithsonian Environmental Research Center to conduct a pilot study of the risk of invasion in PWS; and (3) conducting the aquatic nuisance species workshop as an educational and planning forum.

Fisheries Scholarship

Alaska Sea Grant has joined with the National Fisheries Institute, the nation's largest seafood processing organization, to initiate an annual scholarships for deserving students.

NFI created the scholarship through a \$50,000 donation from former NFI chair John G. Peterson. Each year the investment earnings will generate half the student stipend. If the scholarship is awarded to a University of Alaska student, Alaska Sea Grant will contribute the other half.

Allison Barnes is the first recipient of the new scholarship. An SFOS master's student studying fisheries oceanography, Barnes is comparing bycatch rates in the Alaska groundfish fishery to environmental conditions such as sea temperature, depth, and light. The goal of her study is to determine if bycatch

can be reduced by more precisely targeting marketable fish. Barnes is currently on leave from the National Marine Fisheries Service observer program, to pursue her graduate degree.

Sea Grant Publication

Fishing Vessel Insurance: How Much Is Enough?, by Terry Johnson, is an 8-page article with key information for boat operators about marine insurance policies. It addresses the four types of vessel insurance: hull and machinery, breach of warranty, cargo, and protection and indemnity (P&I). The information is useful nationwide--three Sea Grant programs bought into the press run (Oregon, Texas, and Georgia). Author Terry Johnson is SFOS associate professor of fisheries, Marine Advisory agent, and fisherman. The publication is available at the Sea Grant office (907) 474-6707, single copies free, multiple copies 28 cents each.

Sea Grant Web Sites

Visit Alaska Sea Grant's new web pages at <http://seagrants.uaf.edu/>. A new publications catalog has been added to the site, which shows over 100 items. Most publications are for sale; some are free. Images of the covers and posters are accompanied by short descriptions about each publication. Each has its own page, so it can be linked to, for example, the web site of a Marine Advisory agent who wrote the publication. Similar link connections are made throughout the Sea Grant site and SFOS web sites. Research activities and a staff directory also have been added to the Alaska Sea Grant web site.

Changes to the National Sea Grant Program web pages include the addition of Sea Grant's Guide to Coastal Science Experts, in a searchable format. The guide is on the Sea Grant media center site at: <http://www.seagrantsnews.org>.

Radio Stories

Arctic Science Journeys recently produced radio stories on (1) the nomadic snowy owl of the Arctic, and (2) the remembrance of Saint Innocence, Russian Orthodox priest John Veniaminoff.

Arctic Science Journeys is broadcast every week on 24 Alaska public and commercial stations, on Earthwatch Radio, and on the Voice of America radio network. ASJ radio provides stories about science, culture, and the environment of the Arctic, and often features University of Alaska research. It is a production of the Alaska Sea Grant Program and UAF University Relations.

Recreational Boating Safety

A safety book for recreational boaters will be published by Alaska Sea Grant in the next few years. The book will be similar to the best-seller *Beating the Odds on the North Pacific: A Guide to Fishing Safety*, edited by Sue Jensen. As partners in the project, the U.S. Marine Safety Association and the Alaska Marine Safety Education Association will provide expertise, review, and guidance on the new book. Sue Jensen will write the text. The audience for the recreational boating safety book will be recreational boaters nationwide.

New Software

Washington Sea Grant researcher Gordon Swartzman has developed software for fisheries scientists and managers to help them set fishing policy and quotas. The program, called Fish Ideas, could be very useful for managers who must correlate location-specific information from many sources. For example, a fisheries manager can compare age data from scientific surveys with ocean salinity and depth to show that young cod are more common in the shallows and need to be protected there. The program can also be used to analyze water chemistry and to conduct other types of oceanographic studies. Swartzman is a professor at the University of Washington's Applied Physics Lab and School of Fisheries.

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Coastal Fellowships

Marine resource graduates are invited to apply for a fellowship sponsored by the NOAA Coastal Services Center. In its second year, the fellowship provides professional, on-the-job education and training to postgraduates in coastal resource management and policy. The program matches recently graduated students (master's, professional degree, and doctoral) with hosts around the United States for two-year fellowships that will begin October 1, 1997. Students graduating between now and September 1997 also are eligible. Stipends for the fellowships are \$64,000 for two years.

The following seven agencies will host 1997 Coastal Management fellows:

- Alaska Department of Fish and Game, "Development of an Ecological Characterization of the Kachemak Bay Watershed"
- Louisiana Department of Natural Resources, "Developing a GIS Track, and Mitigation and Beneficial Use Sites"
- Maine Coastal Program, "Evaluating and Protecting Maine's Marine Habitats"
- Michigan Land and Water Management Division, "Improving Coastal Wetland Resource Decisions"
- New York Division of Coastal Resources and Waterfront Revitalization, "Advancing Habitat Management and Restoration Capabilities on New York's Coast"
- South Carolina Office of Ocean and Coastal Resources Management, "Developing a Post-Hurricane Recovery Element"
- Washington State Department of Ecology, "Coastal Research and Local Decisions: Building the Bridge for Improved Coastal Hazard Management."

Applications are due in the office of Alaska Sea Grant director Ron Dearborn on *March 28, 1997*. For information on how to apply for the fellowship, please contact Sue Keller (474-6703) or Ron Dearborn (474-7086) in the Sea Grant office, 205 O'Neill Building, UAF.

Sea Grant Testifies

Sea Grant received an extraordinary amount of positive attention and bipartisan support at U.S. Congressional hearings February 27, according to Lee Stevens, Sea Grant Association executive director. The House Resources Committee held a hearing to consider HR 437, the "Marine Resources Revitalization Act of 1997," which reauthorizes the National Sea Grant College Program.

Ron Dearborn, Sea Grant Association president, highlighted Sea Grant's contributions and successes, expressed SGA's strong support for HR 437, and criticized the Administration's proposed \$4.1 million cut in Sea Grant. Ron Baird, National Sea Grant director, cited the many unique features of Sea Grant that make it so important in ocean, coastal, and Great Lakes research.

Leonard Pietrafesa, representing the National Association of Land Grant Colleges, and John Toll, of the National Sea Grant Review Panel, also testified on Sea Grant's behalf. At the end of the hearing, Rep. Wayne Gilchrest asked to reconvene witnesses Dearborn, Baird, Pietrafesa, and Toll at a future date to discuss revitalizing U.S. ocean policy.

During a second hearing that day, as the Resources Committee considered NOAA budget issues, discussion again returned to Sea Grant. Rep. Gilchrest made it clear that the

Resources Committee would not accept a \$4.1 million cut in the Sea Grant Program, and Resources Committee Chairman Don Young said he also opposes the cuts.

Marine Biotechnology Briefing

A science education forum was held on marine biotechnology on March 3 in Washington DC, for journalists, policy-makers, industry leaders, and Congressional staff. The forum was sponsored by and featured research funded by the National Sea Grant College Program.

Twelve national leaders in marine biotechnology research presented their latest results. Developments included new anti-inflammatory compounds from marine organisms that could impact treatment of arthritis and inflammatory bowel disease; a report on the genetic diversity of haddock in Georges Bank and the implications for the restoration of that fishery; the discovery of a polymer from oysters that enhances nutrient uptake in agricultural crops, reducing chemical fertilizer pollution; and a probe to detect a highly toxic algae responsible for killing millions of fish in the Mid-Atlantic and Southeast regions.

Charter Boat Operator's Guide

How to operate a charter boat business is featured in the January *Alaska's Marine Resources*, the Alaska Marine Advisory newsletter. The sixteen-page publication makes available all the information needed to start a charter business. The charter industry has a major presence in Alaska port cities from Ketchikan to Kodiak, and is a growing industry on freshwater rivers and in western Alaska.

Dillingham MAP agent Terry Johnson wrote articles on The Charter Boat Business, Permits and Licenses, Land Use Permits, and Safety Equipment and Vessel Standards. Homer MAP agent Doug Coughenower wrote the introduction, Marketing Your Charter Business, and Drug and Alcohol Testing. And Kodiak marine mammal specialist Kate Wynne has an article on Viewing Marine Mammals Responsibly. Deborah Mercy is managing editor of the newsletter. Available from the Anchorage MAP office, (907) 274-9691.

Salmon Canning Video

Deborah Mercy, MAP video producer, has completed the sixth program in the Alaska Seafood Marketing Institute video series on seafood handling, *You Are the Difference*. The new video, *Meeting the Quality Challenge: Recommended Quality Practices for Salmon Canning*, MAPV-31, will be available at the end of March from ASMI's fulfillment office at (800) 854-3054.

Radio Awards

Doug Schneider, Alaska Sea Grant public information officer, has won two silver awards for Arctic Science Journeys radio stories in the annual competition of the Agricultural Communicators in Education (ACE). A story on how tobacco and alcohol affect the health of babies born to Alaska Native women, *Low Birth-weight Babies*, won in the news category, and a story on the scientist's job of ensuring healthy fish stocks in Alaska, *Fishy Science*, won in the features and specials category. The stories aired in late 1996-early 1997. ACE is an international organization of professional communicators in university extension. About the *Fishy Science* story, judge Maria Gallagher commented, "The use of natural sound is absolutely outstanding."

Call (907) 474-1806 to hear the latest ASJ radio stories.

How to Sell Books

Communications manager Kurt Byers gave a presentation on publications marketing last month at the annual meeting of the western region chapter of the Agricultural Communicators in Education in Las Cruces, New Mexico. Byers cited methods university extension publishers can use to sell educational materials through book stores, gift shops, interpretive centers, catalogs, book wholesalers, and on the world wide web. He recommended first developing a "flagship" book or video that is attractive to retailers, then building off that with additional products.

Byers emphasized the high credibility enjoyed by university publishers, which can be used to entice retailers into handling extension products. He stressed the importance of a well-maintained mailing list, strategically timed promotional mailings, filling orders quickly, providing as many options as possible for payment, and offering a liberal unsold book return policy and at least a 40 percent discount to retailers. One attendee remarked about Byers'

session, "Lots of great ideas--I'm really fired up about trying some of these things in my state!"

Sea Grant Products Raise Funds

Alaska Sea Grant has recently helped several organizations raise funds by donating new books, posters, and T-shirts to be used for door prizes and auctions. Last month Sea Grant gave items to Fairbanks Counseling and Adoption for a silent auction, and to the Southwest Alaska Municipal Conference for their annual meeting in Anchorage. Items will also be donated to the Discovery Foundation for a March 14 fundraiser in Juneau, who will use the income for a children's nature study program, and to the Alaska Wilderness Recreation and Tourism Association for a March 22 meeting at UAF.

Partners in Science

Partners in Science needs marine scientists. Partners in Science is a National Science Foundation grant awarded to the Fairbanks North Star Borough School District. The project links K-12 students and teachers to practicing university, industry, and agency scientists using the Internet, with the aim of increasing the use of math and science in student projects. Scientists and mathematicians serve as mentors for the students. One of the methods used for collaboration is the recently created listserv for online discussion between scientists and students.

Nearly forty scientists have volunteered to participate in Partners in Science in 1997. Marine scientists are not yet well represented, and are enthusiastically invited to join. For more information contact Martha Robus Kopplin, mkopplin@northstar.k12.ak.us. Visit the Partners in Science web site at <http://www3.northstar.k12.ak.us/NSFPIS/vsm.html>.

Marine RFP Listserv

A new listserv has been set up exclusively for the distribution of marine-related requests for proposals and grant-related questions. Potential subscribers are those seeking funding for marine-related research: aquaculture, environmental quality, fisheries, marine biotechnology, marine education, marine recreation and tourism, socio-economic, legal and policy issues, etc.; and organizations who distribute calls for proposals. It is not a general discussion list.

To subscribe to the list send email to listserv@listserv.tamu.edu, and in the body put subscribe coastfrp firstname lastname. For further information contact Debbie Hermann, dherman@unix.tamu.edu.

Sea Grant Director Sought

The University of North Carolina is inviting applications for director of the UNC Sea Grant College Program. The director is responsible for all aspects of program activities, which include support of research, extension, education, and interaction with government officials and the private sector. Applications and nominations will be accepted until the position is filled, but the search committee will begin reviewing applications on April 15, 1997. For more information contact Jasper Memory, fax (919) 962-2751.

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Knauss Fellowships

Graduate students in all marine-related fields are invited to apply for the 1998 Knauss Marine Policy Fellowship. Since 1979, the Sea Grant Knauss Fellowship program has provided a year's educational experience in Washington for 320 students. Each year's class of approximately 25 fellows proves to be a top-notch group, providing professional networking and close friendships. Applications are due in the Alaska Sea Grant office in early September 1997, for the fellowship term beginning February 1998. For more information contact Sue Keller (907) 474-6703.

Marine Industry and the Disabled

Over the next few years new regulations for the Americans with Disabilities Act (ADA) are going to require that boating facilities and vessels be more accessible to disabled Americans. Homer MAP agent Doug Coughenower spent the last six months studying marinas, harbors, fishing piers, and passenger vessels in the United States to see how they provide access. He will share ideas and information he gathered with the Alaska marine industry.

Coughenower found that while most marinas have land-based facilities (restrooms, parking, etc.) that are accessible to people with disabilities, the docks, floats, and boat slips do not meet ADA accessibility guidelines. Very few of the vessels visited by Coughenower can easily and safely accommodate people with disabilities. Unassisted access onto vessels, access to restrooms, and access from one deck to another are the three most difficult problems faced by disabled people on a passenger vessel.

In addition to accommodating physically impaired people, the marine industry must consider those who are hearing and sight impaired. In an emergency, sounding an alarm won't get the attention of the person who can't hear. Nor are posted warning signs much help for those who can't see.

Coughenower found that the attitude of facility and vessel operators is positive--they want to accommodate and provide service to people with disabilities. However, they have cost and safety concerns about providing these services.

People with disabilities are making use of marine facilities and vessels, despite the lack of barrier-free access. Coughenower's research will serve as a reminder to operators that they should provide access for the disabled, so they can use the facilities unassisted.

Russia's Fisheries Economy

Transformation from a state-run economy into a free-market system has come quickly in Russia's Far East, modernizing the country's commercial fishing industry. Marine Advisory agent Terry Johnson has made several trips to the Far East region, touring fishing and seafood processing operations in Petropavlovsk. According to Johnson, "They're modernizing. It's all a question of capital. Things happen there as quickly as money can be found to do it." Russian processing companies are converting to an export-driven industry, upgrading vessels and facilities with technology that "meets demands of the new markets," said Johnson. The real question, however, is what market niche Russian fisheries will come to occupy. Although most of Russia's salmon catch is low-grade pink salmon that is canned and sold domestically, other higher-priced seafood, like halibut and crab, are poised to play an important role on the world marketplace. According to Johnson, since becoming a free-market system, Russian fisheries have come into maturity as players in the international fishing market, having a big effect on the number of king crab and halibut coming into Japan and the United States. Johnson notes, "There is no doubt in my mind that in the long term they'll be another Alaska in terms of their impact on the fishing industry." (Written by Gina Rullo of the National Sea Grant Media Center.)

Sea Grant National and State Awards

Carol Kaynor and Sue Keller won a gold award in the technical publication editing category in the Agricultural Communicators in Education (ACE) annual competition, for their work on the proceedings book *High Latitude Crabs*. The editing category is new in 1997. In addition, Kaynor and Keller tied for a silver award in the popular publication category for the Sea Grant booklet *Dressing for Cold*.

Kurt Byers tied for the bronze award in the ACE newsletter category, for *Flyways, Pathways &*

Waterways, the Alaska Natural Resource and Outdoor Education Association newsletter. Byers is president of ANROE, and edits the newsletter.

Doug Schneider won a silver award for Arctic Science Journeys in the ACE radio program category. ASJ also won the first place award from the Alaska Press Club for best radio environmental reporting, and second place for best radio reporting in health or science. The first place award is for a story that highlights research by SFOS graduate student Alisa Abookire, on Kachemak Bay juvenile flatfish.

Sea Grant Hires Artist

David Brenner was recently hired as Sea Grant graphic artist. In his new position Brenner will design publications and other print and electronic media, design displays, and do photograph and illustration work. Brenner's experience includes two years as graphic artist and copy desk editor at the Fairbanks Daily News-Miner, two years in art gallery management in New York City, and a semester as lecturer in computer art at UAF. Several of Brenner's pencil drawings are currently on display at the Alaska Coffee Roasting Co. in Fairbanks.

Brenner fills the graphic artist position formerly held by Susan Gibson. Last December Gibson moved on to a position as web information coordinator in the University of Alaska Statewide public affairs office, where she oversees world wide web development and design for the statewide system.

Good Web Sites

Take a look at the outstanding web offerings from Sea Grant programs in other states:

Science Experts: Links to individual state Sea Grant web pages and the searchable "Sea Grant's Guide to Coastal Science Experts" are at the National Sea Grant Media Center site at <http://www.seagrantnews.org>.

Aquaculture: The Aquaculture Network Information Center or AquaNIC site at <http://www.aquanic.org/> is the "gateway to the world's electronic resources in aquaculture." The site houses aquaculture publications, news, interactive software, photos, and aquaculture jobs and links to other aquaculture sites.

Tourism: The Sea Grant Coastal Recreation & Tourism Page at <http://seagrant.orst.edu/crt/> provides links to hundreds of marine recreation and tourism sites and is home to MarinaNet, Sea Grant's multi-state program for marina operations. Visitors can subscribe to an email discussion group with marina owners and managers, the Sea Grant extension network, and national marina associations.

Exotic Species: The Sea Grant Zebra Mussel and Nonindigenous Species World Wide Web Site at <http://www.sgnis.org/> houses more than 150 research reports and 60 educational items, a slide library, and introductory written and pictorial descriptions of aquatic exotics.

L.A. Beaches: Check out the "Southern California Sea Grant Guide to L.A. Beaches" at <http://www.usc.edu/dept/seagrant/seagrant.html>. The beach guide is a source for information, directions, and maps.

Remote Sensing Meeting

The Habitat, Research, and Management Workshop on Spatial Data and Remote Sensing in Invertebrate Fisheries will be held in Fort Walton Beach, Florida, April 19-20, 1997. The meeting will address the application and interpretation of information derived from satellite and aircraft imagery, and underwater remote sensing. The focus is on reliability and cost-effectiveness of instrumentation, logistical approaches, and data acquisition, retrieval and analysis. The workshop is in association with the Annual Meeting of the National Shellfisheries Association. For more information contact Gary Smith at gsmith@hpel.cees.edu.

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Sea Grant Week

Two of Alaska Sea Grant's submitted topics were selected for presentation at the August 1997 Sea Grant Week, the biennial national Sea Grant meeting. Alaska Sea Grant will assist SFOS faculty in preparing multimedia presentations on (1) Alaska Sea Grant's response and assistance to decision making on ecosystem issues, and (2) Alaska Sea Grant's long-term productive relationship with the Alaska Seafood Marketing Institute. Both outreach and research faculty will be involved in the presentations. Sea Grant Week will be held in Madison, WI, August 10-13, 1997.

Proposal Submission Schedule

Thirty-six pre-proposals, which would total \$2.75 million per year, were submitted to the Alaska Sea Grant office April 1. Approximately half of those were selected for development into full proposals, due June 20, 1997. The budget will allow funding for about one third of the full proposals.

Proposals for projects competing for Sea Grant special programs, i.e., biotechnology, NOAA partnerships, and outreach are due June 16, 1997.

Former Knauss Fellow Now at OAR

Nina Mollett, 1996 Sea Grant Knauss fellow from UAF, has taken a temporary position with the Congressional Affairs Department of NOAA Oceanic and Atmospheric Research in Silver Spring, MD. Mollett has been working as Congressional liaison/facilitator at OAR since February. She is attending hearings and writing reports on legislative progress that will support Congressional authorization for the National Undersea Research Program, which has never been authorized by legislation. She will work at OAR through October 1997.

Mollett's Knauss fellowship appointment was with NOAA Sanctuaries and Reserves Office. One of her accomplishments in that position was writing an effective socioeconomic section for the impact statement on the Florida Keys National Marine Sanctuaries program. She feels the document offers flexibility for small businesses affected by the Florida sanctuaries, especially fishermen who may be required to change fishing grounds under the program.

A brochure describing the 1998 Sea Grant Knauss fellowship is enclosed with this newsletter. Applications are due September 5, 1997. Those interested in the fellowship should contact Sue Keller at 474-6703, or Ron Dearborn at 474-7086.

Book Reprints

Sea Grant recently published revisions for three popular publications, all available at the Sea Grant office at (907) 474-6707.

[Hazardous Materials on Board](#), by Carl Hild. This book tells how to safely handle hazardous materials that are commonly used on vessels. The U.S. Coast Guard uses the manual for safety training. All sections have been revised and brought up to date, with help from the UAF Risk Management Department. MAB-43, Second Edition, 1997, 40 pp., \$6.00.

[Gillnet Hanging](#), by Paula Cullenberg. This book is an illustrated, step-by-step guide for fishermen. It tells how to hang a net, change the hanging ratio, and replace the webbing. Presentation of one of the commonly used knots has been revised in this edition. MAB-29, 1997 Edition, 22 pp., \$4.00.

[Planning Seafood Cold Storage](#), by E. Kolbe and D. Kramer. This book guides users step-by-step through the planning and building stages for a cold store unit, and is indispensable as a reference for storage times and conditions for all seafoods. The section on suppliers was updated for the second edition. MAB-46, Second Edition. 1997, 60 pp. \$9.00.

Natural Resource Catalog for Educators

Alaska Sea Grant is distributing a new catalog for educators, *Guide to Alaska Natural Resource Education Materials*, published by the [Alaska Natural Resource and Outdoor Education Association](#) (ANROE). The catalog lists curriculum guides, activity books, kits, and other resources available.

Teachers, interpretive centers, homeschoolers, and anyone else teaching about natural resources will find it invaluable. More than 120 publications and kits are listed, plus 35 agencies, organizations, and programs. ANROE is distributing the catalogs statewide, and copies are also available at the Sea Grant office, (907) 474-6707. 24 pp., single copies free.

Benthic Habitat Meeting

A conference, Marine Benthic Habitats and Their Living Resources: Monitoring, Management and Application to Pacific Island Nations, is planned for November 10-16, 1997, in Noumea, New Caledonia. The primary goals of the conference are to: (1) bring together geologists and biologists studying the relationship between marine geology and living marine resources, including marine biodiversity and fisheries; and (2) provide a synthesis of technology available to study and monitor the benthic submarine environment. The goal is technology transfer to Pacific Island nations. For more information contact Jean-Marie Auzende, Auzende@noumea.orstom.nc.

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Pink Salmon Genetics

Graduate student Ivan Wang is studying pink salmon to see if fitness loss occurs when genetically isolated salmon populations are interbred. His work will improve the understanding of salmon genetics, with the long-range goal of conserving the wild populations in Alaska and rebuilding salmon populations in the Lower 48. Wang is earning his master's degree in fisheries under Tony Gharrett at the Juneau Center, SFOS.

Outbreeding depression, the fitness loss Wang is studying, occurs when populations that were genetically isolated over time are brought together again. For salmon, the fitness of a wild population may decrease through interbreeding with stray hatchery fish or fish from a distant population, because a population's gene pool becomes diluted with genes that evolved under different selection pressures. Also, favorable gene complexes (called coadaptive genomes) which evolved together may be disrupted when genes are introduced from different populations. These are examples of outbreeding depression. Geneticists agree that outbreeding depression affects fish, but they want to know more about the impact it has and how it happens.

Wang is studying rate of development as an indicator of outbreeding depression. He looks at embryonic stages of pink salmon to determine how fast they develop. If an embryo develops too fast or too slowly it has a decreased chance of surviving in the ocean. Wang also is looking at fluctuating bilateral asymmetry-comparing development rates of gill rakers and pectoral fin rays on the left and right sides in hybrids and controls. A higher than normal rate of asymmetry indicates genetic disturbance.

In addition to studying development, Wang is responsible for raising the fish and later marking and releasing them. His crosses are between salmon from Auke Creek in Juneau and Pillar Creek near Kodiak. The fish he bred in 1996 have been released and will return in August 1998. Researchers on Gharrett's Sea Grant-funded project will measure rates of survival to return for these salmon. Wang plans to finish his master's in fall 1998.

Ward Gets Coastal Fellowship

SFOS graduate student Allison Ward has been selected for a 1997 Coastal Management Fellowship, sponsored by the NOAA Coastal Services Center. Ward will spend two years in Maine, working on the Maine Coastal Program project "Evaluating and Protecting Maine's Marine Habitats." The goal of the project is to improve marine habitat protection using assessment methods, to develop procedures to identify risks to sensitive habitats, and to develop guidelines to protect critical marine habitats.

Ward currently is finishing her master's degree in marine biology under Peter McRoy. Her thesis title is *A Temporal Study of the Phytoplankton Spring Bloom in Prince William Sound, Alaska*.

The fellowship provides professional, on-the-job education and training to postgraduates in coastal resource management and policy. For the 1997 program, seven graduates were matched with agency hosts around the nation for two-year fellowships beginning October 1. Grants supporting the fellows are provided through Sea Grant programs in the states hosting fellows.

MAP Faculty Retire

SFOS faculty members Hank Pennington and Craig Wiese were honored for their outstanding service at a retirement sendoff in Anchorage in late May.

Hank Pennington served as a MAP agent for 22 years. He was founding chair of the Alaska Marine Safety Education Association, and trained over 1,000 fishermen in marine safety. He

helped develop aquaculture in Alaska as well as several fisheries, and started a vocational training program in white fish processing. Pennington was editor of the *Alaska Sea and Coasts* newsletter for seven years and led the 4-H marine science camp (which he started) for nine years. He served on numerous University of Alaska and local and national committees, published articles and books, and developed safety videos. He won the 1995 U.S. Marine Safety Association award, the 1991 Jerry Jurkovich award for vessel safety contributions, and the 1988 Pacific Sea Grant advisory award for outstanding MAP educational effort.

Craig Wiese was awarded professor emeritus status at the May 1997 UAF graduation ceremony in Fairbanks. Wiese was associate chair of the Marine Advisory Program from 1985 to 1997. His accomplishments during his 20-year tenure as MAP agent include setting up the Cordova MAP office in the late 1970s and helping to start the clam fishery in Alaska. While at the University of Alaska Wiese taught seven university and community college courses on business management for fishermen, presented more than 75 business management workshops, published over 22 articles and books on his fishing industry research and other topics, wrote computer templates for financial record keeping for fishermen, and served on numerous university and community committees. Wiese will continue working in Alaska business management, possibly for a private firm.

New Sea Grant Publication

Guidelines for Shellfish Farming in Alaska, by Brian Paust and Ray RaLonde. This manual has practical guidelines, strategies, and warnings about entry into shellfish farming business in Alaska and other cold water regions. The book describes what kinds of people make the best shellfish farmers, why some farms fail, how to get accurate information on shellfish farming, how to start a business, financing, choosing a culture site, and techniques. Paust and RaLonde have worked closely with Alaska shellfish farmers for the past two decades. 24 pages, price \$4.00, available in the Sea Grant office, phone (907) 474-6707.

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Gautam Wins Award

FITC graduate student Akilesh Gautam won an award for the best food engineering research paper at the annual meeting of the Institute of Food Technologists in Orlando, FL, last month. The IFT annual meeting is the largest national conference on food science and technology, and was attended by more than 20,000 participants from around the world.

Gautam won the award for making a major research advancement in measuring residence time distribution (RTD) of food materials processed in a twin-screw extruder. Residence time determines the extent of physical-chemical changes that affect the quality and characteristics of a food product. Gautam's RTD method, based on electrical conductivity of the product, is faster, more accurate, continuous (on-line), and simple compared to commonly used dye-tracing methods. His method uses an extruder die, a 10 ohm resistor, a data logger, 15 volt power supply, and a computer.

Gautam's research is supported by Alaska Sea Grant, under the supervision of Gour Choudhury. He is working toward a Ph.D. in food engineering at UAF.

Sea Grant Knauss Fellowship

Applications for the 1998 Sea Grant Knauss Fellowship are due in the Alaska Sea Grant office by September 5, 1997. The national internship program provides students a year's experience on a Congressional staff or with an Executive agency working on marine issues. It is open to all graduate students with marine scientific or policy background. The fellowship allows students to share their expertise with policy makers in Washington, D.C., and provides a firsthand look at how science is used in the policy arena and how decisions are made.

House Passes Sea Grant Bill 422-3

On June 18, the House of Representatives voted 422-3 to pass the bill reauthorizing Sea Grant for three years. In the Senate, the bill authorizing Sea Grant received committee markup on June 19 and its future looks good. The two bills are similar, and few difficulties are expected when the House and Senate hold conference later this year.

Workshop on Community Development Quotas

MAP agent Rick Steiner is organizing a workshop for Western Pacific fishery managers on the successes of the Alaska Community Development Quota program (CDQ). The recently authorized Magnuson-Stevens Fishery Conservation and Management Act states that the Western Pacific Regional Fishery Management Council may establish a community development program to help channel fisheries revenues to impoverished Pacific island communities. Since the Alaska program is the only CDQ plan operating in the United States, Western Pacific fishery managers are seeking perspectives and ideas from Alaska managers. The workshop will be held in Honolulu August 14-15.

The Western Pacific fishery management region includes Hawaii, American Samoa, Guam, and other U.S. islands in the Pacific. To be eligible for the Western Pacific community development program, residents must be descended from indigenous people who used traditional fishing practices, and lack harvesting and processing capability to substantially participate in fisheries. The Western Pacific Council currently has fishery management plans for lobster, bottomfish and seamount groundfish, and pelagic fisheries including tuna.

In Alaska, the CDQ program allocates a percentage of the Bering Sea fisheries resources, such as pollock, to several village communities in coastal western Alaska. Until five years ago, revenues from the rich Bering Sea fisheries were bypassing those coastal communities entirely. Now that the CDQ program has been implemented, residents can fish for their quota or sell it to the larger fishing companies. The Alaska CDQ program was implemented before it became part of the law--only after the recent Magnuson-Stevens Fishery Conservation and Management Act passed did the CDQ program become authorized in Alaska.

Presenters at the workshop in Honolulu will include Don Mitchell, who helped create the Alaska CDQ program; Mary McBurney, executive director of the Western Alaska Fisheries Development

Association; Jon Zuck, advisor to Norton Sound Development Corporation; and Julie Anderson, Alaska Department of Community and Regional Affairs. Rick Steiner will moderate a panel discussion at the workshop.

Steiner and MAP video producer Deborah Mercy are also creating a program on Alaska CDQ for the Resource Issues Forum series, to be aired on TV later this year.

Diving Safety Workshop in Sitka

To find out how Sea Grant can most effectively contribute to dive safety education in Alaska, Sea Grant and the Alaska Marine Safety Education Association will hold a fact-finding meeting at the Harrington Centennial Hall in Sitka on Friday, July 25. With an increase in recreational scuba diving and commercial diving for sea urchins and sea cucumbers in Alaska, there is an increased need to educate divers about safety.

The meeting will cover recreational dive safety, commercial dive safety, and dive accident emergency response needs. University of Michigan professor Lee Somers, one of the nation's leading experts on dive safety and emergency response, will give presentations on mixed gas diving and other recreational dive techniques, and dive safety training and response procedures for emergency rescue teams. While in Alaska, Somers will give a seminar on dive rescue procedures and how to build a rescue team in Ketchikan on July 23, and repeat the presentation with the Sitka Fire Department scuba dive rescue team on July 26.

John Fetterman, Marine Patrol Officer with the Maine Department of Marine Resources, will also attend the fact finding meeting. In cooperation with business people involved with the urchin and scallop harvests in Maine, Fetterman helped develop a successful three-day dive harvest safety course run by the Southern Maine Technical College. Since the course began, there have been no deaths in the Maine urchin-scallop dive harvest industry. Seven deaths occurred the year before safety training began.

Other topics include industrial diving safety, dive accident response protocols, and dive charterboat safety. Attendees will include sea urchin harvesters, recreational divers and charter operators, state trooper and fire department dive rescuers, ADFG and NMFS divemasters, and scuba safety specialists from OSHA and NIOSH. For more information, contact Kurt Byers at FNKMB1@uaf.edu, (907) 474-6702.

PSP Information on the Web

In response to a deadly outbreak of paralytic shellfish poisoning on Kodiak Island last month, Alaska Sea Grant alerted the news media to the availability of the MAP *Alaska's Marine Resources* issue on PSP, phoned key agencies in Kodiak to offer the free publication, put a printable version on the web, and posted PSP emergency treatment on the web. On Sea Grant's recommendation, reporters from the *Anchorage Daily News* interviewed SFOS faculty Ray RaLonde and Gerry Plumley as sources for a front page article and editorial on the PSP problem.

The Marine Advisory publication is the best available on PSP in Alaska--*Paralytic Shellfish Poisoning: The Alaska Problem*, October 1996 issue of *Alaska's Marine Resources*, edited by Ray RaLonde, 20 pp. The PSP emergency treatment excerpt on the web is from the Sea Grant book *Beating the Odds on the North Pacific: A Guide to Fishing Safety*. Visit Sea Grant's PSP page at http://seagrant.uaf.edu/issues/PSP/psp_page.html.

Sustainable Fisheries Meeting

What will implementation of the amended Magnuson-Stevens Act really mean for fishing in the twenty-first century? Tulane Law School in New Orleans, Louisiana Sea Grant, and others are sponsoring a fisheries conference September 5-6, 1997, called "The Magnuson-Stevens Act: Sustainable Fisheries for the 21st Century? A Critical Examination of Issues Associated with Implementing this New Federal Fisheries Law." The entire agenda, with registration form and hotel contacts, is accessible at <http://www.law.tulane.edu/ildi/brochtxt.htm>.

The audience for the conference is lawyers, resource managers, fishermen, conservationists, scientists, academics, and students. For more information, contact Sharon Stevenson at the Tulane Law School, (504) 865-5925 or srsteven@law.tulane.edu.

Ship Crew Training

The Seafarer's International Union of North America has opened an office in Anchorage for the purpose of recruiting and training Alaskans for employment aboard U.S. flagged merchant vessels. They hope to recruit about 36 Alaskans per year into the training program. The union represents unlicensed shipboard

crew to work on cargo and tanker ships, and offers training for Coast Guard license tests.

For eligible applicants the union offers three months training in Piney Point, Maryland, and two months work aboard a merchant vessel, followed by another three months of special interest training at Piney Point. The union also assists trainees in getting employment. The program pays for transportation from Anchorage to Maryland, tuition, a monthly stipend, and room and board--the only expense for the trainee is transportation to Anchorage. The recruitment and admission period is open year round. Applicants must be 18 to 25 years old. Contact Harold Holten at Seafarer's International Union of North America, 721 Sesame St., Anchorage, AK, phone (907) 561-4988.

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EVOS Restoration Reserve Funds

The *Exxon Valdez* Oil Spill Trustee Council is seeking public input on uses for the Restoration Reserve fund. The reserve fund, which the council guesses will total \$150 million by 2002, could be available for research and monitoring, habitat protection, restoration, or all three.

The council wants ideas and comments on how reserve money should be used, and how to govern the fund. The EVOS public advisory group will consider the comments during sessions to be held in November and December, and they will release a list of options for further public comment in January 1998.

This is an important opportunity for the research community. Submit your written comments by October 1, and let the council know if you want to be part of the reserve planning process. Send comments to the EVOS Restoration Office at 645 G St., Anchorage, AK 99508, fax (907) 276-7178, email kerih@oilspill.state.ak.us. --Information from Restoration Update Vol. 4 No. 3, newsletter of the *Exxon Valdez* Oil Spill Trustee Council.

Editorial: Don't Let the Opportunity Slip By

The EVOS Trustee Council had the foresight to set aside a portion of the settlement funds to establish a restoration reserve which will accumulate to a value of about \$150 million. Again, acting with foresight, the EVOS Trustees and staff are contemplating how to most wisely use this fund after 2001 and what administrative structure and processes should be adopted. They are seeking guidance.

I do not believe that all uses of our coastal ocean will (or should) cease, and therefore I believe that the greatest hazard to the future of our coastal and marine resources is our ignorance of the ecosystems and processes. Assuring the long term wise use and enjoyment of these resources is dependent on the knowledge we are able to gain. The \$150 million restoration reserve could be used to address the needs for knowledge if sufficient interest is expressed. I encourage the community interested in the future of our coastal ocean resources to express their feelings to the EVOS Trustees and to provide guidance for an administrative mechanism that will ensure wise decision-making.

Ron Dearborn, Director
Alaska Sea Grant College Program

Sea Grant Funds Research on Invader Species

Sea Grant recently provided a \$172,000 grant to the Prince William Sound Regional Citizens' Advisory Council to study invader species in PWS. Researchers from UAF and the Smithsonian Environmental Research Center will look for non-native species in water from oil tanker ballast in PWS, study survival of the organisms, and examine effectiveness of at-sea ballast exchange. Also contributing funds for the two-year research project are RCAC, Alyeska Pipeline Service Company, U.S. Fish and Wildlife Service, and Oregon State University. Although tankers have been entering PWS for 20 years, this is the first time scientists have studied species that come in with the ballast water. Researchers expect to find varying levels of survival in introduced species of fish, crabs, plankton, and plants. Some invaders likely coexist peacefully with native species, while others could have a serious impact on Alaska waters.

Gore Award

The Seafood HACCP Alliance, including National Sea Grant, the Association of Food and Drug Officials, and the U.S. Food and Drug Administration, will receive the Vice President Al Gore Hammer Award on September 22 in Gatlinburg, TN, at the meeting of the Association of Food and Drug Officials of the Southern States. The award is given by Vice President Gore to partnerships that make a significant contribution to the nation.

Alaska Sea Grant has played a significant role in national Seafood HACCP Alliance efforts. In 1996-97 Alaska Marine Advisory seafood experts Don Kramer, Chuck Crapo, and others taught 19 HACCP instructor and industry workshops to 400 people to help produce safe, wholesome seafood for consumers worldwide. Kramer is on the steering committee for the National Seafood HACCP Alliance,

responsible for conducting training [workshops](#) in Alaska and nationwide. HACCP procedures (hazard analysis and critical control point) will be required by law in the United States after Dec. 18, 1997.

According to FDA commissioner David Kessler, HACCP is the most fundamental shift in food inspection that the United States has seen in the past 50 years. HACCP is becoming the world standard for food safety--it is required by the European Union and is used widely in Canada. HACCP checks food at all stages from raw product through processing to final product, differing from U.S. traditional inspection which checks products only after they have been processed. The USDA has also issued HACCP guidelines for beef and poultry industries, to be phased in over a four-year period ending in 2000.

Alaska Program Impacts Sea Grant Week

Every two years the nation's Sea Grant community gathers at Sea Grant Week to reflect on accomplishments and plan for the future. Alaska Sea Grant was well represented at the 1997 Sea Grant Week held in Madison, Wisconsin, last month. The two program sessions at the meeting were on ecosystem issues and seafood technology. Terry Quinn, Don Kramer, Chuck Crapo, and Kevin O'Sullivan of ASMI joined the Sea Grant staff in presentations on these topics, which were well received by the nation's Sea Grant community. Ron Dearborn, president of the Sea Grant Association, presided over the week's meetings and also presented awards; the SGA Partnership Award went to Milton Shedd (Hubbs-Sea World Research Institute); the SGA Distinguished Service Award went to Maxwell Doty (posthumous); and the 1997 SGA Award went to Frederick Hutchinson (retired president of the University of Maine). Alaska Sea Grant coordinator Brenda Baxter played a major role in planning the national meeting.

Beyond Beef--Program Helps Train Kids in Marine Technology

The National Sea Grant media relations office recently released to nationwide media a story about Alaska Sea Grant aquaculture specialist Ray RaLonde's FFA work. RaLonde is the superintendent of the annual Future Farmers of America (FFA) Marine Technology Program academic competition that takes place each spring in Alaska. Alaska is the first state to establish such a program under FFA's new initiative to expand beyond agriculture. The competition includes topics in marine safety, fishing technology, marine science, and aquaculture. RaLonde tells classroom teachers about the content of the competition exams and activities, and provides instructional materials. The program has expanded from 16 student participants in 1992 to nearly 100 students in 1997. The FFA national office has requested information about RaLonde's Marine Technology Program so they can use it as a model to spread the program nationwide. RaLonde and Alaska Sea Grant Marine Advisory seafood specialists plan to expand the Alaska competition to include seafood quality judging.

Dive Safety Meeting Spurs State Action

The Sitka dive safety workshop cosponsored by Sea Grant and the Alaska Marine Safety Education Association held in July has already borne some fruit. Spurred by what he heard at the workshop, Matt Anderson of Alaska Emergency Medical Services has drafted a dive emergency response protocol for Alaska. He also organized a 90-minute training session on dive injury management for the Alaska EMS Symposium, to be held in Anchorage this November.

Michigan Sea Grant dive safety expert Lee Somers, who was a featured presenter at the Sitka workshop, has enthusiastic praise for the Sitka gathering: "Alaska Sea Grant has an excellent opportunity to play a very important role in all aspects of diving. This is ground floor stuff. New! Exciting! Needed!" A printed proceedings of the workshop will be available this fall. For information, contact Kurt Byers, 474-6702, FNKMB1@uaf.edu.

Bycatch Book

Fisheries Bycatch: Consequences and Management. Twenty-five extended abstracts and a panel discussion on bycatch management are included in this book, the proceedings of a 1996 American Fisheries Society symposium on bycatch. The AFS meeting was convened because of increasing concern about bycatch of fishes, crustaceans, mammals, and turtles in commercial and recreational fisheries. The meeting helped define the impact on target and bycatch species, and the socioeconomic consequences of reducing bycatch. Research contributions include fishery bycatch estimation, impact, and mitigation. 160 pp., \$12.00, ISBN 156612-0489. Available from Alaska Sea Grant, (907) 474-6707.

Mammal Guide Second Edition Just Released

After selling 14,000 copies of Kate Wynne's *Guide to Marine Mammals of Alaska*, Alaska Sea Grant announces the availability of the second edition. This is the same great book, with some changed illustrations and a few updates. It is the winner of eight book awards. 75 pp., \$20.00, ISBN 156612-0446. Available from Alaska Sea Grant, (907) 474-6707.

The outside back cover of the mammal guide displays quotes from the book's admirers: "Awesome field support. Used extensively with the lay public. Best I've used."--Steve Vogel, Curator, Cabrillo Marine Aquarium, San Pedro, CA.

"I have thoroughly enjoyed both reading this book and using it as a reference. My fourth grade whale enthusiasts love it."--Annie Garretson, Pioneer Elementary, Colorado Springs, CO.

"We pass the book around to people from the four corners of the earth. Thanks for helping us help visitors to Alaska get a better appreciation for the wonderful life in the ocean."--Jean Tauck, Naturalist Lecturer, Ventura, CA.

Guide to Juvenile Salmonids

Field Identification of Coastal Juvenile Salmonids, by W.R. Pollard, G.F. Hartman, C. Groot, and P. Edgell, Harbour Publishing, prepared by Canada Department of Fisheries and Oceans and MacMillan Bloedel Ltd. The guide was written by fisheries biologists from government and industry to make available a simple, easy to use system for identifying ten species of juvenile salmon, trout, and char in the field. It is printed on waterproof paper, with color illustrations and photos. The book comes with a fish-viewing bag tucked in the back flap. 32 pp, \$12.95, ISBN 155017-1674. Available from Harbour Publishing, fax (604) 883-9451, harbour@sunshine.net.

Sea Grant to Create Web Site for AMSEA

Alaska Sea Grant will provide expertise in web site design, construction, and management to the Alaska Marine Safety Education Association (AMSEA). The AMSEA web site will have information about marine safety training classes, AMSEA instructors, educational materials, frequently asked questions, and links to other web sites on marine safety. Sea Grant communicators Dave Brenner and Carol Kaynor will set up the site, and teach AMSEA staff how to maintain it after the site is up and running this fall.

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Harbor Seal Health

Kerrie Beckett is a graduate student working on professor Mike Castellini's Sea Grant funded project, "Condition and Health of Alaskan Seals and Sea Lions." Beckett's research for her master's degree will relate immune response to health in harbor seals. She will measure the success and survival rates of marine mammals being cared for in a rehabilitation laboratory.

Beckett has a good background for this kind of work--she spent the last three years managing a marine mammal rehabilitation lab in Seward, with Anchorage veterinarian Joyce Murphy. She worked with several kinds of mammals, among them the harbor seal, fur seal, Dall's porpoise, walrus, and sea otter. Some animals were rehabilitated in Seward and released in the wild, while others were moved to rehabilitation labs in the Lower 48. One of her tasks this past summer was to teach an orphaned harbor seal pup how to catch and eat fish. Beckett's marine mammal experience also includes her senior thesis on polar bears and beluga whales, at the University of Montana.

Beckett is in her second semester of a UAF graduate program in marine biology, and she also has plans to get a PhD. She is taking courses at the Fairbanks campus during fall and spring semester, and in spring 1998 she will return to Seward where she will do research. She looks forward to working at the SeaLife Center marine mammal rehabilitation lab, which will have three holding tanks and a quarantine area.

At the new [Alaska SeaLife Center](#), research will increase the demand for the kind of data Beckett plans to collect, on the medical and physiological status of wild pinniped populations. As part of Mike Castellini's Sea Grant mammal health project, a publication will be produced to help fill the need--a single document with information on blood chemistry and body condition of seals and sea lions in Alaska. Castellini is research director for the SeaLife Center.

New Sales Manager

Alaska Sea Grant has a wealth of educational materials, and Sherri Pristash knows everything there is to know about how to get those books, brochures, posters, and videos to you when you need them. As Alaska Sea Grant's new sales manager, Pristash is also well acquainted with the people who make up the audience for Sea Grant publications. She has frequent contact with retail outlets, fishermen, schools, libraries, and others who use the materials, on the phone, in person, on the Internet, and through the mail. People enjoy calling in book orders to Pristash because they know she is always friendly and will give them the information they need. Pristash has worked for Sea Grant since 1992 when she started as distribution clerk. In addition to her skills on the job, Pristash is an accomplished house builder, gardener, and sprint dog musher, and she serves on the board for the Alaska Dog Musers' Association.

CDQ Workshop

UAF MAP agent Rick Steiner organized a workshop for Western Pacific fishery managers on the Alaska Community Development Quota program (CDQ), held in Honolulu August 14-15. The Western Pacific Regional Fishery Management Council is considering starting a CDQ program to help channel fisheries revenues to impoverished Pacific island communities. WestPac fishery managers sought ideas from managers in Alaska, where the only CDQ plan in the United States has been operating for five years. The largest and most valuable fishery in the WestPac region is the pelagic longline fishery, primarily for yellowfin tuna and broadbill swordfish--the 1996 Hawaii catch in this fishery was 23 million pounds at \$46 million.

The workshop was attended by 30 people, including the council's Native and Indigenous

Rights Advisory Panel representing Hawaii, Guam, the Northern Marianas, and Western Samoa. The issue of who would qualify in a CDQ program was a central theme. After several hours of discussion, the group concluded that the council needs to be very clear about the social and economic objectives for fisheries management, then decide if a CDQ program would be helpful in achieving the objectives. If they choose a CDQ program, Alaska managers will have further opportunity for inter-regional cooperation.

Pennington Gets Award

The U.S. Coast Guard recently presented Hank Pennington with the Meritorious Public Service Award, for contributions to the safety and viability of the Alaska fishing industry over the past 20 years. The Coast Guard cited Pennington's accomplishments--he was founding chair of the Alaska Marine Safety Education Association, he provided the framework for the Coast Guard to implement safety training under the Commercial Fishing Industry Vessel Safety Act, he trained more than 1,000 fishermen in the new regulations, and he created six award-winning videos on maritime safety and survival. The Coast Guard also applauds Pennington for helping to form a safety partnership between industry and the Coast Guard, and for working with the fishing industry to remove foreign fishing fleets from the U.S. Exclusive Economic Zone, a national priority. Pennington retired in June 1997 from the UAF Marine Advisory Program.

Web Additions for MAP

Alaska Sea Grant recently added Worldwide Web pages with the Alaska HACCP workshop schedule, registration form, what processors can expect when FDA inspectors visit, and links to other HACCP web sites. In addition, several new MAP agent pages are on the web, with profiles explaining how they help make the world a better place working for UAF MAP. Photo galleries accompany the MAP agent pages. See <http://www.uaf.edu/map/haccp.html> for the HACCP page, and <http://www.uaf.edu/map/staff/kramer.html> for MAP leader Don Kramer's agent page.

Survey Results

In 1995-96 Sea Grant surveyed Alaska's resident nearshore commercial fishermen, groundfish fishermen, and owners of seafood processing plants. Opinions were sought on subjects ranging from whether the ban on salmon farming should be lifted ("no") to whether more should be done to encourage shellfish farming ("yes").

Alaska commercial fishermen returned 507 out of 6,000 surveys. They asked for workshops on seafood marketing, and training to use new shipboard technologies and computers. More than half think the state's fisheries are well managed, and many cited overfishing as the biggest threat to long-term abundance of Alaska's fish stocks. They are interested in books on how to return nontarget species safely to the water, new regulations, marketing, net mending, and use of navigation and other electronic equipment.

Complete results of the three surveys are available at the Alaska Sea Grant office. *Alaska Commercial Fishermen Survey Results*, 81 pp; *Alaska Groundfish Fishermen Survey Results*, 38 pp.; *Alaska Seafood Processor Survey Results*, 23 pp. FREE from now through Dec. 31, 1997. Call (907) 474-6707.

New Halibut Brochure

To help educate the public about halibut, Alaska Sea Grant has produced a colorful, six-panel brochure with information about Pacific halibut--how to catch it, ship it, and prepare delicious meals from it. The brochure also has facts about halibut biology, importance in the commercial fishery, management, and weight records. It is suitable for use by charter boat companies, and in bait shops, seafood stores, and schools. [Flat Out Facts about Halibut](#), by UAF MAP agent Doug Coughenower, and Cal Blood of the North Pacific Halibut Commission. Available at the Sea Grant office, (907) 474-6707, 25 cents each.

Charter Log Newsletter

See the September 1997 *Charter Log newsletter* for articles on "Management of the Guided Sport Halibut Fishery," and "ADA Impact on Boats and Boating Facilities." Homer MAP agent Doug Coughenower writes the newsletter for the Alaska charter industry.

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Fishing Workshops in Sakhalin

MAP agent Rick Steiner taught several fisheries workshops in Russia last month. Steiner was invited to Sakhalin to teach sessions on commercial fisheries techniques and management, sponsored by the UAA American Russian Center and funded by the U.S. Agency for International Development (USAID). He presented five day-long seminars in the cities of Aniva, Korsakov, Nevelsk, and Yuzhno-Sakhalinsk. With the aid of an interpreter, he discussed gear used in Alaska fisheries, management structure, financial structure, catch level, and conservation.

The fisheries in Russia are undergoing an extraordinary transition, as are all industries there. The information from Steiner's sessions can help the Russians build sustainable fisheries with good management practices, which at the same time will promote conservation of Alaska fisheries.

Each Sakhalin workshop was attended by 30-60 people, including company executives, fishermen, government inspectors, and other business people. At Steiner's suggestion, several of the Russians are making plans to attend Fish Expo 97 in Seattle later this month to expand their knowledge of American fisheries.

Sakhalin officials complimented Steiner on presenting the most successful workshops they have sponsored to date, possibly the first fishery technical training conducted for Russians by an American. The Magadan fishing industry has also shown interest in inviting Steiner to conduct workshops.

Short-Tailed Albatross

MAP agent Rick Steiner is traveling this month to Torishima, Japan, to gather information for an article he's writing on the endangered short-tailed albatross for *International Wildlife*. Torishima, in the Izu Islands, is the prime breeding ground for the short-tailed albatross. Hiroshi Hasagawa, world expert on albatrosses, will accompany Steiner and provide photographs for the article. Steiner got interested in the albatross in 1986 when a fisherman gave him an unidentified, dead banded albatross caught near Middleton Island. Steiner handed it over to Vivian Mendenhall at USFWS, who identified it as a short-tailed and tracked it to Japanese bird experts.

Only 700-800 short-tailed albatrosses are alive today, once the most abundant albatross in the North Pacific. From the 1890s to the 1930s it was exploited for ladies' hat trim and quilt stuffing. In the late 1930s the short-tailed albatross was thought by some to be nearly decimated, and laws were enacted to protect it. The timely eruption of a volcano on Torishima in 1939 may have saved the short-tailed albatross from extinction, by preventing an onslaught of "feather hunters" who planned one last hunt before protection laws were enforced. Ironically, the volcano that saved them has also degraded the bird's nesting habitat.

Fishery Stock Assessment Symposium

The symposium "Fishery Stock Assessment Models for the 21st Century," held last month in Anchorage, attracted 167 people from around the world. Organizers believe it was the largest meeting ever held about the topic of stock assessment modeling. Co-chair Fritz Funk, of Alaska Department of Fish and Game, dedicated the symposium to the memory of scientist Ian Fletcher, who had touched the lives of many of the participants. Fletcher was professor of fish population dynamics at the University of Washington during the 1970s and 1980s.

The papers and posters presented at the symposium covered data conflicts and model specification, stage-structured applications, ocean ecosystems, and harvest policy. The high

interest level by the participants was demonstrated by lively discussions in the meeting rooms, in the halls, and at social events. Sea Grant coordinator Brenda Baxter oversaw plans and logistics for the meeting. Cosponsors were UAF, Alaska Department of Fish and Game, North Pacific Fishery Management Council, and International Pacific Halibut Commission. A peer-reviewed proceedings with up to 70 contributions will be published in 1998.

National Ocean Sciences Bowl Coming Up

Alaska high school students will compete in a regional National Ocean Sciences Bowl competition in Seward, February 28, 1998. The National Ocean Sciences Bowl (NOSB) is a tournament-style academic competition that will challenge high school students' knowledge of biology, chemistry, geology, physics, history, and economics of the ocean, and ocean-related current events. Teams of students will answer rapid-fire questions to qualify for the national bowl in Washington DC in April 1998. The winning team will travel to Lisbon, Portugal, to participate in Expo 98, observing the International Year of the Ocean.

The Alaska event is one of sixteen regional Ocean Science bowls being held around the country. Judy McDonald, Seward Marine Center, and Jim Pfeiffenberger, program coordinator at the Alaska SeaLife Center, are organizing the competition in Alaska. NOSB has funding from NOAA, NASA, NSF, and US Navy Office of Naval Research and Oceanographer of the Navy.

NOSB is designed to increase the awareness of high school students and the general public of the critical value of ocean research. The goal is to recognize excellence in students interested in ocean studies, and help them become the next generation of oceanographers and marine scientists and leaders. If you are interested in being involved in the regional bowl competition contact Judy McDonald at (907) 224-5261, FNJMI@uaf.edu. She needs experts who will help judge the responses, and other volunteers.

Sea Urchin Meeting

The Alaska sea urchin fishery was the focus of a September workshop in Petersburg, organized by MAP agent Brian Paust and Alaska Department of Fish and Game commercial fisheries specialist Doug Woodby. The purpose of the workshop "Urchin Research and Management in North America: Implications for Alaska" was to help ADFG develop management strategies for the red and green sea urchin fishery. Experts from Maine, Oregon, Washington, and British Columbia made presentations to an audience of about 85 divers, buyers, processors, and managers. The Alaska sea urchin fishery, primarily a dive fishery, officially opened 2-3 years ago. It is currently a winter-spring fishery, but could expand to year-round. The market is predominantly the Pacific Rim, where the product is called uni. Some say the Alaska sea urchin fishery has the potential worth of \$75 million per year.

Fishlines is a monthly in-house newsletter reporting Alaska Sea Grant activities to staff, students, and principal investigators of Alaska Sea Grant and the Marine Advisory Program, and staff of the School of Fisheries and Ocean Sciences. For more information contact Sue Keller, (907) 474-6703, FNSK@uaf.edu.

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