

A Partnership Approach

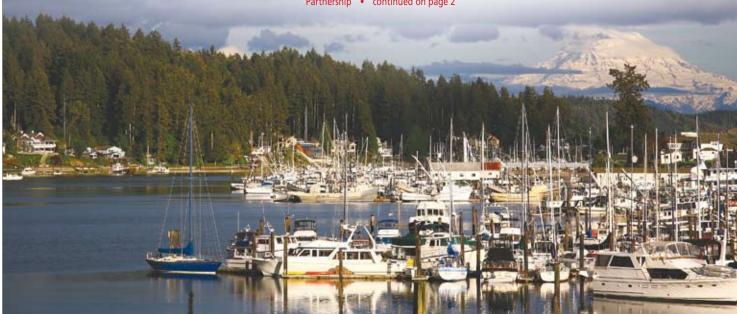
Washington Sea Grant Takes an Active Role in the New Action Agenda for Puget Sound

In 2007, Puget Sound's slow but steady decline became the focus of renewed rescue efforts. A new entity, the Puget Sound Partnership, was established by Governor Christine Gregoire and the State Legislature, specifically to mobilize communities, governments, tribes, industries and organizations to work together to create a comprehensive Action Agenda for saving Puget Sound.

The new Partnership is tasked with completing an Action Agenda by December 1 of this year. The Action Agenda will serve as a regional roadmap for restoring and protecting the Sound. It will look at several important issues: what counts as a healthy Puget Sound, what are the Sound's biggest threats, which actions must be taken to ensure a healthy Puget Sound by 2020 and, perhaps the most difficult question, where to begin.

"Keep in mind that the Action Agenda is not solely the property of the Puget Sound Partnership," says Pete Granger, Washington Sea Grant's Program Leader for Marine Advisory Services. "Although the Partnership is coordinating the process, the final agenda will crafted by — and belong to — us all," he says.

To ensure that the Action Agenda is accepted and successfully implemented, the Partnership must engage literally hundreds of involved parties, ranging from small, localized outdoor clubs and homeowner associations to huge, multi-faceted state and federal agencies. The Partnership must also coordinate the activities of this rich roster of helpers, to avoid duplication of individual efforts — a common shortcoming of previous Soundwide plans. A recent request by the Partnership for inventories from agencies and organizations engaged in Sound-related activities drew hundreds of responses, including one from Washington Sea Grant.

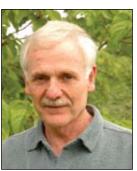




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Action Agenda advocates (from top): Penny Dalton, Teri King, Eric Olsson, Jeff Adams, Pete Granger.

"Our program has a dual role in this massive undertaking," says WSG Director Penny Dalton. "The findings from the many research projects we've funded are furthering everyone's understanding of the Sound's natural and human-influenced processes," she explains. "Equally important, though, are our outreach efforts. They are helping people to understand the issues, get involved in shaping the Action Agenda and, ultimately, become positive forces in implementing the Agenda to protect our Sound."

Outreach could easily be Teri King's middle name. In her position as WSG Marine Water Quality Specialist, King helps coordinate efforts to meet the water quality needs of her constituents in Hood Canal and South Puget Sound. Her record of accomplishment in the Hood Canal watershed extends back 17 years, to the early days of the state's Puget Sound Water Quality Authority (which, in 1991, became the Puget Sound Action Team and, earlier this year, was incorporated into the Partnership). King was hired originally to provide technical assistance and education support under the 1989 Puget Sound Management Plan.

King is well known throughout Puget Sound and across America for her innovative programs on shellfish protection and the proper installation, operation and maintenance of on-site sewage systems. She and assistant Janis McNeal have hosted numerous workshops and mounted widespread campaigns on "Blue Thumb Gardening" and "Simple Techniques to Reduce Nutrient Runoff." Last year, they organized a "Sound Science" lecture series featuring experts from the University of Washington as guest speakers on important topics pertaining to Puget Sounds.

King's active presence in Mason County has not gone unnoticed. In 2007, King was appointed to the Puget Sound Partnership's 27-person Ecosystem Coordination Board, representing Hood Canal. She now devotes a portion of her time to advising the Partnership's Leadership Council, helping to identify research and outreach needs for protecting the canal's vulnerable aquatic ecosystem.

In Kitsap County, WSG Marine Water Quality Specialist Jeff Adams began working under the auspices of the Puget Sound Action Team. Today, with funding from the Partnership and other sources, Adams routinely hosts water quality events and workshops for residents of what is considered the most rapidly developing of the 12 Puget Sound counties. Most recently, he worked with Kitsap County's Department of Community Development to cosponsor several open houses on the County's east shoreline. These events equip shoreline landowners and users with some of the resources and tools they need to become better stewards of Kitsap County's extensive shoreline.

Adams is now facilitating periodic meetings of the Kitsap Nearshore Coordination Group that allows colleagues from agencies, tribes, non-profits and other organizations to exchange information, coordinate projects and hear from regional experts — all in support of a healthier Puget Sound. Many of the members of this group also are participating in the formation of a West Sound Watersheds Council. Adams helped organize a summit to explore the new Council's relationship to the Partnership and to assist in crafting elements of the Action Agenda that specifically address issues along Kitsap's portion of the Sound.

Other WSG staff routinely address Puget Sound issues in support of Partnership goals. As part of his state-funded position as WSG's Small Oil Spill Prevention Education Specialist, Eric Olsson works with the Washington Clean Marina Partnership to recruit owners and operators of marinas and boatyards to voluntarily employ best management practices, recycling and other water quality measures to keep petroleum products and other pollutants from entering the Sound. In return, the owners and operators gain recognition as environmental leaders and stewards of our waters. They also obtain Clean Marina certification for their efforts.

Olsson provides one-on-one oil spill prevention training to fishing boat operators throughout Puget Sound during intensive WSG-sponsored fishing vessel safety workshops. Serving as chair of the Pacific Oil Spill Prevention Education Team gives him the opportunity to provide guidance in eliminating spills from spill-prone boating and marina operations throughout Puget Sound and to promote the "Spills Aren't Slick" spill prevention campaign.

As field staff for the Partnership, King, Adams and Olsson formulate their outreach activities based on specific objectives and outcomes. "They are expected to meet or exceed these objectives — and they consistently do," says Pete Granger. The three employ various evaluation techniques, such as follow-up surveys, testimonials and metrics-gathering and analysis.

Other Sea Grant specialists and field staff plan their activities carefully to help solve tough challenges facing Puget Sound, such as contaminated stormwater runoff, nearshore habitat degradation and introductions of aquatic invasive species. Evaluations suggest they are effectively motivating others to make significant differences to the Sound's overall wellbeing.

"Washington Sea Grant is poised to respond to the Action Agenda's outreach and education components with new field programs and specialists, as additional funding becomes available," says Granger. "We look forward to continued collaboration with the Partnership throughout 2008."

Water is Whatcom's Wealth

By Sue Blake, WSG Marine Water Resource Educator, Whatcom County

This is the third in a series of essays, exploring the opportunities and issues addressed by Washington Sea Grant specialists in offices throughout western Washington.

Whether exploring tide pools on the Olympic Peninsula, digging for razor clams at Ocean Shores or looking for agates on pebbly beaches, some of my fondest childhood memories are intertwined with the marine resources of Washington. This connection may have been inevitable, growing up, as I did, in the western part of the state; however, it was probably aided by many relatives involved in the commercial fishing industry and a father who instilled in me a deep sense of wonder and respect for this amazing part of the planet.

Early in 2007, when I learned about the opportunity to work for Washington Sea Grant and WSU Extension, focusing on water resources, I leapt at the chance. It was an unexpected opportunity to combine my more than 20 years of experience working primarily on freshwater issues in Whatcom County with a life-long fascination with the marine world.

From the glaciated peak atop 10,778-foot Mount Baker to the 134 miles of marine shorelines at the county's western border, Whatcom is rich with marine and freshwater resources. Precipitation here ranges from 30 inches at the coast to over 150 inches in the forested cascades. The volume of snow and ice on Mount Baker is greater than that of all other Cascades volcanoes (with the exception of Mount Rainier) combined.

One of the county's major river systems, the Nooksack River meanders through extensive forests, thousands of acres of lowland farm fields and several small cities before reaching its final destination in Bellingham Bay. Over 110 lakes dot the landscape, with one of the largest, Lake Whatcom, serving as the source of drinking water for Bellingham, the county's largest city. A large, generally shallow aquifer lies beneath much of the northwestern portion of the county.

Despite the seeming abundance of water, the county's public water systems and agricultural enterprises are struggling to meet current and future water supply needs. Low summer stream flows and habitat losses contribute to challenges in restoring threatened and endangered species such as chinook salmon and bull trout. Water quality problems

plague marine and freshwater systems and the plants and animals that rely on them. The county is also uniquely challenged by its shared international border with rapidly growing British Columbia. Marine and freshwater systems straddle the border between the U.S. and Canada, adding complexity to regulatory and management strategies for these resources.

Whatcom County has seen extensive population growth in recent years. Our current population of 185,000 is expected to increase by more than 10 percent by 2020. Accommodating this growth while protecting the systems upon which we rely will be our biggest challenge in coming years. Luckily, Whatcom County also abounds in many dedicated community members, non-profit organizations, and governments committed to meeting this challenge.

As I conclude my first year as a member of the Marine Advisory Services staff at Washington Sea Grant, I look forward to continuing to work with many of these individuals and groups. I will build on my past experience and collaborative working relationships to enhance community knowledge about the value of the resource and to address the important issues we face in protecting it. Among the specific projects I will be working on:

- Supporting volunteer programs, such as Master Gardeners and Beach Watchers/Watershed Masters, to help train community members in implementing on-the-ground actions;
- Evaluating needs associated with expanding volunteer monitoring programs, especially in areas where limited data exist;
- Implementing a real-time water quality monitoring program in the Tenmile Creek watershed;
- Exploring the establishment of a regional education network;
- Examining needs and conducting classes with K-12 students;
- Working with others to conduct a "state of the resource" conference in 2009; and
- Helping update economic information on the commercial fishing industry in Whatcom County.

For more information on these or related topics, please contact me at 360.676.6736 or *sgblake@wsu.edu*.



Sue Blake

Field Notes

s part of WSG's Commercial Fisheries Trade and Marketing Assistance effort, Marine **Advisory Services Program** Leader Pete Granger is helping the Lummi Nation Tribal Ventures program with feasibility studies and planning for a new retail seafood market on the reservation that will sell tribal fish and shellfish products exclusively. For more information: 206.685.9261 or pgranger@u. washington.edu.

VSG's Marine Education
Coordinator Sarah
Fisken and MAS Program
Leader Pete Granger are
exploring a partnership
with Northwest Indian
College's financial literacy
program. The program
will offer business training
to qualifying tribal
fishermen through the
federal Intensive Technical
Assistance program for
Lummi, Quinault, Quileute
and Makah tribes.

eff Bowman is WSG's new Science Writing Fellow. He is a senior at the University of Washington, studying biological oceanography, and plans to pursue a doctoral degree at the UW. Readers may recall Bowman's cover story on ships' ballast water technologies in the previous issue of Sea Star. "I'm pleased at the prospect of writing more for Sea Star and other Washington Sea Grant publications," says Bowman. "I've already learned a lot about strengthening my science writing skills."

ook for Marine Education Coordinator Sarah Fisken at the Fourth Annual Wild Keta Salmon Cookoff on May 3 at Seattle's Fishermen's Terminal. At this year's event, local fishermen, restaurateurs and barbecue aficionados will compete for prizes in a cooking competition featuring wild keta salmon, albacore tuna, salmon burgers, and seafood chowder. Admission is free. For more information, contact Fisken at 206.543.1225 or sfisken @u.washington.edu.

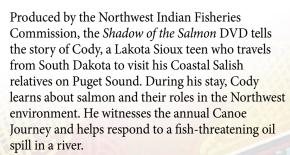
Shadow of the Salmon Teaching Environmenter Tribal Culture in Washington Schools



by Carolyn White

Washington
Sea Grant
has joined forces
with the nonprofit
Pacific Education
Institute to bring
the recently released
documentary film,
Shadow of the Salmon,
into Washington
classrooms.

Scenes from Shadow, featuring Cody, Uncle and Salmon Woman (courtesy Three Sixty Productions)



The DVD and an accompanying curriculum are being launched in Olympic Peninsula schools this autumn and will eventually be taught in both tribal and non-tribal schools throughout Washington. The curriculum meets Washington State's Essential Academic Learning Requirements.

Over the next three years, Washington Sea Grant will fund teacher training workshops conducted by the Olympia-based Pacific Education Institute. The workshops will help teachers use *Shadow of the Salmon* and its accompanying curriculum in their classrooms. Teachers will also receive guidance in developing specific projects that will relate science and math concepts to salmon ecology and restoration.

"The teachers will then get students actively engaged in creating documentaries, outdoor monitoring projects and field investigations," says Nancy Reichley, Washington Sea Grant's Education Specialist. "By being involved in projects that directly connect to their home environments, primarily through the importance of Pacific Northwest salmon to the outer coast, students will learn how to apply academic content to relevant, real-life issues."

"In short, *Shadow of the Salmon* is a creative, forward-thinking project that addresses key educational and cultural issues of the outer coast," Reichley adds.

It is designed to promote critical thinking and civic engagement, while helping students meet rigorous educational standards for math and science. In the process, students also learn about tribal culture, natural resource management and environmental stewardship.

Washington Sea Grant Sea Star Spring 2008

n February, Marine Habitat Specialist Jim Brennan attended the Green Shores workshop in Vancouver, BC, to learn more about this innovative program and to provide a lecture on the importance of marine riparian functions in coastal management strategies. The Green Shores project promotes sustainable use of coastal ecosystems through planning and design that recognize the ecological features and functions of coastal systems. This project was modeled after

the LEED Green Building program. A rating and certification system is being developed and may provide examples and incentives for development in the U.S. as well as Canada. For more information about the Green Shores project, visit www.greenshores. ca or contact Brennan at jbren@u.washingon.edu or 360.337.5625.

ISG Marine Water Quality Specialist Jeff Adams and WSU Extension staff are co-coordinating the new Kitsap Beach Naturalist Program. An initial training session for Beach Naturalists is scheduled for May. Several low tide events for the new naturalists and the public will also be held on Kitsap County beaches, beginning in June. Partners in this project include the Seattle Aquarium, IslandWood, Poulsbo Marine Science Center, People for Puget Sound, Kitsap County Stream Team, WSU Extension and Washington Sea Grant.

Editor, David G. Gordon; Designer, Robyn Ricks; Web Editor, Marcus Duke; Communications Manager, Dan Williams. Photos: © Washington Sea Grant, except as noted. ©2008, University of Washington, Board of Regents. WSG-MR

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tal Stewardship and

"Because the tribes have a unique relationship with the natural world, it's important that we teach this environmental perspective to kids," says Lynne Ferguson, Co-Executive Director at the Pacific Education Institute. "Many tribal students attending non-tribal schools aren't often taught their own culture's perspective in the classroom, so it's especially important for them that their culture's voice gets heard as well."

Exposure to a wide variety of viewpoints is an essential ingredient of critical thinking for both tribal and non-tribal students, according to Ferguson. "When young people get a picture of interacting with the environment from many different perspectives, it better enables them to form their own opinions and make informed decisions about the environment," she says.

By taking what they've learned in the classroom and applying it to real-life issues in their own environments, students will share the lessons learned from *Shadow of the Salmon* with their families and communities at-large.

New: Two Sessions of Science Camp!

NOAA Science Camp lets seventh and eighth graders explore marine and atmospheric science while having fun at the same time. At either of this year's two sessions, from July 7 - 11 or July 14 - 18 at NOAA's Seattle facility at Sand Point, campers can develop an understanding of the roles scientists play in solving local and global environmental problems. For the fifth consecutive year, WSG has assisted with funding and the overall coordination of the camp, as well as the crafting of posters and other promotional materials.

Each day of NOAA Science Camp will be filled with science activities and tours of NOAA departments. Activities will vary — from setting up sonar devices and tracking weather balloons to learning about sampling methods, practicing whale identification techniques and reading navigational charts. The fee for either session is \$225; scholarships are available. To register, or for more information, visit the WSG Web site, wsg.washington.edu/education/events/noaa.html, or contact Julie Hahn, Education Coordinator, 206.685.9117 or jkhahn@u.washington.edu.

Melvin Brokers Meeting of Minds

Arine Fishery Senior Scientist Ed Melvin is working with the Seattle-based Alaska fishing industry and the faculty of the UW School of Aquatic and Fishery Sciences to identify areas for collaborative research. It's a logical partnership, according to Melvin. "Seattle-based operations harvest over 80 percent of Alaska's groundfish, and SAFS, with its 30 faculty members, is ranked by the Chronicle of Higher Education as the top fisheries science program in the country," he says. In January, Melvin brokered what figures to be the first of many University-industry workshops featuring UW researchers Jim and Lisa Seeb's studies on sourcing salmon bycatch in the pollock fishery using genetic techniques.

Geoduck Literature Review Now Available

by Natalie Graves, WSG Science Writing Fellow

Effects of Geoduck Aquaculture on the Environment: A Synthesis of Current Knowledge, a 64-page review of scientific literature on the biology, ecology and culture of the nation's biggest burrowing clam, is now available online.

The document was sponsored by Washington Sea Grant in response to the State Legislature's request to assess our current understanding and identify topics that warrant further scientific investigation — ultimately, to resolve much of the environmental uncertainty surrounding geoduck farming. It was written by Kristina M. Straus, Lisa M. Crosson and Brent Vadopalas of the University of Washington's School of Aquatic and Fishery Sciences.

"Despite an almost 40-year-old fishery and a rapidly developing aquaculture industry, relatively little has been published on geoducks," says Brent Vadopalas. "Clearly, to better understand the potential impacts of geoduck farming, much more research on geoduck biology, ecology and culture is needed."

A major component of WSG's new Geoduck Research Program, the literature review will serve as a base of information to help identify and evaluate any data gaps and information needs, which, in turn, will aid WSG in determining areas where additional research may be needed. As this issue of *Sea Star* goes to press, an advisory panel has narrowed the

field of research proposals and, based on the panel's recommendations, WSG will be finalizing contracts for research projects soon.

Shellfish in marine ecosystems are generally associated with positive environmental effects like increased water clarity and more efficient nutrient cycling, but specific information on geoducks is relatively limited. Readers of the literature review will note the lack of peer-reviewed reports on intertidal geoduck populations, as opposed to those in subtidal habitats. While helping to compile the review, Vadopalas and his colleagues discovered other data gaps in existing scientific literature.

"Once you start introducing hatchery-raised geoducks to intertidal and subtidal areas, the issue of disease transmission and interbreeding with wild stocks becomes a concern," explains Vadopalas. "Culture techniques used by the growers likely affect the environment in unknown ways. The presence of geoducks in the intertidal zone may affect carrying capacity and decrease eutrophication, but data on these effects are lacking. It's extremely important that we get new information to fill those gaps."

The literature review takes no sides in the ongoing debate over geoduck farming's pros and cons. "Our goal is to ensure that people have balanced information to understand geoduck issues and that good science is available to manage geoduck aquaculture," says WSG Director Penny Dalton.

To download and print the literature review or read it online, visit the WSG Web site, wsg.washington. edu/research/geoduckindex.html.

Washington Weekend Open House, April 26

Visit with WSG's Marine Ballast Water Specialist Russ Herwig and watch high-magnification video of live planktonic critters from Puget Sound as part of this year's Washington Weekend open house. The event is on Saturday, April 26, from 10:00 a.m. to 2:00 p.m., on the UW campus. Other highlights include shipboard tours of the UW's research vessel, the *Thompson*, moored nearby. For more information, please contact David G. Gordon, 206.685.8191 and

davidg@u.washington.edu or April Wilkinson, 206. 616.6692 and amwilk@u.washington.edu.

Washington Sea Grant Sea Star Spring 2008

EXCEL Makes It Two in a Row at WSG-Cosponsored Orca Bowl '08

t was a Battle of the Brains on Saturday, February 9, as students from Vancouver, Washington's ExCEL Academic League home school fought their way to a First Place win at Washington's annual Orca Bowl. This year's top prize was a floating classroom experience aboard Salish Sea Expeditions' research vessel *Carlyn*, plus a scholarship to the University of Washington's School of



The ExCEL team

Oceanography for any team members who chose to enroll in the school.

Held at the University of Washington's Seattle campus, this Jeopardy-style academic competition attracts teams from across the state. Each team answers rapid-fire questions about the biology, chemistry, geology, physics, history and economics of the world's oceans.

This was the second year in a row that an ExCEL team left campus with the top prize. Second Place went to Seattle's Garfield High School and Third Place to Friday Harbor High School on San Juan Island. A second ExCEL team tied with Everett's Ocean Research College Academy (ORCA) for Fifth Place.

As statewide champions, the first-place team earned an all-expenses-paid trip to Seward, Alaska, and the chance to compete in the National Ocean Sciences Bowl competition on April 26. ExCEL also received \$100 from the Northwest Aquatic and Marine Educators organization to cover the cost of team T-shirts. The team's coach, Pamela Crockford, was given a membership in the National Marine Educators Association.

"It's my first national competition and such an honor and a pleasure to travel with the 2008 winning team," says WSG's Orca Bowl co-coordinator Julie Hahn. "Not only smart and dedicated, they really exemplify what it means to work as a problem-solving team. I have every confidence that they will stand up to the challengers in Alaska."

Orca Bowl is part of the National Ocean Sciences Bowl program, presented in cooperation with Washington Sea Grant and the University of Washington's School of Oceanography within the College of Ocean and Fishery Sciences. Support also comes from The Seattle Aquarium, Salish Sea Expeditions, Hotel Nexus, Aleutian Spray Fisheries, Port Townsend Marine Science Center, Padilla Bay National Estuarine Research Reserve, the National Oceanic and Atmospheric Administration and many other agencies and businesses.

The National Ocean Sciences Bowl is a program of the Consortium for Ocean Leadership, based in Washington, DC. Approximately 2,000 students from over 400 high schools participated in regional competitions this year. Through this educational forum, the NOSB strives to encourage and support the next generation of marine scientists, policy makers, teachers, explorers, researchers, technicians, environmental advocates and informed citizens.

For more information or to compete in next year's Orca Bowl, contact Julie Hahn, Washington Sea Grant, 206.685.9117 or *jkhahn@u.washington.edu*.

Welcome WSG's Newest Staffer

Meet Katrina Hoffman, WSG's new Coastal Resources Specialist, based at the Padilla Bay National Estuarine Research Reserve in Skagit County.



Katrina Hoffman

Hoffman has extensive experience in the realm of ocean science education, including a two-year stint teaching marine biology on Catalina Island, three years teaching high school marine science in Southern California and two years leading a marine science education program at Occidental College.

She recently completed her Master of Marine Affairs degree at the University of Washington. While working on her degree, she helped plan, organize and implement a pair of shellfish conferences for WSG.

"Having worked part-time for Sea Grant for nearly a year, I'm excited at the prospect of working full-time at the nexus of marine science, policy and outreach," Hoffman says.

Hoffman has been immersed — literally and figuratively — in ocean issues for most of her life. Her formative years were spent digging clams and exploring the beaches of Bainbridge Island and the Outer Banks of North Carolina. While completing a double major in biology and environmental studies at Oberlin College, she conducted NSF-funded research in Anacortes, Washington, and also studied marine ecology at the University of Copenhagen in Denmark. A fruitful internship at the Monterey Bay Aquarium Research Institute led to contract work collecting plankton samples and primary productivity data in California, Hawaii, Micronesia and other locales.

When not working or studying, Hoffman enjoys honing her frisbee, soccer and winter sport skills. Otherwise, she can be reached at *kathoff@u. washington.edu*.

Marc Hershman, 1942-2008

Marc Hershman Marine Policy Fellowship

A newly created fellowship is available for students enrolled in graduate programs related to ocean and coastal resources and the policy decisions that affect them.

The Marc Hershman Marine Policy Fellowship offers first-hand experiences in natural resource policy and enables students to share their academic expertise with policy makers in our state capitol. It places two highly motivated, qualified graduate students per year with Washington State Ocean Caucus agencies in Olympia. In addition to Washington Sea Grant, the State Ocean Caucus includes members from the Governor's office, Department of Ecology, Department of Natural Resources, Department of Fish and Wildlife, Department of Health and Department of Community, Trade and Economic Development, as well as the State Parks and Recreation Commission and Military Department EmergencyManagement Division.

Each fellow will receive a monthly stipend for nine months and a small allowance for health insurance and travel expenses. Graduate students who are close to completing their degrees in a marine-related field at a Washington university are encouraged to apply. The application deadline for this year's fellows is April 30, 2008.

The new fellowship is named in memory of Marc Hershman, past director of the UW School of Marine Affairs, founder of the Coastal Management Journal and a highly respected researcher and advisor on numerous Washington Sea Grant-funded projects. Hershman was one of 16 members of the president's U.S. Commission on Ocean Policy and an internationally recognized expert in marine affairs. He will be fondly remembered by his many students and peers.

For additional information please visit the WSG Web site, wsg.washington.edu, or contact Nancy Reichley, WSG Education Specialist, 206.685.8302 or reichn@u.washington.edu.



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