

# ASC

## Aquatic Sciences Chronicle

[www.aqua.wisc.edu/chronicle](http://www.aqua.wisc.edu/chronicle)

UNIVERSITY OF WISCONSIN SEA GRANT INSTITUTE UNIVERSITY OF WISCONSIN WATER RESOURCES INSTITUTE

### INSIDE:

#### 3 ESTROGENS IN WATER?



#### 4 LAKE SURVEY SURVEYED



#### 5 EXOTIC DISPLAY



UW SEA GRANT

## Earthwatch Radio Ends 35-Year Run



**"OVER THE LAST TWO MONTHS I'VE LISTENED TO EVERY EW PODCAST ON ITUNES. I LOVE THE STORIES! THEY'RE A LITTLE LIKE NPR HEALTH & SCIENCE ONLY I GET THEM MORE OFTEN."**

Catherine Savage

*Photo (above): Richard Hoops, Earthwatch Radio producer, signs off after 20 years of environmental broadcasting.  
photo: Bob Rashid*

UW Sea Grant recently bid farewell to one of its oldest institutions. On May 22, *Earthwatch Radio* aired its final story after 35 years of producing five programs every week.

A group of UW–Madison students and staff at the Sea Grant Institute and the Institute for Environmental Studies launched the project with faculty support in 1972. Inspired by Earth Day Founder Senator Gaylor Nelson, *Earthwatch* was the first radio program in the nation to concentrate on environmental news, and it became the longest-running program of its kind.

The weekly series of two-minute programs had a special focus on aquatic and atmospheric issues, and it was well known for concise and accurate reporting. Every script was reviewed and approved by its source before airing on as many as 150 outlets across the world. In later years, program scripts were also posted to the Internet and sent to a listserv of 300 readers.

*Earthwatch* was also one of the first science and environmental programs to embrace podcasting, a technology allowing Internet users to download the program's audio on their own schedules. For the past two and a half years, *Earthwatch Radio's* podcasts have tallied between 3,000 and 4,000 visits per day.

In surveys over the years, listeners frequently commented that being able to hear scientists talk about their research added to a story's

*continued on page 6 >>*

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**University of Wisconsin Sea Grant Institute** is part of a national network of 30 university-based programs funded through the National Sea Grant College Program, National Oceanic & Atmospheric Administration, U.S. Department of Commerce, and through matching contributions from participating states and the private sector. [www.seagrant.wisc.edu](http://www.seagrant.wisc.edu)

**University of Wisconsin Water Resources Institute** is one of 54 Water Resources Research Institutes nationwide authorized by the federal Water Resources Research Act and administered through the U.S. Geological Survey. [www.wri.wisc.edu](http://www.wri.wisc.edu)



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#### FEATURED WEB SITE

## Climate Change in the Great Lakes Region

Starting a Public Discussion

[seagrant.wisc.edu/climatechange](http://seagrant.wisc.edu/climatechange)

Global warming is an undeniable reality, according to the latest (2007) report from the Intergovernmental Panel on Climate Change (IPCC), an international group of scientists convened by the United Nations. What will global warming mean for our region? The "Climate Change in the Great Lakes Region" seminar series provides a forum to begin this important discussion.

Over the next several months, experts are speaking at sites throughout Wisconsin to discuss what is known, what is predicted, and what can be done to adapt. The series began with a keynote presentation by Dr. Kevin Trenberth, a leading climate researcher from the National Center for Atmospheric Research and one of the authors of the current IPCC report. Subsequent talks will highlight how climate change could affect our property, water resources, fisheries, and public health.

See page 7 for a schedule, and check seminar Web page at [www.seagrant.wisc.edu/climatechange](http://www.seagrant.wisc.edu/climatechange) for more information about the speakers and topics. Audio recordings of the seminars will be combined with speakers' PowerPoint presentations and posted online.

The seminar series is sponsored by UW Sea Grant with support from the Wisconsin Coastal Management Program and the National Oceanic and Atmospheric Administration.

## programpeoplenews

### Sea Grant Law Center Supports Great Lakes Projects

**Two scientists from the Great Lakes region receive grants for legal research and outreach projects.**

**Colleen Masterson**, Education Coordinator at the Great Lakes Water Studies Institute at Northwestern Michigan College in Traverse City, was awarded \$51,850 to conduct a three-day workshop called "Legal Tools to Protect Coastal Environments." The workshop will provide government officials, non-profit environmental groups, shoreline property owners, and concerned citizens with tools to understand and protect Michigan's coastal environments. The project is partnering with the Inland Seas Education Association, Sleeping Bear Dunes National Lakeshore, Michigan Sea Grant, and Olson, Bzdok and Howard, P.C.

**Brian Ohm**, professor of urban and regional planning at the University of Wisconsin-Madison, has been awarded \$58,483 for a project called *Model Coastal Management Ordinances for Great Lakes Coastal Communities*.

The National Sea Grant Law Center was founded at the University of Mississippi in 2002 to provide legal research and outreach services to the Sea Grant community and its constituents. The Law Center conducts research on coastal and marine laws and policies, organizes Continuing Legal Education classes and other training courses, and disseminates information to coastal and ocean policymakers.



## UW WATER RESOURCES RESEARCH

# Care for a glass of $H_2O$ ?

**RESEARCHERS  
EXAMINE  
DRINKING WATER  
FOR SIGNS OF  
ENDOCRINE  
DISRUPTORS**

The female sex hormone estrogen is found naturally in humans and animals, but it and other estrogenic endocrine disruptors (EEDs) are showing up all over the environment due to drugs like birth control pills and industrial products like plasticizers and surfactants. Funded by the UW Water Resources Institute, a group of researchers from the Wisconsin State Laboratory of Hygiene examined whether EEDs are entering the state's groundwater, the source of drinking water for seventy percent of the population.

Estrogen and other EEDs have been linked to endocrine disruption in fish like small-mouth bass and carp, both in the U.S. and abroad, causing the production of female proteins and even eggs in males. While environmental EEDs have not been linked to effects in adult humans, they could pose a threat to reproduction and development, said Jocelyn Hemming, an environmental toxicologist who worked on the study.

"The concern is that estrogens do have strong effects on growth, reproduction and development, and so additional sources of estrogens have the potential to cause adverse effects," she said.

Many researchers believe that EEDs are linked to decreased sperm count, breast cancer, and certain birth defects.

Hemming and her colleague Miel Barman worked with the Department of Natural Resources to identify areas in Wisconsin at high risk for EED contamination. Those areas include communities using high-capacity municipal wells where nearby surface waters contain EEDs.

When high-capacity wells rapidly deplete groundwater aquifers, surface water can leak into aquifers faster and in greater volume, possibly carrying contaminants with it.

In cooperation with local hydrologists, the researchers gathered samples from high-capacity municipal water supply wells and nearby surface waters. They used a highly sensitive bioassay called E-screen to measure EED levels in the samples.

The study found that all of the surface waters tested, with one exception, had some level of EED activity, but those levels were very low. Levels in the groundwater drawn from high-cap wells were even lower, with most below the level of detection for the assay.

The researchers also looked at another situation in which groundwater might be susceptible to EED contamination, this time in rural areas where municipal wells and sewers aren't available. One-third of Wisconsin households use private onsite wastewater treatment systems, commonly known as septic systems. These systems collect waste in a holding tank, where solids settle out from liquid effluent. While bacteria break down the solids, the effluent flows or is pumped into a leaching field where it gradually soaks into the soil. The researchers examined whether effluent from these systems is contributing to EEDs in the groundwater.

Some newer types of septic systems pretreat the effluent before releasing it into the leach field, most often with sand filtration or aerobic treatments. The study found that the mean EED level of non-treated waste from traditional septic systems was about 23 times that of pretreated septic effluent in the newer types of systems. Both sand filtration and aerobic pretreatments removed about 98 percent of estrogen, which is comparable to what municipal treatment systems remove.

Despite the higher EED levels found in septic systems not using a pretreatment method, no EEDs were detected in the groundwater beneath these systems. That's good news for many Wisconsin homeowners. However, the researchers stressed that all of their samples were collected from new housing developments, and regular monitoring is needed to ensure that EEDs do not eventually make their way into the groundwater.

While EEDs do not appear to pose an immediate threat to people in Wisconsin, Hemming says other states might be well advised to test their groundwater for EEDs.

"In the locations we tested, I would say we are safe at this time, but other locations with higher population densities and a more arid climate — for example, some places in the western U.S. — will need to conduct similar studies to evaluate their drinking water sources," Hemming said. "I don't think we know enough yet about other sources, livestock waste, for example, and that is what we should be focusing on next." — Brian Sweeney





# Wisconsin's Watters

## HARD AT WORK IN WASHINGTON, D.C.

UW Sea Grant is pleased to announce that Jeffrey Watters was selected as Wisconsin's 2007 Dean John A. Knauss Marine Policy Fellow. Watters traveled to Washington, D.C., in early 2007 to begin his work in the office of U.S. Senator Maria Cantwell of Washington.

Watters is busy helping the senator and her staff with several pieces of legislation involving oil spills and marine-related impacts of climate change, and establishing a national ocean observing system. Cantwell is a member of the Committee on Commerce, Science and Transportation, and she chairs the Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard.

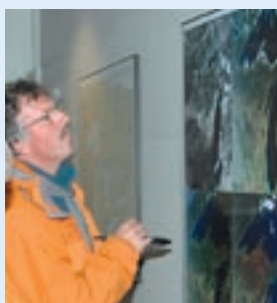
"My responsibilities include a combination of anything and everything," said Watters, who plans to defend his thesis for his M.S. in limnology later this summer. "It's definitely been a learning experience so far."

Sponsored by the National Sea Grant College Program, the Dean John A. Knauss Marine Policy Fellowship provides a unique educational experience to students who have an interest in the national policy decisions affecting ocean, coastal, and Great Lakes resources. The one-year paid fellowship places highly qualified graduate students in positions within the legislative and executive branches of government located in the Washington, D.C., area. For more information, visit [www.seagrant.noaa.gov/knauss/knauss.html](http://www.seagrant.noaa.gov/knauss/knauss.html).

## History of U.S. Great Lakes Survey Draws Crowds



**EXHIBIT TRACES 300 YEARS  
OF MAPMAKING IN THE  
GREAT LAKES REGION**



It was standing room only on April 5 in the Department of Special Collections at the UW-Madison Memorial Library. Dr. Christopher Baruth (above right) presented a history of the U.S. Lake Survey as part of "Making Maps, Mapping History," a Special Collections exhibit co-sponsored by UW Sea Grant. Baruth is curator of the American Geographical Society Library, UW-Milwaukee, which contributed 26 maps to the exhibit. The exhibit runs through June 29. For more information, see [www.greatlakemaps.org](http://www.greatlakemaps.org).



ASC Director Anders Andren (above) introduced Dr. Baruth. Other photos: Visitors examine maps of Wisconsin and the Great Lakes region from 1670 through 2006. Photos by John Karl.







# science expeditions 2007

**ALIEN CREATURES LURE CURIOUS CHILDREN  
— SEA LAMPREY ATTACKS ADULT MALE**



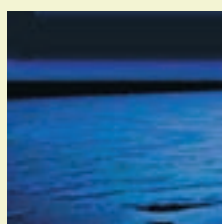
UW Sea Grant Fisheries Specialist Phil Moy (above right, plaid shirt) introduced people of all ages to the threats of aquatic invasive species at Science Expeditions 2007. The event, hosted March 24 by the UW-Madison Science Alliance, offered some 2,000 visitors a chance to see, hear, touch, and taste the latest in Wisconsin science and research. Photos by John Karl.



Top, some of the former students...

L to R: Kathy Schmitt, Wai Mae Loon, Peyton Smith, Jennifer Boudart, Krishna Ramanujan, Diane Pansky, Nick Houtman, Elizabeth Katt-Reinders.

Bottom: Earthwatch staff during a weekly editing session.



**"I AM THE SCIENCE COORDINATOR AT A PRIVATE SCHOOL IN MILWAUKEE. YOUR PROGRAM HAS TURNED INTO MY FAVORITE DAILY E-MAIL. IT IS SUCCINCT — IT PROVIDES ENOUGH INFORMATION TO PRESENT AN OVERVIEW TO TEACHERS AND STUDENTS WHO ARE STUDYING THAT TOPIC AND ALSO LEADS THEM TO THE MORE DETAILED SOURCES."**

Nicola De Torre  
Lower School Science Coordinator  
University School of Milwaukee

## Earthwatch Radio continued from page 1

credibility and trustworthiness. They also enjoyed the range of topics, which sometimes ventured beyond traditional scientific journal fare. Story subjects included a clever octopus holding a grudge against the scientist studying it ("Octopus Brainpower"), a flock of overboard plastic ducks tracked to monitor ocean currents ("Rubber Ducks at Sea"), and a prominent plumbing manufacturer probed about water-efficient toilet designs ("Flush Factor"). Listeners can still hear these and other past stories at [ewradio.org](http://ewradio.org).

*Earthwatch* received eight notable awards during its run, including being named to the "Global 500 Roll of Honor" by the United Nations Environment Programme in 1992. Its first award was a "Commendation for Objectivity and Quality Programming" from the Wisconsin Natural Resources Foundation in 1974.

Although pleased with such recognition, former *Earthwatch* Producer Richard Hoops said he is most proud of the students who received valuable experience working for the program. Over the years, *Earthwatch* employed a total of 86 half-time undergraduate and graduate students to interview scientists and write scripts. Nick Houtman, one of those former students and now director of research communications at Oregon State University, said his time with the program helped prepare him for his career as a science writer.

"I learned how to spot a good science story, identify knowledgeable sources for it and get to the heart of the message quickly," he said. "I also learned about the difficulties of telling stories about research and how to summarize complex issues and develop useful metaphors that convey scientific concepts to the public."

Peyton Smith was a cofounder of *Earthwatch* back in 1972 when he was still a student at UW-Madison. Now an assistant vice chancellor at his alma mater, he said the program embodied "a cherished, core value" of the university — the Wisconsin Idea.

"Programs like *Earthwatch* help translate what's happening at the university into the public consciousness," Smith said. "They increase public understanding of important issues, and that leads to greater science literacy."

While *Earthwatch* was the first of its kind in 1972, today other radio programs carry on where *Earthwatch* is leaving off. Programs like *Earth & Sky* and the Great Lakes Radio Consortium's *Environment Report* both cover similar topics and use concise formats.

*Earthwatch Radio*'s future became uncertain last September after a major reorganization and budget cuts led administrators at the Nelson Institute for Environmental Studies to conclude that it could no longer support its half of the program. Stephen Wittman, communications manager at the Aquatic Sciences Center, understands that institutional needs and priorities change.

"IES was a steadfast partner for 34 years. We're very grateful to them for providing three decades of support for *Earthwatch Radio*," he said.

Limited programming of one story a week continued until recently, when Richard Hoops accepted a job as a communications director at the University of Southern California (USC).

"After 20 years of doing *Earthwatch*, the USC Wrigley Institute of Environmental Studies offered Rich a professional development and career advancement opportunity that was simply too good to pass up," said Wittman.

Plans are underway at the Aquatic Sciences Center to develop a new communication outreach program that will carry on the spirit and mission of *Earthwatch Radio*. Stay tuned. — Brian Sweeney



photo: Bob Rashid



# Climate Change in the Great Lakes Region

## STARTING A PUBLIC DISCUSSION

[www.seagrant.wisc.edu/ClimateChange](http://www.seagrant.wisc.edu/ClimateChange)

### 2007 SEMINAR SERIES:

JUNE 7 & 11  
JOHN MAGNUSON  
Emeritus Professor of Zoology  
and Limnology, UW-Madison

**Climate Change and the  
Waters of Wisconsin**  
Superior and Milwaukee,  
Wisconsin

AUGUST 8  
TIM ASPLUND  
Water Resources Specialist,  
Wisconsin Department of  
Natural Resources

**Climate Change and Wisconsin's  
Water Resources**  
Ashland, Wisconsin

AUGUST 15  
PHIL KEILLOR  
Coastal Engineering Specialist (Retired)  
UW-Madison Sea Grant Institute

**How Climate Change May Affect  
Coastal Property Owners**  
Port Washington, Wisconsin

SEPTEMBER 12  
JONATHAN PATZ  
Associate Professor of Environmental Studies  
and Population Health Sciences, UW-Madison

**Climate Change and Public Health Concerns**  
Madison, Wisconsin

SEPTEMBER 24  
BRIAN SHUTER  
Research Scientist, Ontario Ministry of Natural  
Resources and Adjunct Professor of Zoology,  
University of Toronto

**Climate Change and Fisheries**  
Manitowoc, Wisconsin

University of Wisconsin Sea Grant Institute • Wisconsin Coastal Management Program • NOAA

## KNOW YOUR WATER LAB WATER SCIENCE AND ENGINEERING LABORATORY

UNIVERSITY OF WISCONSIN—MADISON

[www.engr.wisc.edu/centers/wse](http://www.engr.wisc.edu/centers/wse)

The Water Science and Engineering Laboratory (WSEL) is home to a host of staff and students with diverse affiliations. The largest research group is environmental chemistry, which examines water chemistry, water pollution, air pollution chemistry and environmental technology.

Despite the laboratory's waterfront location on Lake Mendota, Director David Armstrong says that most work gets done at other field locations, some even outside the United States. WSEL scientists research the production of methylmercury in lakes and wetlands, sources of atmospheric particulate matter, and the use of photocatalysts in removing chemical contaminants from water and air. In fact, the research is so diverse that Armstrong thinks that "Environmental Research Laboratory" would be a better descriptor.

WSEL also provides teaching and research home bases for Sea Grant Director Anders Andren and Assistant Director for Research and Outreach James Hurley, as well as facilities for maintaining Sea Grant's research vessels.

For more information, please visit [www.engr.wisc.edu/centers/wse](http://www.engr.wisc.edu/centers/wse) or contact Director David Armstrong at [armstrong@engr.wisc.edu](mailto:armstrong@engr.wisc.edu) or (608) 262-0768.

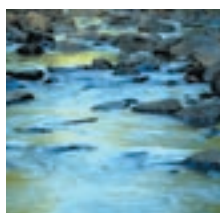
*The Water Science and Engineering Laboratory sits tucked behind Helen C. White Hall, across from the Memorial Union Terrace, with a picturesque view of Lake Mendota. Photo: John Karl.*



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# Aquatic Sciences Chronicle

a joint newsletter from UW Sea Grant and UW Water Resources



## CALENDAR OF EVENTS

### APRIL – JUNE 2007

**Great Lakes, Great Maps Exhibit**  
Madison, Wis.  
[www.greatlakesmaps.org](http://www.greatlakesmaps.org)

### MAY 28 – JUNE 1, 2007

**50th Annual IAGLR Conference on Great Lakes Research**  
University Park, Penn.  
[www.iaglr.org/conference](http://www.iaglr.org/conference)

### JUNE 6 – 8, 2007

**2007 IJC Great Lakes Conference and Biennial Meeting**  
Chicago, Ill.  
[www.ijc.org/](http://www.ijc.org/)

### JULY 22 – 26, 2007

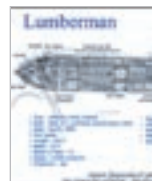
**Coastal Zone 2007**  
Portland, Ore.  
[www.csc.noaa.gov/cz](http://www.csc.noaa.gov/cz)

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**Sustaining Wisconsin's Great Lakes Assets Fact Sheet**  
free



**Lake Michigan Shipwrecks Guides – Set 2**  
\$25

Appomattox, Boaz, Cherubusco, City of Glasgow, Dan Hayes, Kate Kelly, Lumberman, Reynolds' Pier, Selah Chamberlain

Historic Shipwrecks Guides can be purchased and free downloads of both fact sheets are available from the ASC store at [aqua.wisc.edu/publications](http://aqua.wisc.edu/publications)