Fall 2009

ASC
Aquatic Sciences Chronicle
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UNIVERSITY OF WISCONSIN SEA GRANT INSTITUTE UNIVERSITY OF WISCONSIN WATER RESOURCES INSTITUTE

INSIDE:

Bob Rashid

SEA GRANT OUTREACH

PEOPLE OF THE STURGEON

"Across the globe, in Russia and Iran, sturgeon are pursued for their eggs, the source of an exotic delicacy to be enjoyed by the wealthy. But here in Wisconsin, lake sturgeon belong to everyone, and they're revered for what they are and have been for millions of years: a tough, old fish." —People of the Sturgeon

UW Sea Grant announces the release of *People of the Sturgeon: Wisconsin's Love Affair with an Ancient Fish*, co-authored by science writer Kathleen Schmitt Kline, aquaculture specialist Fred Binkowski, and Wisconsin Department of Natural Resources (WDNR) sturgeon biologist Ron Bruch, with over 150 color photographs by the late Bob Rashid. The book was published by the Wisconsin Historical Society Press.

People of the Sturgeon tells the poignant story of an ancient fish. Wanton harvest and habitat loss took a heavy toll on these prehistoric creatures until they teetered on the brink of extinction. But in

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Irene Halfmann (above, with her husband Greg) of Malone, Wisconsin, speared a ninety-two pound sturgeon in 1979. Hers is one of many personal stories featured in *People of the Sturgeon.*

Aquatic Sciences Chronicle

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The Aquatic Sciences Center is the administrative home of the **University of Wisconsin Sea Grant Institute** & **University of Wisconsin Water Resources Institute.**

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University of Wisconsin Sea Grant Institute is part of a national network of 32 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*

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*

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ASC Communications Manager **Stephen Wittman** has retired as of September 30, 2009. "It has been both a pleasure and a privilege to work at a world-class university like the UW–Madison," said Wittman. "Little did I realize when I began working as a Publications Editor with the UW Sea Grant staff in August 1979 that it was the start of a 30-year engagement. I wish continued success to the program and all the best for all of you."

Wittman and Art Director **Tina Yao** have been recognized with an award of excellence in environmental communications for their 2008 report, *Climate Change in the Great Lakes Region*. The national award was one of ten presented by Global Environmental Communications, LLC., an organization that supports professional environmental communicators.

Kathy Schmitt Kline, Science Writer, had two special deliveries in two days. One was delivered to her doorstep—the first copy of the book, *People of the Sturgeon: Wisconsin's Love Affair with an Ancient Fish*, published by the Wisconsin Historical Society Press. Kline co-authored the book with WDNR's Ron Bruch and Sea Grant's Fred Binkowski. The next day she delivered her son, Oskar Louis, born July 22, 2009. Congratulations on both deliveries!

Water Quality and Habitat Specialist **Vicky Harris** received a mid-career award from the Great Lakes Sea Grant Network Program in June 2009 at a networking meeting held in Alexandria Bay, New York. Vicky was one of two outreach specialists from the seven-state Great Lakes Region to receive the competitive, peer-reviewed award that recognizes outstanding service to the region. Vicky has been with Sea Grant since 1999, and she is based at UW–Green Bay.

Wittman, Kline and Harris photos: Wisconsin Sea Grant Institute; Yellow Perch: Maryland DNR; Fried perch: Jon Sullivan

SEA GRANT RESEARCH

Breeding Yellow Perch to Meet Consumer Demand

RESEARCHERS CAN TRICK THE FISH INTO CHANGING THEIR NATURAL REPRODUCTIVE CYCLES, ALLOWING THEM TO REPRODUCE YEAR-ROUND…

The beer-battered walleye on the menu at Friday night's fish fry looks tempting, but nothing satisfies like the mild taste and firm flesh of deep-fried yellow perch. But perch served in Wisconsin restaurants may come from Lake Erie or Canada; the only commercial yellow perch fishery on Lake Michigan is limited to Green Bay. Because of a decline in yellow perch natural reproduction between 1988 and 2000, the Wisconsin Department of Natural Resources imposed a severe limit on yellow perch harvest to allow the fish to recover.

Growing yellow perch in indoor aquaculture facilities may help meet the consumer demand, according to researcher Frederick Goetz, a senior scientist at Milwaukee's Great Lakes Wisconsin Aquatic Technology and Environmental Research (WATER) Institute. Goetz is using Sea Grant funding to develop fast-growing, disease-resistant perch with good reproductive capacity.

Raising fish in captivity requires a broodstock—sexually mature male and female fish with known genetic characteristics—from which to breed. This is not possible when the grower has to start each year with fish from the wild with unknown characteristics.

To create the first-generation broodstock, Goetz selected yellow perch from the Perquimans River in North Carolina, the Choptank River in Maryland, and Lake Winnebago in Wisconsin. He is interested in genetic variations within and across each of the three geographic regions because great genetic variation across the population is more likely to yield desirable traits.

Goetz bred the fish in the wild and brought about 20 sets of fertilized eggs from each site back to his lab. Once the eggs hatched, the researcher embedded tiny microchips into 2,400 fish in order to track which parents produced which offspring. He is able to track the genetic structure of the offspring—called the parental stock. As they mature, the parental stock are measured for length, weight, protein content, and filet yield.

Carolyn Rumery Betz

Rick Goetz explains how fertilized yellow perch eggs are used in his genetic research project.

The Atlantic fish grow more rapidly than the Midwest fish, but Goetz believes that the fish from Lake Winnebago may possess other desirable characteristics, such as disease resistance.

Goetz selected the top 30 to 40 percent of the fastest growing and largest fish from the parental stock to produce the second generation. Using electric lights programmed to mimic sunrise, daylight, sunset, and night, the fish are subject to light and temperature conditions characteristic of their home environments. By manipulating light and temperature periods, researchers can trick the fish into changing their natural reproductive cycles, allowing them to reproduce year-round instead of only in the spring.

"The commercial grower wants fast-growing fish with good, consistent filet yields," he said. This manipulation may allow fish farmers to provide a steady supply of fish to supermarkets and restaurants. — CRB

wisconsin's**water**library

An ancient fish, some modern titles

In honor of the publication of *People of the Sturgeon,* Wisconsin's Water Library invites you to further explore the world of this fascinating fish and the other fish of Wisconsin.

THE PHILOSOPHER FISH: STURGEON, CAVIAR, AND THE GEOGRAPHY OF DESIRE
by Richard Adams Carey. New York: Counterpoint, 2005.

Since the days of the Persian Empire, caviar has trumpeted status, wealth, prestige, and sex appeal. In this spectacular jaunt, Adams immerses himself in the world of sturgeon, the fish that lays these golden eggs.

CAVIAR: THE STRANGE HISTORY AND UNCERTAIN FUTURE OF THE WORLD'S MOST COVETED DELICACY
by Inga Saffron. New York: Broadway Books, 2002.

Inga Saffron tells, for the first time, the story of how the virgin eggs of the prehistoric-looking, bottom-feeding sturgeon were transformed from a humble peasant food into a czar's delicacy–and ultimately a coveted status symbol for a rising middle class.

FISHING THE GREAT LAKES: AN ENVIRONMENTAL HISTORY, 1783-1933
by Margaret Beattie Bogue. Madison: University of Wisconsin Press, 2000.

Bogue has written the definitive history of the decline of the Great Lakes fisheries and how overfishing, pollution, political squabbling, poor public policies, and commercial exploitation combined to damage the fish population before the arrival of the sea lamprey in the 1940s.

THE LIFE OF THE LAKES: A GUIDE TO THE GREAT LAKES FISHERY
by Shari L. Dann and Brandon C. Schroeder. Ann Arbor: Michigan Sea Grant, 2003.

This publication describes the current status of the Great Lakes fishery; outlines the fishery of the past in terms of the social, technological and environmental changes it has faced, and discusses issues to consider for the future.

FISHES OF WISCONSIN
by George C. Becker. Madison: University of Wisconsin Press, 1983.

This encyclopedic reference to 157 fish species found in Wisconsin has become a model for all other such works.

Please visit the Water Library at
***http://aqua.wisc.edu/waterlibrary* for more information.**
Anyone in Wisconsin can borrow these books. Just email *askwater@aqua.wisc.edu*

Grand Opportunity to Learn About Water

More than 850 grandparents and their grandchildren gathered at the UW–Madison in July to participate in Grandparents University, sponsored by the UW Alumni Association. Limnology, the study of inland waters, was one of 19 majors offered to this unique group of students. Children aged 7–14 and their ageless grandparents learned about the Great Lakes, groundwater, environmental chemistry, and Lake Mendota during the two-day session.

John Magnuson, professor emeritus, welcomed students aboard the *Limnos* by teaching them a secret handshake that doubled as a safe way to embark on the Center for Limnology's research vessel. While out on Lake Mendota, they measured water clarity using a Secchi disk, tested the water for dissolved oxygen concentrations and temperature, took a sample of the bottom sediments, and collected concentrated samples of microscopic plants and animals that live in the water. In the basement of the Water Chemistry and Engineering Laboratory, grandchildren out-competed their grandparents while test driving two remotely operated vehicles, one of which had just returned from a research trip on Lake Michigan.

Sea Grant Outreach Specialists Jim Lubner and Phil Moy were two of the instructors in the program teaching students about the Great Lakes and their many aquatic invasive species. Carolyn Betz, Sea Grant science writer, assisted in sampling efforts aboard the *Limnos*.

Ann Ross attended both two-day sessions of Limnology with two different sets of grandchildren. "The most amazing part was seeing the plankton under the microscope," she said after the second session. "Maybe we will meet again." She enjoyed the class so much that she plans to bring another granddaughter next summer.

For more information about Grandparents University, go to *http://www.uwalumni.com/home/learning/gpu/gpu.aspx*

http://www.youtube.com/watch?v=97It1UE_E9k

Above: Jamie and Carly Roscisske, look at plankton collected aboard the Center for Limnology's research vessel, Limnos. *Ann Ross and John Magnuson are in the background.*

Two Wisconsin Students Receive Prestigious Knauss Fellowship

Since February, two UW Sea Grant-sponsored students have been among 46 nationwide working in the Washington, D.C., area as recipients of the Dean John A. Knauss Marine Policy Fellowship. Sponsored by the National Sea Grant College Program, the one-year paid fellowship provides a unique educational experience to highly qualified graduate students who have an interest in the national policy decisions affecting ocean, coastal, and Great Lakes resources by placing them in positions within the legislative and executive branches of government located in the Washington, D.C., area.


Chelsea Lowes


Sue Vang

Chelsea Lowes is expecting an M.S. in Biological Sciences from UW–Milwaukee, where she studied Lake Michigan phytoplankton and their ability to use alternative forms of phosphorus for growth. As an undergraduate, several summer internships with universities and nonprofit organizations greatly shaped her career path. "By exposing me to the role that policy and the government play, those opportunities greatly influenced my science perspective and really motivated me to pursue the Knauss Fellowship," she said.

As a fellow, Lowes is working as a coordinator for NOAA's Ecosystem Research Program, which conducts applied research and development to provide scientific information, tools, and forecasts for implementing and evaluating ecosystem management. "I strongly hope that I will be able to return to the Great Lakes region with my new knowledge of how the federal government views our valuable commodity," she said, adding that her dream job is to work at the Great Lakes Environmental Research Laboratory in Ann Arbor, Mich.

Sue Vang earned an M.S. in Conservation Biology and Sustainable Development from UW–Madison, where she examined community-based social marketing strategies for marine debris reduction. She is currently working as an environmental policy specialist in the Office of Polar

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ASC DROPLETS

Patent Awarded for Water Treatment Device

A water treatment apparatus developed in a business partnership between Sea Grant and Pentair Water Treatment (Sheboygan, WI) received a patent in July 2009. The device is composed of a UV light bulb surrounded by a stack of thirty plastic rings coated with titatania (TiO2) that distribute the UV rays. The photocatalytic process rids contaminated water of organics, heavy metals and bacteria. Since no filters are used, there are fewer maintenance requirements than other point-of-use drinking water treatment systems. UW–Madison Engineering Professor Marc A. Anderson and Ph.D. student Timothy Lee were awarded a Sea Grant-Industrial Fellowship from 2004–06 resulting in the development of this product. photo: John Karl

The Director of the U.S. Environmental Protection Agency's Great Lakes National Programs Office, Gary Gulezian, visited Madison and Milwaukee in July in a solicitation for public comment on the Great Lakes Restoration Initiative. Wisconsin was the first of the eight Great Lakes states that EPA visited in an effort to jump-start clean-up efforts. EPA has established five focus areas for the first round of projects: toxic substances; invasive species; non-point source pollution and the health of nearshore environments; wildlife and habitat restoration; and program administration, including accountability, monitoring and evaluation. The initiative is backed by up to $475 million. "This is one of the most exciting things I've seen in years," said Larry McDonald, who sits on the Wisconsin Sea Grant Advisory Council, as quoted in the *New York Times*.

Asian Carp Threaten Lake Michigan

The $18-million electronic barrier used to keep invasive Asian carp out of the Chicago Sanitary and Ship Canal—and ultimately, Lake Michigan—should do its job effectively, particularly now that the voltage has been doubled to two volts per square inch. But there may be yet another way the fish can end up where they are least wanted. DNA evidence shows that the fish are present in the Des Plaines River, which is in some places only a few yards away from the canal. A heavy January rain over frozen ground may be all that is needed to wash invasive Asian carp from the Des Plaines floodplain into the canal, according to Wisconsin Sea Grant's Phil Moy. A higher levee could keep the fish from making their escape.

The National Sea Grant College Program works closely with the 32 state Sea Grant programs located in every coastal and Great Lakes state and Puerto Rico. Photo courtesy of *http://www.seagrant.noaa.gov/colleges/index.html*

Two Wisconsin Students

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Programs at the National Science Foundation (NSF). In addition to funding science and research, NSF manages the U.S. Antarctic Program which, along with other countries, supports Antarctic research and management.

"I've really enjoyed the camaraderie of the fellowship program and the doors it has opened for me," Vang said. "Never would I have imagined that I would get the opportunity to participate in an international treaty consultative meeting, or assist in an Antarctic site visit! I'm grateful for the skills, contacts, and experiences provided by my fellowship, and I'm looking forward to seeing where it takes me next."

For more information about the Dean John A. Knauss Marine Policy Fellowship, visit *www.seagrant.noaa.gov/knauss/knauss.html*.

People of the Sturgeon

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Bob Rashid

Mary Boettcher of Malone, Wis., hugs the first sturgeon she ever speared.

Wisconsin, lake sturgeon have flourished because of the dedicated work of WDNR staff, university researchers, and a determined group of sturgeon spearers known as Sturgeon For Tomorrow.

Thanks to these efforts, spearers can still flock by the thousands to Lake Winnebago's frozen expanse each winter to take part in a ritual rooted in the traditions of the Menominee and other Wisconsin Indians. In spring, sturgeon enthusiasts line east-central Wisconsin riverbanks to observe—and protect—the massive fish as they spawn. Ultimately, 100 years of sturgeon management on Wisconsin's Lake Winnebago has produced the world's largest and healthiest lake sturgeon population—and may hold answers for struggling sturgeon populations elsewhere in the world.

Through a fascinating collection of images, stories, and interviews, *People of the Sturgeon* chronicles the history of this remarkable fish (which can live for a century and grow to 300 pounds) and the cultural traditions it has spawned. The authors introduce a colorful cast of characters—from conservationists to spear makers to decoy carvers—many with a good fish tale to tell. Color photos by the late Bob Rashid and vintage images from the Wisconsin Historical Society evoke both the magical and the mundane. Weaving together myriad voices and examining the sturgeon's profound cultural impact, the authors reveal how a diverse group of people are now joined together as "people of the sturgeon."

UW Sea Grant has supported lake sturgeon research and outreach since 1981, shortly after Fred Binkowski, in cooperation with Don Czeskleba at the WDNR Wild Rose Fish Hatchery, developed techniques necessary for the first successful artificial propagation of lake sturgeon from eggs to post-fingerling fish, making Wisconsin the first state to successfully raise lake sturgeon under controlled laboratory/hatchery conditions.

In gathering material for the book, the authors and volunteers from Sturgeon For Tomorrow conducted more than 60 interviews with assistance from the UW Center for the Study of Upper Midwestern Cultures. These interviews, as well as donated photos and artifacts, will be archived at the Oshkosh Public Museum, which preserves the heritage of Oshkosh and the Lake Winnebago region.

Sturgeon For Tomorrow, a local nonprofit conservation group, provided $25,000 to support the production and marketing of *People of the Sturgeon*. Through its Sturgeon Spearing License Fund, the WDNR provided additional funds for production and to hire Bob Rashid to serve as the book's photographer. UW Sea Grant provided support through staff time from Kline, the book's lead author, and Tina Yao, who designed the book's visual concept and cover. —KSK

For purchase information, visit *http://aqua.wisc.edu/publications/*


Bob Rashid

"Part natural history, part oral history, and part environmental history, *People of the Sturgeon* gives readers something that is hard to come by these days: an environmental tale with a happy ending...In this fascinating account, you'll see vivid photos, read great fish stories, and meet lots of unforgettable Wisconsin characters. This is a book every sportsman and student of the environment needs to own."

— Robert F. Kennedy, Jr., Professor of Environmental Law, Pace Law School


Luke Ladwig

"Spearers sit patiently in darkhouse shacks perched on the frozen expanse of Lake Winnebago, waiting hours, days—even years—for a giant shadow to glide beneath them. Volunteers patrol the banks of the Wolf River on an April night, listening for the splashing of spawning fish and watching for would-be poachers. Menominee tribesmen dance to mimic the thrashing of these prehistoric giants as they struggle upstream to spawn, then feast in celebration on their smoked flesh as their ancestors have done for millennia. They are all people of the sturgeon, and they are all honored in this book. Few fish are as homely, yet none seems to engender as much affection. *People of the Sturgeon* tells the stories of those whose lives have been deeply touched by this fish, and the story of the fish itself weaves through the narrative to bind it together. It is a marvelous story and a heart-warming read."

— Dan Small, host/producer Outdoor Wisconsin and Outdoors Radio

Above: Carved wooden sturgeon decoys from the Lake Winnebago region have become an identifiable art form, and many carvers design them to be pleasing to their own eyes, not just to the eyes of a sturgeon.

Leo A. Schoebel was an Allis-Chalmers tractor dealer in Fond du Lac. Here he displays both a new tractor and a 142-pound, 80-inch sturgeon he speared in February 1946 at Lakeside Park on the southern part of Lake Winnebago.

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Aquatic Sciences Chronicle

a joint newsletter from UW Sea Grant and UW Water Resources

CALENDAR OF EVENTS

LAKE STURGEON BOWL
FEBRUARY 5–6, 2010
Milwaukee, Wis.
www.glwi.uwm.edu/sturgeonbowl

WISCONSIN WETLAND WETLANDS ASSOCIATION CONFERENCE
FEBRUARY 11–12, 2010
Eau Claire, Wis.
www.wisconsinwetlands.org/2010conference.htm

AMERICAN WATER RESOURCES ASSOCIATION-WISCONSIN SECTION MEETING
MARCH 4–5, 2010
Madison, Wis.
www.awra.org/state/wisconsin

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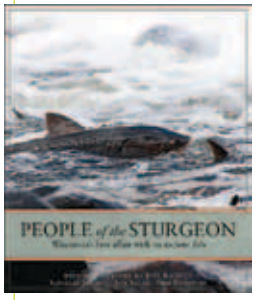
People of the Sturgeon: Wisconsin's Love Affair with an Ancient Fish



by Kathleen Schmitt Kline, Ronald M. Bruch, and Frederick P. Binkowski with photographs by Bob Rashid

320 pages, 215 b/w and color photos, 2 maps, 8"x10" hardcover, ISBN 978-0-87020-431-9
Published by the Wisconsin Historical Society Press

Through a fascinating collection of images, stories, and interviews, *People of the Sturgeon* chronicles the history of this remarkable fish (which can live for a century and grow to 300 pounds) and the cultural traditions it has spawned. The authors introduce a colorful cast of characters, from conservationists to spear makers to decoy carvers—many with a good fish tale to tell. Includes color photos by the late Bob Rashid and vintage images from the Wisconsin Historical Society. These copies have been signed by the authors!

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