



From Shore to Shore

A publication of the University of Minnesota
Shoreland Education Team

May - June 2012

Issue #109

www.shorelandmanagement.org

Climate, Communities, Sea Grant

Sharon Moen, Minnesota Sea Grant, smoen@umn.edu, (218) 726-6195

Droughts and gully washers aren't new phenomena but extreme weather has become more frequent, if not more dramatic. In what has become a dizzying tornado of information about climate change, climate politics, and carbon emissions, it is challenging to make decisions about how to "weather the weather," so to speak. Sea Grant offices around the country are taking on this challenge. The Minnesota and Wisconsin Sea Grant Programs welcomed Diane Desotelle to their ranks in February. Desotelle fills a new part-time position as a Climate Change Extension Educator.

Desotelle, a civil engineer, hydrologist and educator by training, has been filtering through documents, journal articles and reports so that she can help communities that are grappling with more intense weather events and deliberating over how a changing climate might affect their economies and environments. She suggests that factoring current trends in temperature and precipitation into community planning could save headaches and money in the future. She is enthusiastic about creating opportunities to explore the drawbacks and benefits of investing in structures and practices to ensure homes, businesses and the environment persist through predicted climatic changes.

Speaking about Lake Superior's north and south shores, Desotelle said, "Stormwater systems built 100 or even 50 years ago



can be overwhelmed by the increase in extreme storm events this region has been experiencing. Replacing or reconstructing aged stormwater pipes with a new climate regime in mind promises to be cost-effective in the long run."

Jesse Schomberg, Minnesota Sea Grant's Program Leader and Land Use Planning Extension Educator, was deeply involved in creating Desotelle's climate change extension educator position.

"I've seen an increase in the number of climate-related issues faced by North

Shore communities," said Schomberg. "Community officials want sound suggestions for replacing infrastructure and good information on how public health, emergency services, tourism, and the environment will be affected by a changing climate. Given her background, Diane is an ideal person for serving as our liaison between climate scientists and citizens of the western Lake Superior basin."

Funding for Desotelle's position came from the U.S. Environmental Protection Agency through the National Oceanic and Atmospheric Administration, and is part of the Great Lakes Restoration Initiative.

More information about Desotelle and Minnesota Sea Grant's climate work, see: www.seagrant.umn.edu. ■

Inside...

- ② **Mosquitofish Misnomer - Don't Judge a Book by its Cover, or a Fish by its Name**
- ③ **Minnows - One of Minnesota's Smallest, Yet Most Important, Fish**
- ④ **Wild Rice is Not a Weed**

Mosquitofish Misnomer – Don't Judge a Book by its Cover, or a Fish by its Name

Marte Thabes Kitson, AIS Education Specialist, National Park Service Liaison & Minnesota Sea Grant College Program;
mkitson@d.umn.edu, 218-726-8305

"Bzzzzzz, zzzzzz, zzzzz." We've all heard, seen, or felt a mosquito hovering just above us, waiting to strike. Would you give up the healthy ecosystem of a lake to silence the din?

Some places have by introducing a three-inch fish touted as a biological mosquito management tool. Not subtly or necessarily accurately named, mosquitofish are native to the Atlantic and Gulf Slope drainages in the United States. They have been widely distributed throughout the world. The first known human-mediated range expansions of mosquitofish in the United States occurred around 1900.

Mosquitofish are related to other aquarium fishes such as guppies, mollies, platies, and swordtails. Mosquitofish are known for their ability to inhabit low-oxygen environments and their omnivorous palate. In short, these fish aren't picky. They will eat



mosquito larvae, but have also been known to dine on native fish eggs, including those of largemouth bass. They serve up stiff competition for native minnows and some amphibians, leading to population declines and in some cases local extinction (extirpation) of native fish and other aquatic life.

Mosquitofish will also feed on herbivorous zooplankton, which keeps algal blooms in check, and they feed on invertebrate predators that normally help manage mosquitoes. Damselfly populations in Hawaii, for example, have declined where mosquitofish are present.

Mosquitofish are small, stout, and dull gray with a rounded tail and upturned mouth. If you have purchased mosqui-

tofish for a water garden or rain barrel, do not release them into the wild. As with any other water garden or aquarium fish, ascribe to these sensible alternatives to release:

- Contact a retailer for proper handling advice or for possible returns.
- Give/trade with another aquarist, pond owner or water gardener.
- Donate to a local aquarium society, school, or aquatic business.
- Contact a veterinarian or pet retailer for humane disposal of animals.

For more information, visit www.dnr.state.mn.us/habitattitude. ■



Habitattitude™

PROTECT OUR ENVIRONMENT
DO NOT RELEASE FISH AND AQUATIC PLANTS

PIJAC • U.S. FISH & WILDLIFE SERVICE • NOAA'S SEA GRANT

www.Habitattitude.net

Minnows – One of Minnesota’s Smallest, Yet Most Important, Fish

Nick Phelps, Aquaculture Research and Extension, University of Minnesota; phelp083@umn.edu

For many Minnesotans, the arrival of spring means one thing: fishing opener! Like the other 1.4-million Minnesotans with a fishing license, I have been dreaming all winter of getting in the boat and catching a few fish. However, before all the fishermen can get on the water, quite a bit of fishing has already been done. Minnesota’s aquaculture and minnow harvest industries brave the unpredictable elements of early spring to catch the minnows we use for bait.

Although small, minnows are a big part of Minnesota’s economy. The 2005 USDA Census on Aquaculture found that Minnesota-harvested minnows fetched over \$5 million in the wholesale market. That number translates into hundreds of millions of little fish! The value is then multiplied at the retail level when bait shops sell the fish to the angling public. Furthermore, the indirect value of Minnesota production goes a long way to support one of the nation’s largest recreational fishing industries, valued in the multi-billions of dollars.

Minnow harvest and culture in Minnesota is a longstanding tradition. These practices go back generations for some Minnesota families who make their living harvesting and/or raising minnows. The first private fish hatchery licenses were issued in the 1920s, and were primarily used for raising white suckers. To this day, white suckers remain a popular baitfish used to catch walleyes, northern pike, and muskies. Since the 1920s, the Minnesota aquaculture industry has grown. Baitfish culture, combined with wild baitfish harvest, has made Minnesota’s baitfish industry the second largest in the nation. This is important because in Minnesota all fish used for bait must be raised or harvested in the state. Importing fish from



Minnow farm in Staples, Minn. Adult minnows are trapped or netted periodically to supply local bait shops. The paddle wheel maintains high oxygen levels and water flow - both necessary for minnow health. The netting above helps reduce predation by birds, which can account for significant production loss.

out-of-state for use as bait has been prohibited for about 50 years.

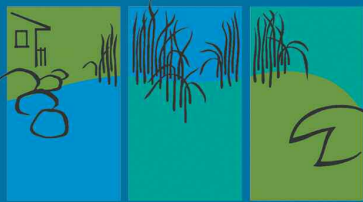
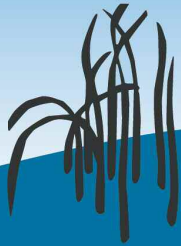
For the aquaculture and baitfish industries to be passed on to the next generation, however, they must adjust to mounting pressures. The introduction of aquatic invasive species (AIS) (such as zebra mussels), and diseases (such as viral hemorrhagic septicemia), have forever changed the industry. For example, commercially licensed bait harvesters who wish to harvest from designated AIS-infested waters must take an AIS training course (offered by the MN DNR), keep a separate set of equipment which is designated to be used only in AIS-infested waters, and inspect their fish for the presence of AIS. To monitor for fish diseases, producers are required to have annual diagnostic inspections prior to moving fish. Although these adjustments are often difficult and

expensive, everyone involved sees the value of protecting the natural resources, and in turn, the industry and supply of minnows.

While AIS continue to spread, there has been no evidence of an AIS or reportable fish disease spread by the baitfish industry in Minnesota. This is a testament to the industry working hard to elevate their standards, as well as the effectiveness of the current regulatory framework. Minnesota is home to some of the most progressive and creative fish farmers in the region. They are actively researching and implementing biosecurity/AIS prevention plans and new production methods to reduce pressures and protect our natural resources. This has and will continue to help ensure a safe, sustainable supply of these important little fish for years to come. ■

Contact

Karen Terry
University of Minnesota Extension
From Shore to Shore Editor
320-589-1711
kterry@umn.edu



From Shore to Shore

www.shorelandmanagement.org

A publication of the Shoreland Education Team, dedicated to educating Minnesota citizens about shoreland management to improve water quality, habitat, and aesthetics of our lakes and rivers.

From Shore to Shore is available in hard copy and electronic formats. Archived issues are available online at www.shorelandmanagement.org

To subscribe or unsubscribe, please contact Barb LaPlante at bjla@umn.edu or 320-589-1711.

The University of Minnesota is an equal opportunity employer and educator.



UNIVERSITY OF MINNESOTA
EXTENSION

Wild Rice is Not a Weed

Annette Drewes, University of Minnesota Extension, 218-766-1342, aldrewes@umn.edu

Wild rice is a native plant of Minnesota. Threatened in Michigan and Ohio, Minnesota has the largest remaining population of naturally growing wild rice in the nation. Please refrain from removing wild rice from your lakes, if you have it. For more information on wild rice, visit the MN DNR's website or visit www.saveourrice.org. This poster was created based on the "Six word memoir" project – visit www.smithmag.net/sixwords for more information.



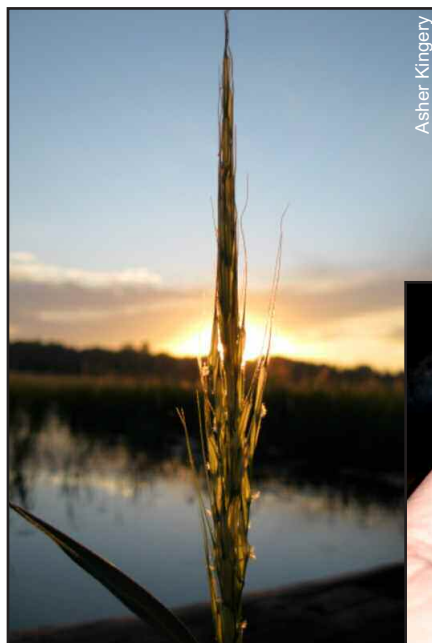
Grows each summer from a seed.



Uproots easily when leaves are floating.



Male flowers showy, female flowers tufts.



A hundred hulls awaiting the sun.



Wild rice, a home, a food.