

Citizen Monitoring Guide to Wisconsin's Freshwater Sponges

Dreux J. Watermolen
Wisconsin Department of Natural Resources



Project Overview

Freshwater sponges are aquatic animals that grow in lakes, rivers, bogs, and streams attached to submerged rocks, sticks, logs, or aquatic vegetation. They feed by filtering small particles from the water, and so are thought to be sensitive indicators of pollution. Wisconsin's freshwater sponges were studied extensively in the 1930s and found to be growing in many lakes and major river systems. Since then, extensive studies have not been done, though some limited research seems to indicate that the range of some species is more restricted than in the 1930s. This Citizen-based Monitoring study will try to shed more light on how abundant and widely distributed Wisconsin's sponges are today. Through this project, we are engaging volunteer monitors and creating a database of probable sponge occurrences that can be further investigated.

Study Area

The Citizen Monitoring of Wisconsin's Freshwater Sponges project is a statewide inventory program. Citizens throughout the state are now able to collect and report data on sponge occurrence in their local lakes and waterways.

What Do Freshwater Sponges Look Like?

Freshwater sponges vary from marble-sized to elongated masses and can grow to be thin or thick encrusting layers. Their surfaces may be smooth, textured or wavy, or have finger-like projections (photos at right). Their structure is supported by spicules, tiny needle-like structures made of silicon that are distributed throughout the sponge body. You can use a magnifying glass to see at least a hint of the needle-like spicules.

Unfortunately, color and shape are not particularly helpful in identifying sponges to the species level. Instead, biologists rely on the spicules, which are quite diverse in their size, shape, and number of prongs (photo, lower right). Some have hooks or are dumbbell-shaped. They can be smooth or spined. Much of this variability is species-specific (i.e. each species has its own sizes and shapes).

Can We Find Freshwater Sponges in Our Lake or Nearby River?

Sponges grow in relatively shallow water and so can be found by wading and observing the surfaces where they might grow. You might find a rake useful for turning over debris. The sponges may be colored green by algae that live inside their cells or they may be beige to brown or pinkish in color. Sponges can be delicate to very firm feeling but are not slimy or filmy. Some sponges prefer the underside of logs and sticks; these are usually not green in color.

Wisconsin's sponges exhibit an annual life history in which they grow through the summer, die back in the winter, and begin a new growth cycle in spring. So, it's best to look for them in late summer and early fall. In late summer, sponges form gemmules, small spherical protective structures that contain cells from which new sponges will grow in spring. The gemmules will appear about the size of poppy seeds, but are tan in color (arrows in photo, below right). They can be clustered or scattered in the sponge.



How Common Are Freshwater Sponges?

We don't know. Since little modern survey research has been conducted, their conservation status remains unknown. Biologists have found sponges in fewer than half of Wisconsin's counties. So there are many gaps in our knowledge.

We created a reporting mechanism by which citizens can help us prioritize waterbodies for future survey efforts.

Please take one of our brochures and share your observations.



What Information Is Being Collected?

Citizen volunteers are asked to answer the following questions:

Where did you observe sponges?

County: _____

Waterbody: _____

Substrate where you observed sponges:

sand

gravel

logs

other: _____

When did you observe sponges?

Date: _____

How many kinds of sponges did you observe?

All sponges appeared to be the same kind

Sponges appeared to be more than one kind

How can we contact you?

Name: _____

Address: _____

Telephone: _____

E-mail: _____

Where Do Volunteers Send Their Reports?

Volunteers can mail their completed questionnaires to:

Dreux Watermolen, SS/7

Wisconsin Dept. of Natural Resources

P.O. Box 7921

Madison, WI 53707-7921

Or they can send all of the requested information by e-mail to dreux.watermolen@wisconsin.gov.

Submitted information will be compiled in a database of probable sponge occurrences.



Acknowledgments

Photographs: Robert Korth and Milwaukee Public Museum

Thanks to Joan Jass, Janis Annesley, and the Milwaukee Public Museum for assistance in developing this sponge monitoring program and the introductory brochure. This project is supported by the Wisconsin Department of Natural Resources' Citizen-Based Monitoring Partnership Program. For more information on the Citizen-Based Monitoring Partnership Program, see <http://cbm.wiatr.net/>.

