

Chemical Control

The Wisconsin Department of Natural Resources conducts and supports a variety of projects that improve our understanding of aquatic invasive species (AIS) and the ways we manage them.

Background

One common approach to AIS control in Wisconsin is the use of herbicides. Research by both DNR staff and our grant-funded partners provides new information about the effectiveness of different chemical control methods, as well as the potential impacts of these chemicals on the environment and non-target species. These and other studies can help the department make sound decisions about the use of chemical management, and identify best practices for effective herbicide applications and monitoring throughout the state.

Effects of microbes and light on herbicide degradation

Researchers at UW-Madison are currently studying how microbes and light affect the breakdown of aquatic herbicides commonly used in lakes for aquatic plant control. Through both lab and field experiments, this study aims to improve the efficacy of future herbicide applications by identifying what factors play a role in the degradation of chemicals after they are applied to treat invasive aquatic plants. The study remains ongoing, but the initial phases of research indicate that sediments at the bottom of lakes may play an important role in the herbicide degradation process.

Effects of herbicides on fish larvae

Scientists at UW-Madison have conducted several laboratory experiments to examine the potential effects of the commonly used herbicide 2,4-D on native fish. While effects on adults and juveniles had been studied previously, less was known about the potential impacts of herbicides on the early life stages of fish. Fathead minnow eggs, larvae, and spawning adults were exposed to several different formulations of 2,4-D. Researchers observed decreases in the survival rates of exposed larvae and identified a potential critical window of exposure from fertilization to 14 days after hatching. These results and related ongoing studies can help us better understand potential non-target impacts of some types of aquatic herbicides.



Dr. Gavin Dehnert

Hybrid watermilfoils

Hybrid watermilfoil (*M. spicatum* x *sibiricum*) populations present unique management challenges for the DNR and our partners. Scientists at Montana State University are using genetic DNA analysis to identify and map native, Eurasian, and hybrid watermilfoil genotypes in lakes across the Midwest to assess presence and abundance of different milfoil genotypes. Researchers are collaborating with various partners to continue monitoring these populations before and after chemical treatments to assess how these treatments affect specific milfoil genotypes. In combination with long-term DNR studies on milfoil populations throughout Wisconsin, this type of research can provide insight into emerging issues such as the development of resistance or tolerance of aquatic invasive plants to herbicides, and informs future best management approaches to monitoring and managing non-native Eurasian and hybrid watermilfoil populations.

Dr. Michael Moody



These projects were supported through donations to aquatic invasive species research. To learn more or donate, visit www.dnr.wi.gov/lakes/sayyestolakes

