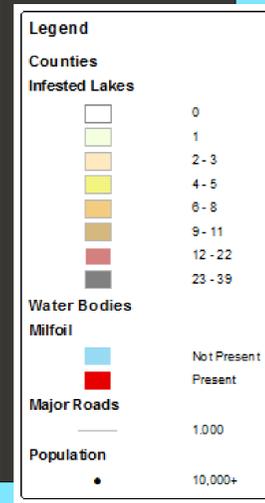
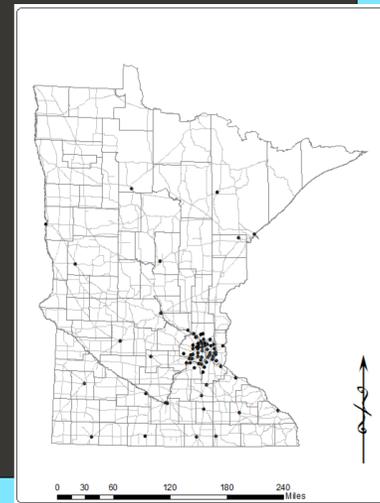


# Mapping the Spread of Eurasian Watermilfoil in Minnesota Water Bodies

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## Minnesota Milfoil Infestation from 1987-2011



### Purpose

I analyzed the spread of Eurasian Watermilfoil in the state of Minnesota in order to gain an idea of how the invasive aquatic species would spread in a virgin region.

Eurasian Watermilfoil (*Myriophyllum spicatum*) is an aquatic species that was accidentally introduced to North America from Europe in the early 20<sup>th</sup> century. It has since spread throughout much of the United States including Minnesota in 1987. It was first discovered in Minnesota's most popular lake, Lake Minnetonka and has since spread to over 250 lakes throughout the state.

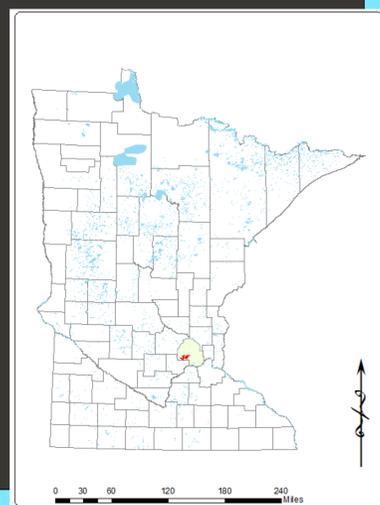
Eurasian milfoil spreads primarily via boat/trailer transportation from lake to lake. It has the ability to form entire new colonies in a lake just from a stem segment so a bit of the plant caught on a boat (in a propeller for example) can result in a whole new colony in another lake. When introduced to a new lake, the milfoil can form thick underwater stems and vast mats of vegetation on the water's surface which not only disrupts recreational activities, but can also smother other important aquatic plants.



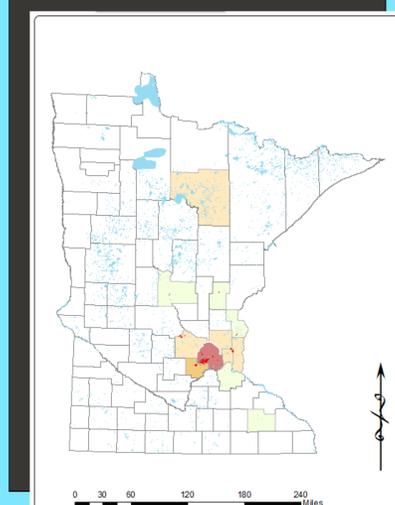
Elizabeth J. Czarapata

photo courtesy of Wisconsin DNR © Elizabeth J. Czarapata

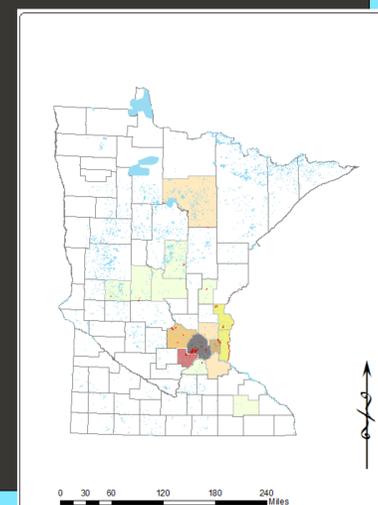
1987



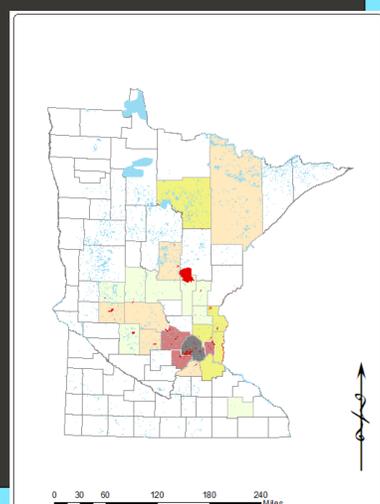
1990



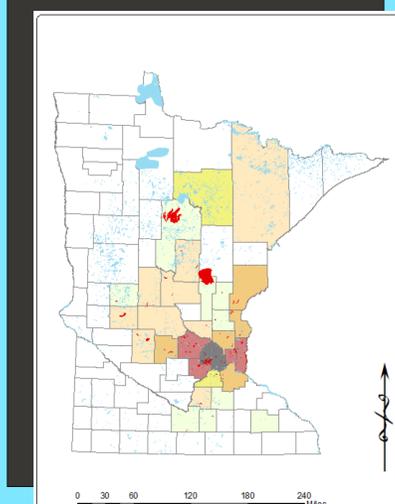
1995



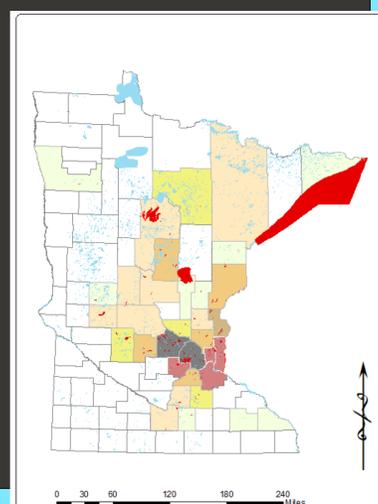
2000



2005



2011



### Methods

Using data from the Minnesota Department of Natural Resources, I input the year that milfoil was discovered in each infested lake. I also had data for major roads and centers of population in Minnesota. I analyzed the data by finding the distance from each infested lake to the nearest major road and center of population with a population of at least 10,000. I then looked at these numbers and the years milfoil was discovered and created a point system to assign a value from 3-30 that would analyze each lake's susceptibility to infestation.

### Results

The average scores under this system (3=least susceptible 30=most susceptible):

Infested Lakes:	21
Year Infested	
1987-1990	24
1991-1995	24
1996-2000	23
2001-2005	20
2006-2011	20

Uninfested Lakes: 9

All Lakes: 9



The data also shows that the counties with the most infested lakes in them tend to be concentrated around the metro area.

### Conclusions

In a virgin region exposed to Eurasian Watermilfoil, provided that water recreation is a prominent activity, the water bodies most susceptible to infestation are those that are close to both major roads and populous cities. This is because these are the water bodies with the most boat traffic and boats are the primary means of milfoil transportation. Generally, the infestation will spread around the populated metro areas and hit the major recreational lakes further from the metro.