

SILTATION:

A CHRONIC PROBLEM FACING MIDWEST LAKES & RESERVOIRS

Siltation is the pollution of water by fine sediments like silts or clays. Intensive agricultural landscapes are vulnerable to accelerated erosion, the primary cause of siltation. Reservoirs associated with rivers and streams trap suspended sediments as flowing water loses energy as it enters the reservoir. Suspended soil materials drop out of the slowed water in relationship to their size and weight. Losing the largest, heaviest particles first and the finest particles last.

Sediment is considered a pollutant for those who require clean water. Water for drinking, cooling or industrial usage are examples of clean water needs for humans. Siltation also can affect navigation channels and irrigation channels creating an expensive maintenance need. Aquatic natural communities are also affected by siltation; different species of mussels, aquatic plants and fish are vulnerable to the effects of siltation.

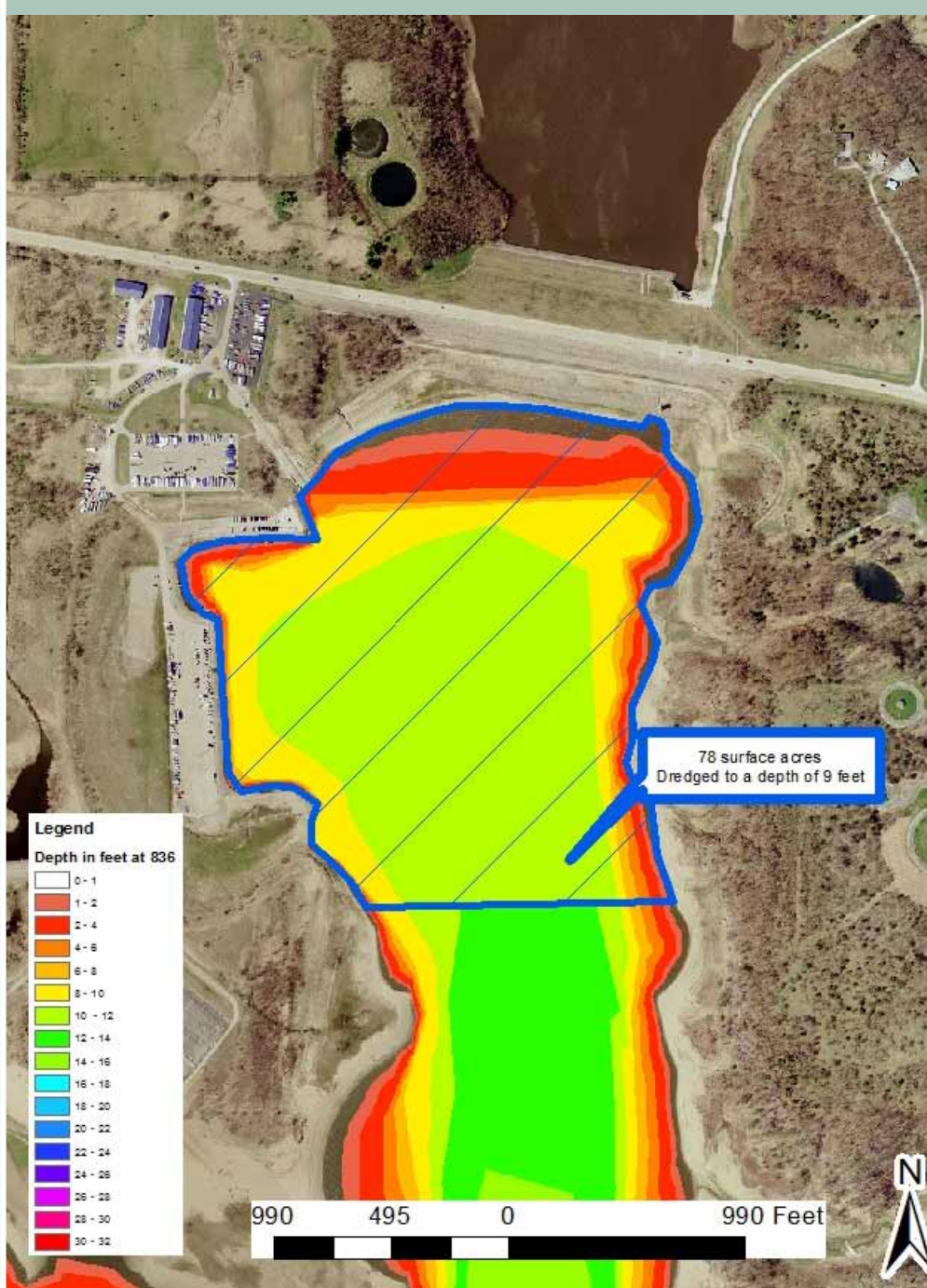
Siltation impacts Saylorville Lake by reducing water storage capacity, reducing recreational use of the water, degrades habitat for fish/mussel populations and promotes excessive algae growth.



COST OF A SILT LADEN SYSTEM

The cost of dealing with siltation in the reservoir is very expensive. Preliminary calculations on two identified targets at Saylorville for dredging estimated the amount of silt deposition to be removed at over five million cubic yards (see location maps). Dredged material disposal is an expensive portion of the project. In addition to the high cost of hydraulic dredging, environmental protection costs include an environmental assessment, real estate actions to purchase land for a disposal site, and restoration to mitigate the spoil site. 400 acres of land (probably agricultural) would have to be purchased to dispose of dredged materials. At best, a dredging operation resets the clock on storage capacity and recreational use. With frequent water level fluctuations, siltation deposition continues in the reservoir and the overall problem persists. The estimated cost to dredge these two locations on the lake is over \$100 million.

SAYLORVILLE LAKE MARINA
BATHYMETRIC MAP



SAYLORVILLE LAKE MUDFLATS
BATHYMETRIC MAP

