



Minnows and smaller fish can be easily disrupted by dredging, affecting a lake's entire ecological balance

## DREDGING can have a wide range of impacts and unintended consequences on lakes, including:

- » Releasing toxic materials
- » Harming fisheries & ecosystems
- » Damaging or destabilizing neighboring properties
- » Allowing invasive species to prosper
- » Reducing water quality

Dredging is the process of removing material from river or lake bottoms, often to reshape an area. When done carefully, dredging can be an effective tool for increasing access to our waterways.

Due to dredging's many potential ecological impacts, a significant amount of site-specific study and precaution is needed to avoid harming neighboring property, fish populations and ecosystems; disturbing toxic materials; promoting growth of invasive species; and generally reducing water quality.

## Impacts on fisheries and ecosystems

Dredging disturbs ecosystems by removing and killing critical organisms on river or lake bottoms that help purify the water, cycle nutrients and stabilize lakebed, among other things. These organisms also play an important role at the base of aquatic food chains, and changes in those populations can have cascading impacts throughout the aquatic ecosystem.<sup>1</sup>

Dredging can also change the properties of the water in ways that directly impact fisheries, such as decreasing clarity and increasing sedimentation in the near term, and altering the landscapes where fish live or spawn in the long term.<sup>2</sup> For example, while smaller fish and minnows often live in the shallow water of a lake, dredging can upset spawning and make those areas accessible to larger predators, disrupting the ecological balance that sustains game fish.

## Neighboring property impacts

Since dredging involves the removal of sediment, it has a direct impact on the shape of lake or river bodies. However, the impact is not always limited to the immediate area; it can also change sediment stability, impacting neighboring structures.

Dredging can change sediment stability, impacting neighboring structures

## Reduced water quality

Dredging in lakes can have significant impacts on water quality as well; for example, organic matter and nutrients released during dredging can trigger algal blooms.<sup>3</sup> Stinky, rotting algae on shores is major concern for lakefront property owners.

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1. See, e.g., Covich, A., Palmer, M., and T. Crowl. 1999. The Role of Benthic Invertebrate Species in Freshwater Ecosystems: Zoobenthic species influence energy flows and nutrient cycling. *BioScience* 49/2:119-127.

2. See, e.g., Webb, C., Wisconsin Department of Natural Resources. 2001. Environmental Analysis on Dredging in Door County. EA0006.

3. Webb, C., Op. Cit.



## How is lakebed dredging different from river dredging?

While some impacts from lakebed dredging and river dredging are similar, there are a number of important differences. One reason is that the water flow through rivers means they are generally dynamic systems more resilient to change.<sup>6</sup> In addition, property ownership of a river is much different from that of a lake. A riverfront property owner owns the riverbed to the navigational channel, whereas a lakefront property owner only owns to the Ordinary High Water Mark. The rest of the waterway is publicly owned.

## Release of toxic materials

Over time, toxic chemicals such as heavy metals and other pollutants can settle out of water and accumulate in sediments. Dredging disturbs those sediments, potentially releasing the toxic materials back into the water and environment.<sup>4</sup> Some chemicals, like mercury, may even have changed their chemical state and become more hazardous during burial. Dredging also causes water flow to change, resulting in additional disturbance of sediments.

Dredging must be done with care for the individual circumstances of each property

## Invasive species

Healthy aquatic communities help protect against invasion by non-native species. By disturbing the natural habitat of the lakebed and damaging or destroying native plants and leaving behind bare sediment, dredging allows invasive species to gain an easy foothold in lakes<sup>5</sup> and allow them to spread to new areas.

## How is dredging currently controlled?

Currently, the Wisconsin DNR allows dredging through an individual permit. The individual permit process allows lakefront property owners the ability to dredge while minimizing the impacts to fish habitats and lakebed.

## Assembly Bill 600/Senate Bill 459

A recently proposed bill in Wisconsin would allow each lakefront property owner to dredge up to 30 cubic yards EACH YEAR, equaling 3 dump trucks, with only a general permit which is not tailored to the lake's unique ecology or neighbor and habitat concerns. The proposal also allows up to 100 cubic yards, or 10 dump trucks' worth, to be removed on the Great Lakes. While dredging can be a useful tool for waterfront property owners, it must be done with care for the individual circumstances of each property, not granted under a blanket permit that doesn't consider how those removed materials will impact the neighbors' property, game fish populations, sediment stability, and presence of toxic material.



AB 600/SB 459 would allow up to 3 dump trucks of material to be dredged by each lakefront property owner each year



Dredging can disrupt the ecological balance that sustains game fish

4. See, e.g., G. Davidson et al. 2005. Trace Elements in Sediments of an Aging Reservoir in Rural Mississippi: Potential for Mobilization Following Dredging. *Water, Air, and Soil Pollution* 163: 281-292.  
 5. See, e.g. N. Nichols. 2007. Disturbance and Invasions: Protect the good, improve the not-so-good. *The Lake Connection*. Wisconsin Association of Lakes.  
 6. See, e.g. Reice, R., Wissmar, R., and R. Naiman. 1990. Disturbance regimes, resilience, and recovery of animal communities and habitats in lotic ecosystems, *Environmental Management* 14:5/647-659.