

Excessive Boat Wake

Wakes are waves caused by a boat moving through the water. Excessive boat wakes have a negative effect on the aquatic environment.

The erosion of coastal, stream and lake shorelines caused by excessive boat wakes pose a number of harmful effects on the aquatic environment, impact related wildlife habitat, cause personal injuries, and lead to significant property damage. Wakes or the waves generated by passing boats strike stream banks and shorelines with surprising force and wash away the soil as wave energy is dissipated on the beach. Wakes generated within a marina can cause substantial damage to moored vessels and loosen their moorings.

A number of factors contribute to the size of a wake or wave generated by a moving boat. Among these are the size the channel being traversed, distance from the shore, vessel speed, the condition and shape of the propeller, and hull shape. Damage caused by a wake is directly related to its height, a wave that is 9.8 inches high causes five times more damage than one that is only 4.9 inches tall. The Minnesota Department of Natural Resources states that a wake of 4.9 inches, typically generated by a boat traveling less than 6.2 miles per hour, does not cause shoreline damage or erosion.

The Environmental Consequences of Boat Wakes

The action of excessive boat wake and propeller wash physically destroys coastal shorelines and stream banks. This damage increases the sedimentation and turbidity of the water column creating an environment harmful to fish. Sediments contain nutrients like nitrogen and phosphorous that promote the growth of algal blooms that further reduce habitat and water quality.

Significant numbers of birds and aquatic wildlife depend on shoreline habitat. Even a little loss of shoreline soil can cause major declines in wildlife populations that depend on the habitat. Generated sediments cover fish, frog, and insect eggs in the water, smothering them. Wakes can swamp or destroy the nests of birds like loons.

Personal and Property Damage Caused by Excessive Wake

Wake erosion causes the direct loss of land and impacts the value of waterfront real estate. The Canadian government has documented erosion rates in archipelago areas near Montréal of 5.4 feet per year. The violent motion caused by a wake can damage moored vessels. These waves can cause those standing on a boat to fall and are hazardous to swimmers in the water.

Suggestions for Reducing Excessive Boat Wakes

One of the best things a boater can do to reduce wake is to understand the behavior of their boat at various speeds. A vessel at a slow hull displacement speed generates much less wake than a boat up on plane. A planing hull causes less wake than a boat transitioning to planing speed. Here are a few additional hints for reducing boat wakes:

- **Take steps to learn of local sensitive shore side areas and operate near them accordingly**
- **Maintain a reasonable distance from shore. The further a boat is from shore, the less damage it causes**
- **Take a class or learn from an experienced boater how to improve boat handling skills concentrating on use of trim and throttle**
- **Match the propeller used to the boat and keep it in good condition**
- **Make beach landings at recognized locations to reduce damage**
- **Install trim tabs**
- **Load the boat evenly and match weight to available horsepower**

Boaters can directly influence the impact their craft have on the environment and the amount of erosion caused by boat wakes. Many new clean boating programs have recognized the importance of addressing this issue and are taking steps to better educate the boating public. Protecting the aquatic environment preserves future access to these natural resources by boaters into the future.