



BLUE PAPER

Managing Our Shoreline

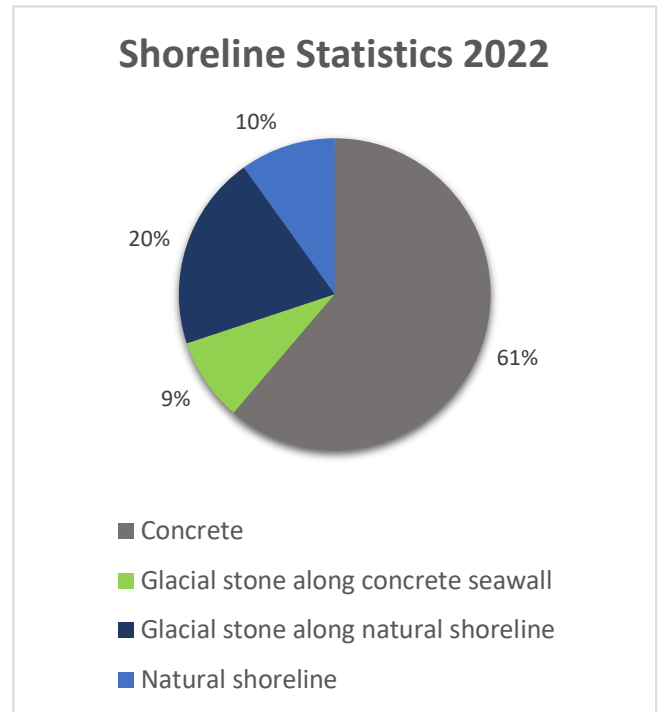
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Our last Blue Paper (linked [here](#)) focused on wave action and how it impacts the overall health of lakes. In this Blue Paper, we will discuss what can be done to reduce the effect of wave action by modifying existing shorelines.

Shoreline Survey Results

Recently the Conservancy conducted a survey to determine the shoreline makeup of Clear Lake and Round Lake. For our study, we created four shoreline categories: concrete seawall, glacial stone along concrete seawall, glacial stone along natural shoreline, and natural shoreline. We found a majority of the Clear Lake shoreline is comprised of concrete seawalls as shown in the pie chart to the right. Round Lake has mostly natural shoreline.

We grouped properties that had metal or wooden seawalls within the concrete category. Shorelines with beaches were categorized as if the beach were not present. For example, a beach along a concrete seawall was grouped in with the concrete seawall data points whereas a property with beach along natural shoreline was categorized as natural shoreline.



What is a concrete seawall?

Concrete shorelines can range from steeply sloped to completely vertical slabs of concrete. As we learned in the previous Blue Paper, concrete does not dissipate wave energy and often leads adjacent property owners to install concrete seawalls. Concrete seawalls require long term maintenance to ensure the seawall does not break apart and collapse.

Benefit: Concrete seawalls provide immediate erosion protection.





What is a glacial stone seawall?

A glacial stone shoreline is a gradually sloping shoreline covered with layers of rounded stones called glacial stone or field stone.

Benefits: Glacial stone dissipates wave action and reduces erosion. It decreases the amount of sediment suspended in the water leading to better water quality. Wildlife can use crevices in the glacial stone seawall.

What is a natural shoreline?

A natural shoreline consists of native flowers, grasses, sedges, trees, and shrubs growing along the water's edge.

Benefits: Native plants reduce excess nutrients and pollutants from entering the lake and stabilize the soil. Aquatic plants reduce wave action and decrease scouring. Natural shorelines absorb wave action and reduce erosion of neighboring properties.



Why is your shoreline important?

In 2015, 17 Clear Lake properties **refaced** their concrete seawalls with glacial stone. This was roughly 1,005 ft of seawall. As a result, the refaced shorelines have captured an estimated 1,917 lbs. of sediment, 1,917 lbs. of phosphorous, and 3,836 lbs. of nitrogen per year that would otherwise be churned up and resuspended from the bottom of the lake. That is the equivalent of about 27 five-gallon buckets of sediment, 27 five-gallon buckets of phosphorus, and about 55 five-gallon buckets of nitrogen.

How to improve your shoreline?

An excellent step toward improving the shoreline is to **reface** existing concrete or metal seawalls with glacial stone. Glacial stone seawalls can be improved by planting native aquatic plants to further solidify the shoreline. If your property has a natural shoreline, consider keeping it as natural as possible.

Regardless of the shoreline makeup, native landscaping to the water's edge can also help improve your shoreline. Native plants have deep roots and help in preventing excess nutrients, sediments, and pollutants from entering the lake. Native landscaping also deters geese! Geese do not like to be near tall plants as they fear predators could be hiding there. Geese will avoid coming onto land with vegetation reducing the amount of goose droppings on the shore.

For more information visit the links below:

Natural Shoreline Resources: <https://clp.indiana.edu/doc/fact-sheets/sustainable-shorelines.pdf>

Glacial Stone Seawall Resources: <https://watershedfoundation.org/wp-content/uploads/2021/08/HSI-2021-Info-Packet.pdf>
<http://wacf.com/healthy-shorelines/glacial/>