

# Chapter 7. Shoreline Projects

## Introduction and Summary

The shoreland area is valuable for promoting a natural lake environment and a natural lake experience for lake users. Shoreline buffers of native plants not only filter and absorb overland runoff, they also prevent shoreline erosion, attract songbirds and butterflies and deter nuisance geese. The shoreland is defined as the upland area about 300 to 1,000 feet back from the shoreline, and out into the lake about the end of your dock.

The PGOLID Lakes encompass approximately 1,117 parcels in total. In 2004, Blue Water Science conducted a shoreline inventory survey for PGOLID. In this survey, a photograph was taken of each parcel and the parcel was rated as to its vegetative cover. In all, approximately 40% of the parcels in PGOLID meet the natural ranking criteria for shorelines and upland areas. This is about average compared to other lakes found in northern Minnesota; however, these results show a great potential for improvement.

PGOLID took this shoreline inventory information and applied for a DNR Shoreline Habitat Restoration Grant to restore natural conditions to participating properties. PGOLID has now received three consecutive DNR grants and completed 15 restoration projects since 2009. These projects will act as demonstration sites for other property owners to see the benefits of a natural shoreline.

In the next few years, it is recommended to repeat the 2004 shoreline inventory project and see if there is improvement in the percentage of parcels that have over 50% natural vegetation.

## 2004 Shoreline Inventory (Blue Water Science)

The shoreland area encompasses three components: the upland fringe, the shoreline, and shallow water area by the shore. A photographic inventory of Pelican Lake shoreline was conducted on July 17, August 21, and September 16, 2004 by Blue Water Science. The objectives of the survey were to characterize existing shoreland conditions which will serve as a benchmark for future comparisons.

For each photograph the shoreline and the upland condition were looked at and evaluated. The criteria for natural conditions were the presence of 50% native vegetation in the understory and at least 50% natural vegetation along the shoreline in a strip at least 15 feet deep (Figure 7.1). Shorelines and uplands at the 75% natural level were evaluated as well.

A summary of the inventory results is shown in Table 7.1. Based on the subjective criteria over 40% of the parcels in Pelican Lake shoreland area meet the natural ranking criteria for shorelines and upland areas. This is about average compared to other lakes found in the Northern Minnesota data set. In comparing the lakes, Pelican had the least amount of natural shoreline condition and Little Pelican Lake had the most.

In the next five to ten years proactive volunteer native landscaping could improve the natural aspects of some of parcels. Improving the percentage of naturally landscaped parcels will improve water quality and fish and wildlife habitat in the Pelican Group of Lakes.

Table 7.1. Summary of shoreline buffer and upland conditions in the shoreland area of Pelican Lake. Approximately 1,117 parcels were examined.

|   | Natural Shoreline Condition |              | Natural Upland Condition |              | Undeveloped Photo Parcels | Shoreline Structure Present |              |
|---|-----------------------------|--------------|--------------------------|--------------|---------------------------|-----------------------------|--------------|
|   | >50%                        | >75%         | >50%                     | >75%         |                           | Riprap                      | Wall         |
| <b>PELICAN LAKE TOTALS</b><br>(no. of parcels = 881)        | 21%<br>(181)                | 16%<br>(142) | 21%<br>(183)             | 14%<br>(123) | 14%<br>(2)                | 68%<br>(596)                | 18%<br>(158) |
| <b>LITTLE PELICAN LAKE TOTALS</b><br>(no. of parcels = 119) | 66%<br>(79)                 | 61%<br>(73)  | 55%<br>(65)              | 61%<br>(51)  | 33%<br>(39)               | 23%<br>(27)                 | 0%<br>(0)    |
| <b>BASS LAKE TOTALS</b><br>(no. of parcels = 22)            | 41%<br>(9)                  | 41%<br>(9)   | 6%<br>(27)               | 3%<br>(14)   | 0%<br>(0)                 | 27%<br>(6)                  | 5%<br>(1)    |
| <b>FISH LAKE TOTALS</b><br>(no. of parcels = 95)            | 43%<br>(41)                 | 36%<br>(38)  | 38%<br>(36)              | 36%<br>(34)  | 21%<br>(20)               | 48%<br>(46)                 | 2%<br>(2)    |
| <b>PGOLID TOTAL</b><br>(no. of parcels = 1,117)             | 28%<br>(310)                | 23%<br>(262) | 28%<br>(311)             | 20%<br>(222) | 5%<br>(61)                | 60%<br>(675)                | 14%<br>(161) |



Figure 7.1 Both of the pictures are from Pelican Lake.  
 [bottom] This parcel would rate as having a shoreline with a buffer greater than 50% of the lot width and an understory with greater than 50% natural cover.  
 [top] These parcels would not qualify as having a natural shoreline buffer greater than 50% of the lot width. Also the understory in the upland area would be rated as having less than 50% natural cover.

## 2009-2015 DNR Shoreline Habitat Restoration Grants

In 2009, the PGOLID Water Resource Coordinator applied for a Shoreline Habitat Restoration Grant. This grant program is funded by the Minnesota Department of Natural Resources (DNR) and being implemented to protect the Pelican Group of Lakes water quality through shoreline buffers.

The purpose of this project was to educate PGOLID property owners about shoreline restoration and show them that it is not very hard to do. In order to improve the shoreline conditions in PGOLID lakes, people's attitudes need to be changed as to what is beautiful near the lake. The goal is to have property owners appreciate natural conditions over manicured lawns.

The restoration requirements to qualify for this grant funding are as follows. Projects require that at least 75% of the frontage is restored with an adjacent native plant buffer zone that is at least 25 ft deep/wide. The focus of these restoration projects must be on reestablishing native vegetation. Funds cannot be used for rock riprap stabilization or permanent wave breaks. In addition, funds cannot be used for new structures such as stairs.

Funds can be used for materials needed to reestablish native vegetation along shorelines. This may include: native trees, shrubs, plants and seeds; temporary biodegradable toe protection and erosion control fabric, mulch; herbicide to treat invasive species; controlled burns to prep or maintain the restoration site, labor to design, install and maintain the restoration project, temporary biodegradable wave breaks and fencing to keep out foot traffic or herbivores (geese/muskrats) from the site.

Projects should not destroy existing, desirable habitat or native vegetation. Only local, native species may be included within the project area. No exotic species or nursery-derived cultivars of natives may be used. Plants included in the project should be native to the county and grow in natural, reference sites along the lake or similar nearby ecosystems.

Since 2009, 15 properties have participated in this program.

- In 2009, PGOLID was awarded a \$25,000 grant for restoring shoreline properties back to their natural conditions. 6 properties were planted.
- In 2011, PGOLID was awarded a \$21,500 grant for restoring shoreline properties. 7 projects were completed with this funding.
- In 2013, PGOLID was awarded a \$20,000 grant for restoring shoreline properties. 2 projects were completed with this funding.

One of the participant's before and after photos are shown on the next page. On this property, railroad ties were removed and the area was filled in with soil, covered with landscape fabric, and planted with shrubs.



Shoreline project  
"BEFORE"



Shoreline Project  
"DURING"



Shoreline project  
"AFTER"