Clam Lake Shoreline Survey
Greenbelt Report

Friends of Clam Lake
And
Three Lakes Association

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Introduction and Acknowledgments

The template for this report is the 'Lake Bellaire Shoreline Survey Summary Report' published by Three Lakes Association, August 30, 2008. Excerpts have been used with their permission. The support of Dean Branson, TLA President, and Norton Bretz, TLA Executive Director, has been invaluable in all phases of this study.

Purpose

The purpose of the shoreline greenbelt survey was to evaluate the condition of the natural greenbelt buffer along the shoreline of Lake Bellaire in Antrim County, Michigan. Greenbelt buffers are extremely important to maintain high quality water and a healthy fishery. This survey provides a baseline of knowledge about the condition of the shoreline and points the direction toward its improvement. It is important for property owners to be aware of what constitutes a healthy shoreline. This report aims to encourage good stewardship of lakeshore properties.

The value of a greenbelt buffer is to provide a habitat for both animals and plants and reduces the impact of human activities on the lake. This buffer also forms a layer of protection to keep manmade chemicals and nutrients from entering the water. A key nutrient in our lakes produced by humans is phosphorus. The amount of phosphorus in a lake can make a huge difference on its health. Living organisms need phosphorus to live, but too much of this element can also be a problem. Some sources of phosphorus are lawn and farm fertilizers, decaying plants, runoff, and sewage. Runoff not only dissolves phosphorus from soils but also carries sediment rapidly into the lake. In areas with no greenbelt buffer the nutrients are carried directly into the lake. In extreme cases this can cause massive algal and aquatic plant growth. A greenbelt buffer is one of the best ways to protect the lake from both nutrients and sediment and native plants typically require less upkeep than invasives.

Background

The boundary between the water and the land is important. When riparians alter this boundary the result can cause problems in maintaining a natural balance for aquatic life. Seawalls and riprap do not provide the natural habitat for aquatic creatures. A better solution would be to stabilize the shoreline with bushes and other plants. The deeper this buffer region the better, but this survey has concentrated on the region within 40' of the shoreline.

Septic systems are commonly used in all residential building construction. Septic systems are regulated by the Northwest Michigan Community Health Agency Unified Sanitary Code. Revised in 2007 the code regulates new septic systems by requiring setbacks from surface water (lake or stream): 100'- absorption fields, 50'- septic tanks and 175'- toe of a mound system. A primary purpose of septic systems is to destroy pathogens. However, septic systems are not as efficient at removing nutrients from the waste stream.

Municipal sewage systems, on the other hand, have a separate step to remove phosphorus and other nutrients. So, a significant portion of nutrients pass through the septic, enter the groundwater, and eventually enter the lake. Nutrients from fertilizers and septic systems are currently unregulated in the watershed. Besides a properly sited and maintained septic system and a minimal use of phosphorus containing domestic waste, greenbelts and area plantings can reduce the amount of phosphorus than enters the groundwater.

According to the Grand Traverse Bay Watershed Protection Plan, the major threats to high water quality within the watershed are *sediments* from erosion and stormwater runoff and *nutrients* from fertilizers, stormwater runoff, and sewer and septic systems. *Sediments* are regulated by the Michigan Department of Environmental Quality. Antrim County is adopting a Soil Erosion, Sedimentation, and Stormwater Runoff Control Ordinance. Erosion is influenced by four factors: precipitation, soil type, slope, and vegetation. This survey looks at two of these our factors: slope and vegetation. According to the US Department of Agriculture General Soil Survey of Antrim County, Michigan (1978) the shoreline soil of Lake Bellaire is Tawas-Ensley-Roscommon. This soil is characterized by very poorly drained and poorly drained, mucky, loamy, and sandy soil.

General Survey Methods and Partners

During the summer of 2008, Friends of Clam Lake and Three Lakes Association conducted a survey of the greenbelt buffer along the entire 8.8 mile shoreline zone of Clam Lake and Clam River. The shoreline of Clam Lake is located in two townships: Forest Home, and Helena. This survey was carried out by Friends of Clam Lake and Three Lakes Association with high school interns from Elk Rapids, Central Lake, and Bellaire.

In all 257 properties were surveyed. For the purposes of this survey the shoreline zone extends 25 feet inland from the ordinary high water mark. Data was recorded on a survey sheet by trained observers. A survey form was completed and a photographs were taken of each property.

The survey method was modified from a method used by Tip of the Mitt Watershed Council on Walloon Lake and a more recent survey of Torch Lake done by the Watershed Center and White Pines Associates sponsored by the Michigan Department of Environmental Quality. Several volunteers from Friends of Clam Lake and Three Lakes Association provided valuable field assistance.

Specific Methodology used on Clam Lake

As was done in the surveys of Torch and Bellaire Lakes, data was obtained from the county assessment rolls in the form of a spreadsheet. In addition, maps were obtained showing the parcel locations.

In the previous surveys, the parcel maps were used to identify each parcel along the shoreline by first identifying the house from the road. When the house numbers were located, the team noted the building type and color on the survey forms. These forms, with building descriptions were then used by the boat crews to identify the properties.

For the Clam Lake survey, the parcel maps were marked with a survey order number starting at the south side of Clam River at Torch Lake entrance and sequentially numbering counterclockwise around the lake, ending at the north side of Clam River. (Figure 1) This survey order number facilitated matching map location, the associated photographs and property data contained on the spreadsheet. The need for a road survey was eliminated by taking aerial photographs of the entire shoreline. These digital images were then matched with the parcel map and marked with the corresponding survey order number, using photo editing software. (Figure 2)

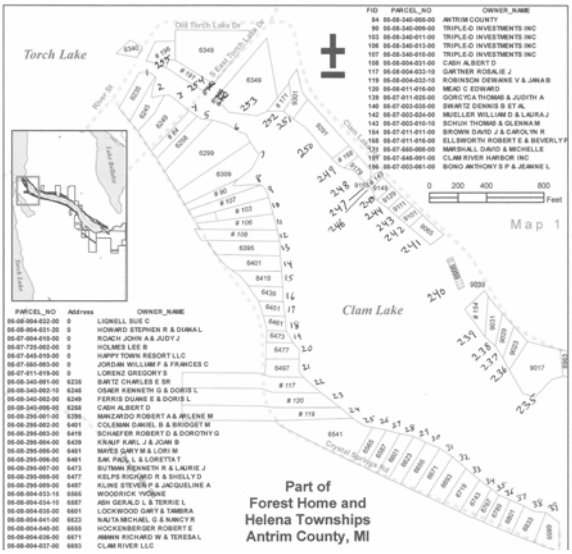


Figure 1 - Sample Parcel Map

Another change made for the Clam Lake survey was the use of pre-printed survey forms used by the survey team. (Attachment A) The forms had the property data completed with the survey order number printed at the top. These forms allowed the survey team to easily reference the marked aerial photographs and identify the correct section of shoreline to be surveyed. This eliminated the need for the road reconnaissance step as well as providing a photographic documentation of the shoreline and back property.

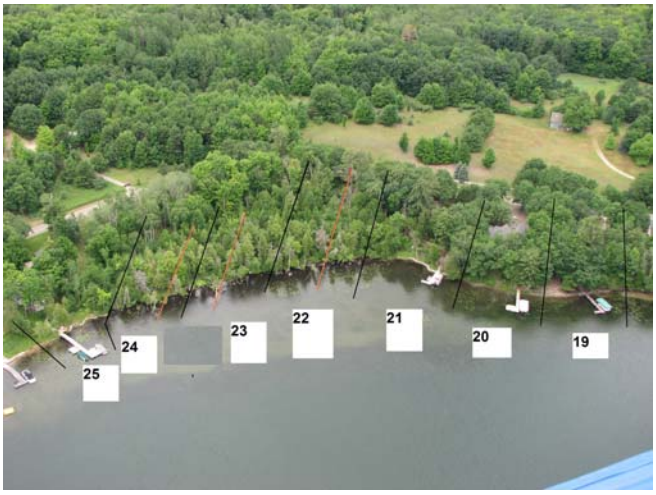


Figure 2 - Sample Shoreline Aerial Photo

Photographs where also taken from the

water at the same time the survey observation were made. (Figure 3) The shoreline observations were from the high water mark back 25 feet. Thus, no data was taken on the number of boats, docks, rafts, and etc.

Figure 3 - Sample Shoreline Photo

Results

The data recorded on the second page of the survey form (Attachment A), were entered into the spreadsheet containing the original assessment roll data. The summary results and individual property scores were then calculated. There were inconsistencies between the maps and assessment roll data that was not full resolved for some parcels. These discrepancies should have little effect on the summary data for the lake but may be significant for any property miss identified. The individual parcel data will not be released except to the property owner. (Attachment B) Any error discovered will be corrected. The photographs, both aerial and lake level, will also be made available, upon request.

Table #1 -- Clam Lake Shoreline Development

	Developed			Undeveloped NOT Protected			Undeveloped and Protected		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	83	11165	54.7%	38	5662	27.7%	4	3590	17.6%
Helena	95	9959	38.5%	30	12130	46.9%	7	3770	14.6%
Total	178	21123	45.6%	68	17792	38.4%	11	7360	15.9%

Table 1 and Graph 1; show the level of development of the Clam Lake and Clam River shorelines. As used in this report, the term 'developed' refers to any man made structure between the high water mark and back 25 feet. This could just be a walkway. Protected refers to the property being government owner and assumed to stay that way. The Grass River Natural Area is in this classification. Other parcels that are not developed many also be protected by easement but this data was not readily available.

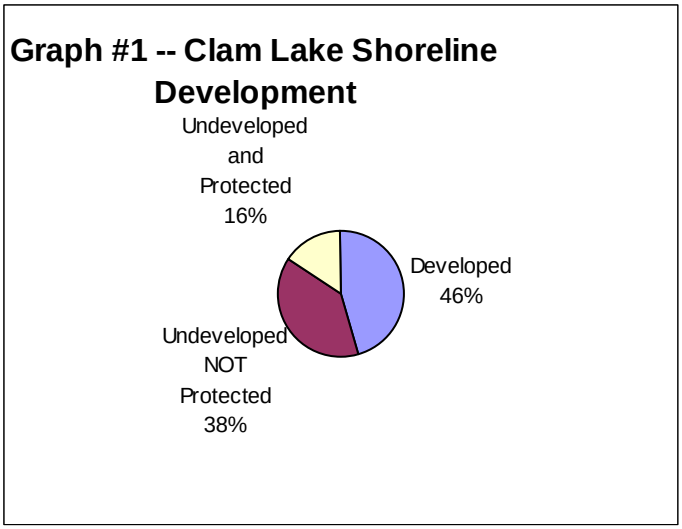


Table 2 and Graph 2; show the summary of the Clam Lake shoreline condition. The term Landscaped refers to shoreline alterations from its natural state.

Table #2 -- Clam Lake Shoreline Condition

	Landscaped			Natural		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	80	10018	49.1%	45	10399	50.9%
Helena	93	9924	38.4%	39	15935	61.6%
Total	173	19942	43.1%	84	26334	56.9%

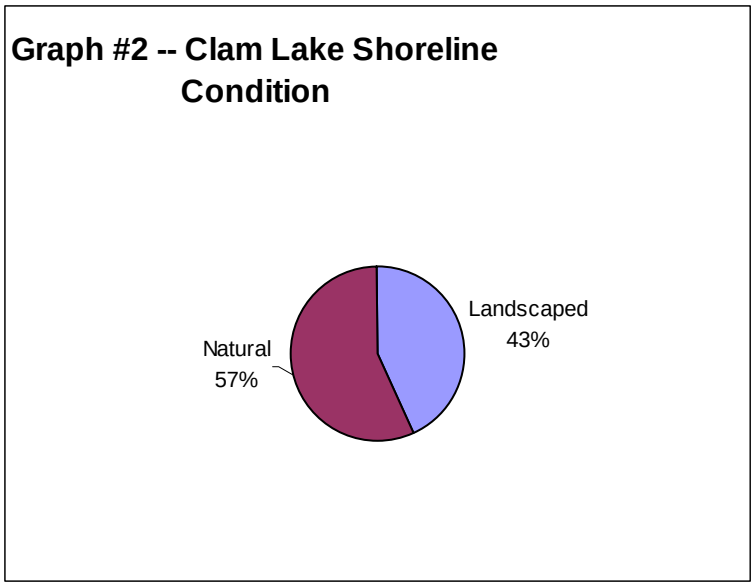


Table 3 and Graph 3; show the Clam Lake shoreline quality.

Table #3 -- Clam Lake Shoreline Quality

Very Poor				Poor		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	43	4915	24.1%	15	1938	9.5%
Helena	64	7082	27.4%	14	1170	4.5%
Total	107	11997	25.9%	29	3108	6.7%

Good				Very Good		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	15	2206	10.8%	21	3302	16.2%
Helena	16	1568	6.1%	12	1637	6.3%
Total	31	3774	8.2%	33	4939	10.7%

Excellent			
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	31	8056	39.5%
Helena	26	14403	55.7%
Total	57	22458	48.5%

The quality score is derived from the scoring numbers shown on the second page of the survey form. (Attachment A) This system is the same as that used on both Torch and Bellaire surveys.

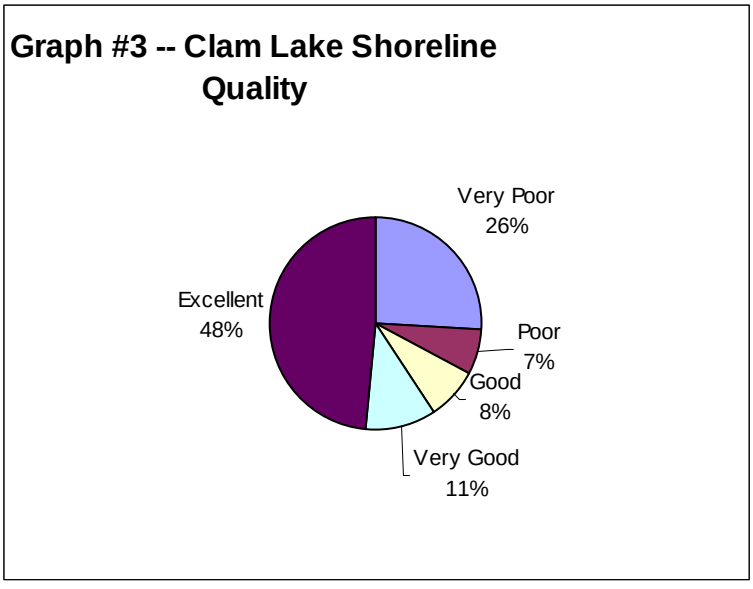


Table 4 and Graph 4; show the erosion on the Clam Lake shoreline. Having only 1% with mild erosion and no severe erosion.

Table #4 -- Clam Lake Shoreline Erosion

	No Erosion			Mild Erosion		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	124	20153	98.7%	1	264	1.3%
Helena	130	25652	99.2%	2	206	0.8%
Total	254	45805	99.0%	3	470	1.0%

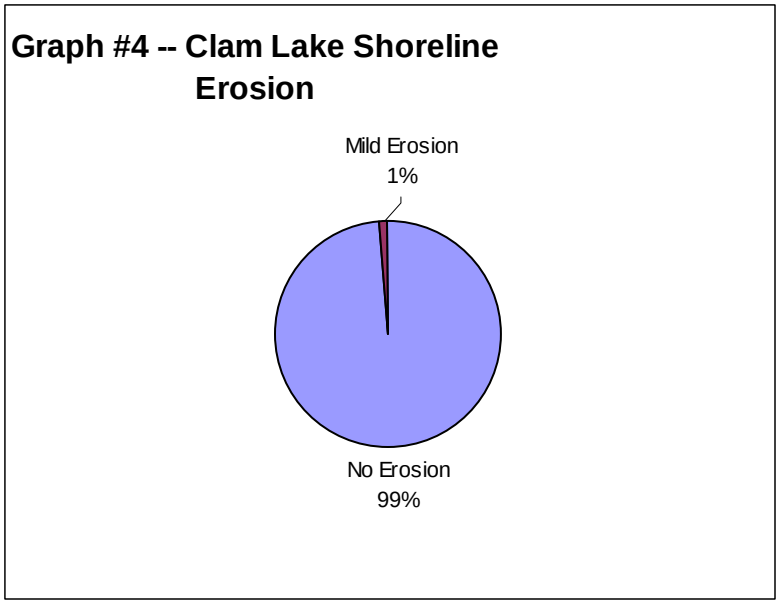


Table 5 and Graph 5; show the Greenbelt length and thus quality. The longer the greenbelt, the better the shoreline can protect the water quality.

Table #5 -- Clam Lake Greenbelt Length Quality

	Very Poor			Poor		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	38	4134	20.2%	11	1685	8.3%
Helena	45	4881	18.9%	24	2628	10.2%
Total	83	9015	19.5%	35	4313	9.3%

	Good			Very Good		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	10	1315	6.4%	12	1698	8.3%
Helena	11	979	3.8%	13	1417	5.5%
Total	21	2294	5.0%	25	3114	6.7%

	Excellent		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	54	11585	56.7%
Helena	39	15954	61.7%
Total	93	27539	59.5%

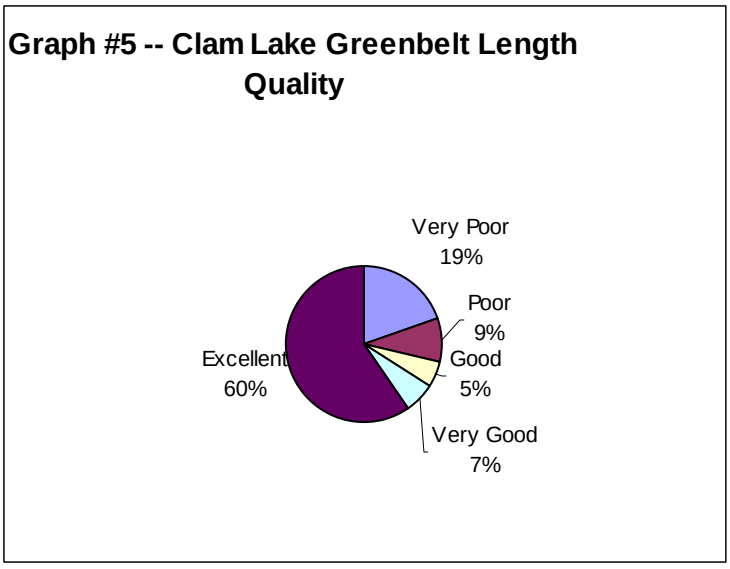


Table 6 and Graph 6; show the depth of the greenbelt. One can think of this as the thickness of the filter provided by the greenbelt.

Table #6 -- Clam Lake Greenbelt Depth

	None			Less than 10 Feet		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	38	4134	20.2%	22	3162	15.5%
Helena	46	5086	19.7%	38	3825	14.8%
Total	84	9220	19.9%	60	6987	15.1%

	Between 10 and 40 Feet			Greater than 40 Feet		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	12	1716	8.4%	53	11405	55.9%
Helena	17	1867	7.2%	31	15081	58.3%
Total	29	3583	7.7%	84	26486	57.2%

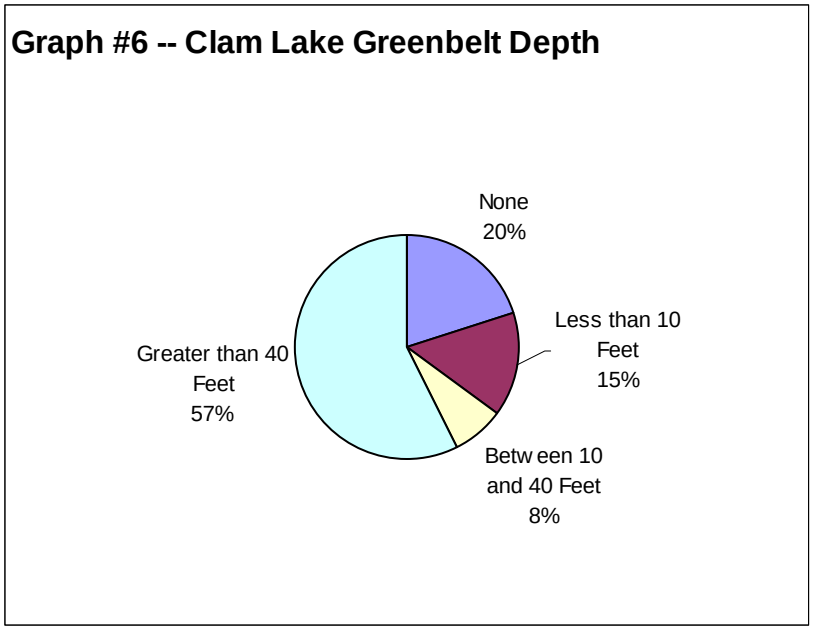


Table 7 and Graph 7; show the vertical structure of the parcel. The vertical structure is basically the height of the plant/trees that make up the greenbelt.

Table #7 -- Clam Lake Vertical Structure

	None			Good		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	6	450	2.2%	21	2479	12.1%
Helena	12	1090	4.2%	31	3432	13.3%
Total	18	1540	3.3%	52	5912	12.8%

	Better			Best		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	38	4749	23.3%	60	12738	62.4%
Helena	43	4616	17.9%	46	16720	64.7%
Total	81	9366	20.2%	106	29458	63.7%

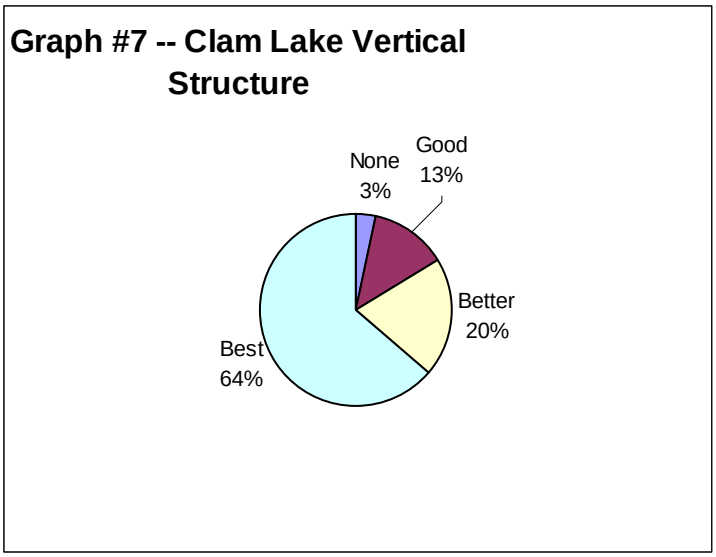


Table 8 and Graph 8; show the percentage of turf at the shoreline.

Table #8 -- Clam Lake Greenbelt Turf Percentage

0%

Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	42	10258	50.2%
Helena	52	17447	67.5%
Total	94	27705	59.9%

<10%

Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	4	508	2.5%
Helena	2	200	0.8%
Total	6	708	1.5%

10% to 25%

Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	10	1236	6.1%
Helena	4	411	1.6%
Total	14	1646	3.6%

25% to 75%

Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	22	3103	15.2%
Helena	22	2100	8.1%
Total	44	5203	11.2%

>75%

Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	47	5313	26.0%
Helena	52	5701	22.0%
Total	99	11014	23.8%

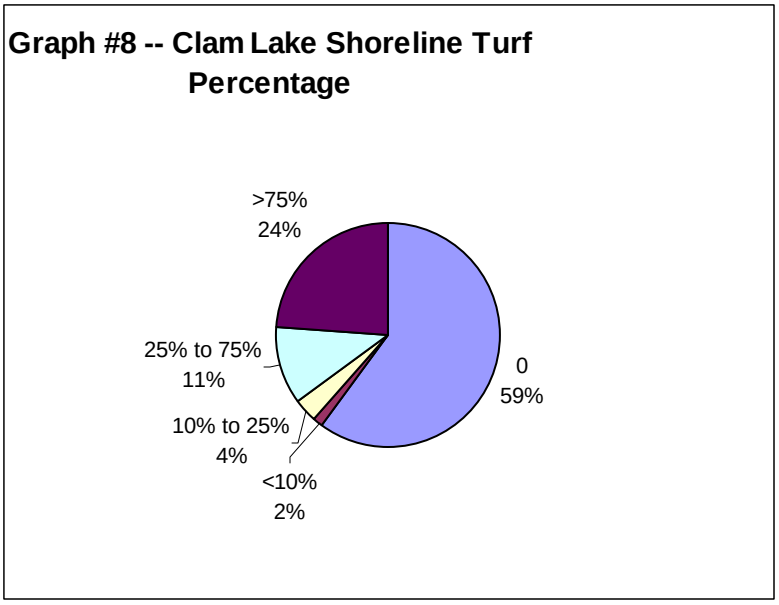


Table 9 and Graph 9; show the density of the plants within the greenbelt.

Table #9 -- Clam Lake Plant Density							
None					Sparse		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)		Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	9	792	3.9%		45	5694	27.9%
Helena	13	1158	4.5%		57	6190	23.9%
Total	22	1949	4.2%		102	11884	25.7%
Medium					Dense		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)		Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	31	4104	20.1%		40	9828	48.1%
Helena	34	3898	15.1%		28	14614	56.5%
Total	65	8001	17.3%		68	24442	52.8%

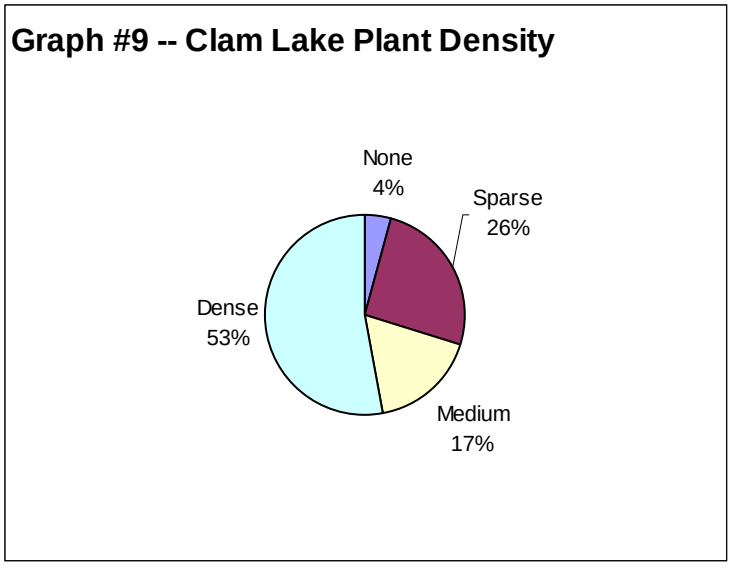


Table 10 and Graph 10; show the species diversity.

Table #10 -- Clam Lake Species Diversity

	None			Uniform		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	8	685	3.4%	40	5193	25.4%
Helena	12	1115	4.3%	53	5871	22.7%
Total	20	1800	3.9%	93	11064	23.9%

	Several Species			Many Species		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	34	4305	21.1%	43	10234	50.1%
Helena	38	3998	15.5%	29	14874	57.5%
Total	72	8303	17.9%	72	25108	54.3%

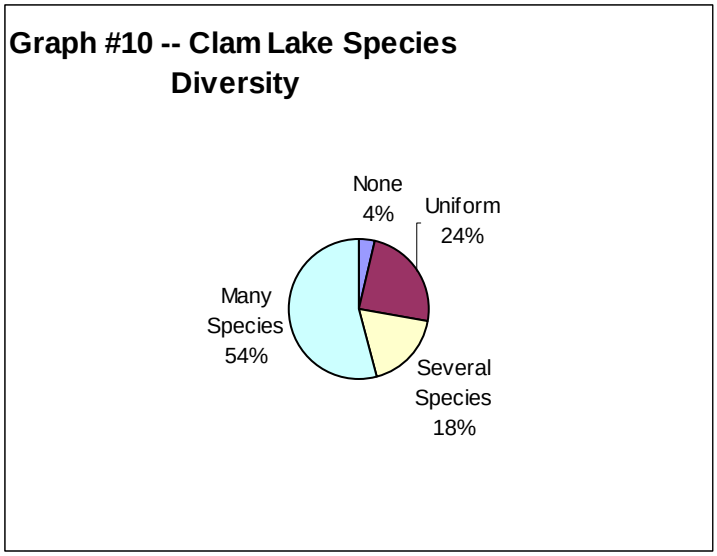


Table 11 and Graph 11; show the erosion control structures in place.

Table #11 -- Clam Lake Erosion Control Structures

	None			Biotechnical		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	56	10979	53.8%	0	0	0.0%
Helena	43	16351	63.2%	0	0	0.0%
Total	99	27330	59.1%	0	0	0.0%

	Riprap			Sea Wall		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	53	6763	33.1%	16	2676	13.1%
Helena	48	5056	19.6%	41	4452	17.2%
Total	101	11819	25.5%	57	7127	15.4%

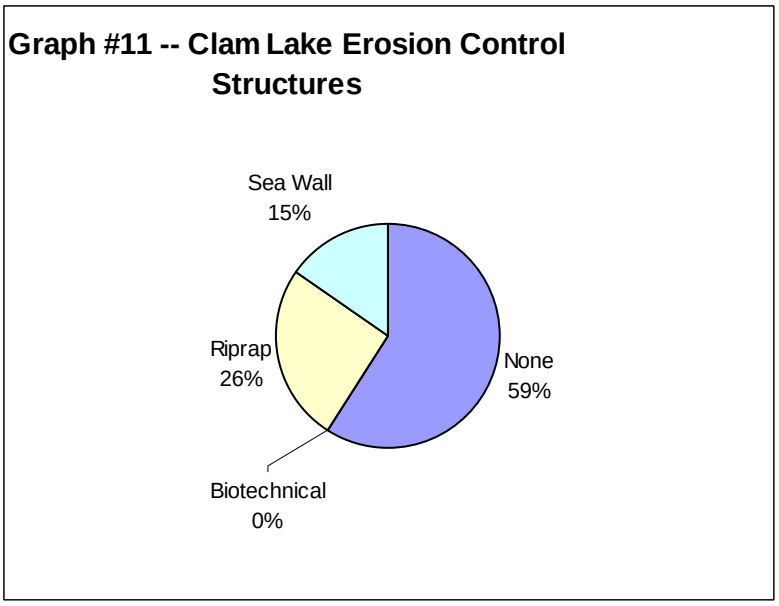
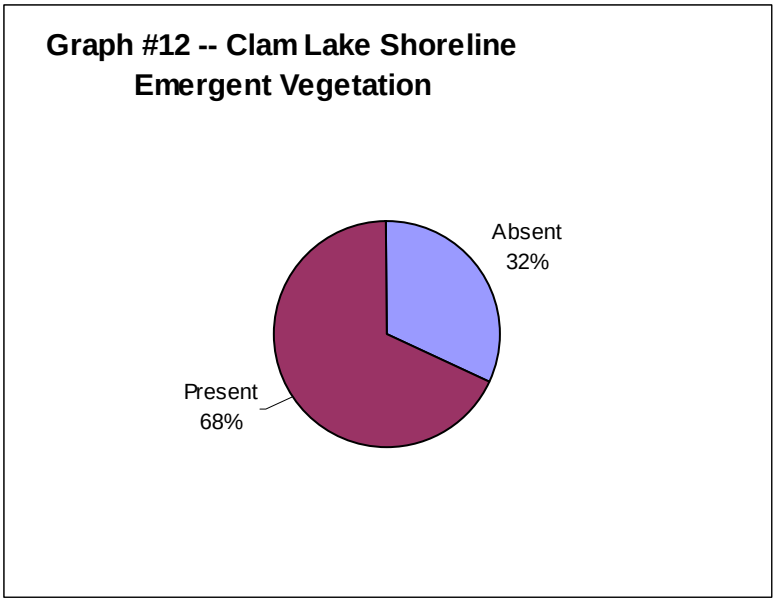


Table 12 and Graph 12; show what percentage of the shoreline having emergent vegetation, which is lake bottom plant growth that reaches the surface alone the shoreline.

Table #12 -- Clam Lake Shoreline Emergent Vegetation

	Absent			Present		
Township	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)	Number of Parcels	Water Frontage (ft)	Percent (of TWP's Lakeshore)
Forest Home	52	6895	33.8%	73	13523	66.2%
Helena	58	7944	30.7%	74	17915	69.3%
Total	110	14838	32.1%	147	31438	67.9%



Conclusions

- The perimeter of Clam Lake and Clam River is 8.8 miles.
- About 46% of the perimeter is developed, and 54% is undeveloped.
- 59% of the shoreline's greenbelt satisfies the criteria for very good or excellent condition.
- 136 parcels or about 2.9 miles of shoreline have a greenbelt rating of very poor or poor. Opportunities to improve these parcels are specific to each.
- 57% of the shoreline exists in a natural condition, and 43% is landscaped
- 16% of the shoreline is owned by the public including Grass River Natural Area. These parcels are protected from residential development.
- There were only three mild erosion sites.

Discussion

46% of Clam Lake and Clam River shoreline is developed compared to 86% on Torch Lake and 43% on Lake Bellaire. 59% of the Clam Lake and Clam River shoreline is in Very Good or Excellent condition compared to 32% of the shoreline on Torch Lake and 58% of the Lake Bellaire. 16% of Clam Lake and Clam River shoreline is permanently protected from development and 54% is undeveloped (including protected). So, a significant portion of Clam Lake and Clam River has a natural greenbelt.

Developed properties are less likely to have a greenbelt. This is why greenbelts are more a priority on developed property than undeveloped. In developed areas there are opportunities for improvement. Some already have good greenbelt regions, but many areas have turf that extends up to the shoreline and others have riprap or seawalls at the water's edge. This could be improved with greenbelt plantings. Public access areas have minimal greenbelts and some erosion.

Extensive use of boats and docks can disrupt habitat for aquatic wildlife but is not part of the survey as it presently exists.

Recommendations

1. Because much of the shoreline of Clam Lake has been developed, property owners should be encouraged to plant vegetative greenbelts and reduce the use of fertilizer and pesticides. In fact, phosphorus free fertilizers are widely available, and if appropriate should be used. In order to determine how the appropriate nutrients needed for particular areas Michigan, State Extension Service offers soil testing services. Simply not mowing grass near the shoreline is a good way to begin a greenbelt.

2. Some residents can protect the existing natural shoreline with deed restrictions and conservation easements.

3. Public and private property owners should restore erosion sites.

4. Because the Northwest Michigan Community Health Agency Unified Sanitary Code does not regulate failing septic systems, a Point of Sale Inspection Ordinance for all septic systems around the lake should be created.

5. There needs to be an educational program to inform property owners about the best practices for protecting water quality.

Solutions

The magnitude of these problems on Clam Lake and Clam River, with 257 parcels and 8.8 miles of shoreline, requires a systematic, long-term, collaborative approach. The selected activities must be sustainable by local organizations and governments.

Two major goals have been identified:

- Restore the shore so it functions like a natural shoreline to protect water quality and the rural character of the landscape
- Promote shoreline stewardship to reduce storm water runoff, soil erosion, and non-point source pollution.

Recommended Activities:

To raise awareness about this survey, its findings, and the importance of shoreline greenbelts, a letter and greenbelt brochure should be mailed to all property owners. Greenbelt displays, greenbelt garden designs and presentations should be made available to township officials, lake associations and civic groups. To encourage behavior change, The Watershed Center should work with local governments and install greenbelt demonstration projects on public property around the lake in 2008 and 2009.

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Health Department of Northwest Michigan - District Sanitary Code, Counties of Antrim, Charlevoix, and Otsego, Effective Date: Feb. 25, 2007. www.nwhealth.org/permits/District_Sanitary_Code.pdf

Lake Bellaire Shoreline Survey Summary Report, August 30,2008, by Three Lakes Association, PO Box 689, Bellaire, MI 49615
http://3lakes.com/wp-content/uploads/2009/01/lakebellaireshorelinesurveyreportnov-2008.pdf

Attachments

Survey Order 18

The Watershed Center- Shoreline Greenbelt Survey

Lake: CLAM **Date**: July ___, 2008

Location Information:

Parcel Owner: SAK PAUL L & LORETTA T

House Description: Stories: 1 1.5 2 3

_____ Color _____Trim _____ Roof _____Shutters _____

B. House # 6461 **Id #**: 54 **C. Street:** CRYSTAL SPRINGS ROAD

D. City: BELLAIRE **E. Waterfront Footage:** 119 **feet**

F. Township: Helena **G. Map Number:** 1

Shoreline Information:

H. Shoreline Description: ___**Sa**ndy Shore ___ **Ro**cky Shore ___ **Gr**assy Shore ___**St**eep Shore

I. Slope Description: ___ **Fl**at Slope (0-5%) ___ **Ge**ntle Slope (5-10%)
___ **So**mewhat steep (10-15%) ___ **Ve**ry Steep (15%+)

J. Shoreline Condition: ___ **N**atural ___**L**andscaped

K. Shoreline Development: ___ **D**eveloped ___ **U**ndeveloped

L. Shoreline Access- Stairway: ___**Y**es ___ **N**o

M. Shoreline Access- Ramp: ___ **Y**es ___ **N**o

N. Shoreline Access- Ramp Materials: ___ **C**ement ___ **G**rass ___**S**and ___ **G**ravel

O. Shoreline Structures: ___ **N**one

___ **D**eck ___ **Pa**tio ___ **G**azebo ___ **O**ther

___ **B**oat house ___ **Pu**mp house ___**W**ater *I*ntake ___**W**ater **O**utflow ___ **R**oad **D**rain

Observations:

Greenbelt Information:

Note: Surveying should be done from the Ordinary High Water Mark.

P. Greenbelt Length:	___None	___<10%	___10-25%	___25-75%	___>75%
Score	0	1	2	3	4
Q. Greenbelt Average Depth:	___None	___<10’	___10-40’	___>40’	
Score	0	1	2	3	
R. Vertical Structure:	___ All	___Ground Cover	___Understory	___Overstory	
S. Score	3	1	1	1	
T. Turf:	___ (0%)	___<10%	___10-25%	___25-75%	___>75%
Score	0	-1	-2	-3	-4
U. Density:	___ None	___Sparse	___Medium	___Dense	
Score	0	1	2	3	
V. Species Diversity:	___ None	___Uniform	___ Several Species	___Many Species	
W. Score	0	1	2	3	

Erosion Information:

X. Erosion:	___None	___Minor	___Severe	
Y. Score	0	-1	-2	
Z. Erosion Control Structures:	___ None	___ Biotechnical	___ Riprap	___ Sea Wall
AA. Score	0	-1	-2	-3

AB. Emergent Vegetation: ___ Present ___ Absent

Observations:

Clam Lake Shoreline Survey

for Parcel No. -- 05-08-010-038-00 Survey Order ID -- 61

Owner's Address:

LOCUSTA PRESERVE INC
7534 CRYSTAL SPRINGS RD
BELLAIRE, MI 49615

Shoreline Information Gathered

Water Front Footage:	50 ft
Shoreline Description:	Rocky
Shoreline Slope:	Somewhat Steep 10-15%
Shoreline Condition:	Natural
Shoreline Development:	Developed
Shoreline Access-stairway:	No
Shoreline Ramp:	No Material: #N/A
Shoreline Structures:	None

Greenbelt Information		**Score**
Greenbelt Length:	>75%	4
Greenbelt Depth:	>40'	3
Vertical Structure:	Ground cover, Understory, and Overstory	3
Turf:	None	0
Density:	Dense	3
Species Diversity:	Many Species	3

Erosion Information:		**Score**
Erosion:	None	0
Erosion Control Structure:	None	0
Emergent Vegetation:	Present	

Parcel Score: 16 Excellent

Notes:

1. Please report back any errors you find in this data.
2. The purpose of this survey was to document the status of the Clam Lake shoreline in July 2008 and NOT to point a finger or otherwise make accusations as to any individual's stewardship of their shoreline.
3. Keep in mind that the scoring is consistent with the methods used for both Torch Lake and Lake Bellaire. There were many opinions on the best way this should be done, but for consistency, we stayed with the previously set standard.
4. This survey was a joint effort of Friends of Clam Lake and Three Lakes Association.