

Onsite System Record Review: In July of 2003, a group of interns from Blue Water Science and one intern from the Pelican River Watershed District went to the Otter Tail County Courthouse in Fergus Falls, MN to locate and examine all property files for property owners on Pelican Lake, Little Pelican Lake, Fish Lake, and Bass Lake.

Approximately 1,000 files were reviewed for the following parameters:

- property identification number
- name of property owner/s
- legal description including section number, township name and number, and range
- year of installation of onsite wastewater treatment system
- property parcel number
- lake address or addition of the property
- lot size in square feet
- impervious surface size in square feet
- lake frontage in feet
- system type
- tank size
- drainfield size
- tank and drainfield setback from the lake front
- tank and drainfield depth to groundwater
- percolation test
- tank and drainfield distance from a well on the property

These data were then transferred into spreadsheet format where they were evaluated, and averaged for several of the parameters. These results give some insight about the state of the Pelican Lakes area with regards to its current onsite wastewater treatment conditions.

Table 6. Summary of septic tank and holding tanks recorded for the Pelican Lakes, based on Otter Tail County records in 2003.

	Septic Tanks		Holding Tanks		Other		Total
	number	percent	number	percent	number	percent	
Pelican	598	72	236	28	0	0	834
Little Pelican	26	66	12	31	1	3	39
Bass	10	100	0	0	0	0	10
Fish	27	39	41	59	1	2	69
Total	661	69%	289	30%	2	--	952

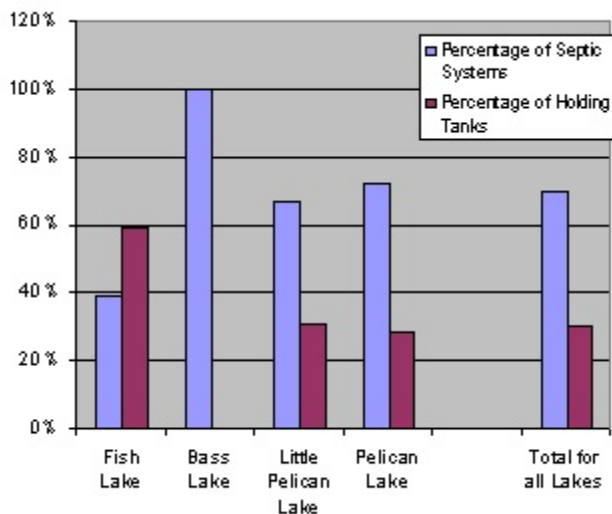


Figure 11. Percentage of septic tanks and holding tanks for each lake.

Table 7. Year of septic system installation.

Pelican Lake		
Year of Installation	Number of Systems	Percentage
1970 - 1975	55	7%
1976 - 1980	119	14%
1981 - 1985	351	42%
1986 - 1990	113	14%
1991 - 1995	79	10%
1996 - 2000	80	10%
2001 - 2005	32	4%
Little Pelican Lake		
Year of Installation	Number of Systems	Percentage
1970 - 1975	4	11%
1976 - 1980	14	37%
1981 - 1985	4	11%
1986 - 1990	6	16%
1991 - 1995	1	3%
1996 - 2000	7	18%
2001 - 2005	2	5%
Bass Lake		
Year of Installation	Number of Systems	Percentage
1970 - 1975	0	0%
1976 - 1980	0	0%
1981 - 1985	1	11%
1986 - 1990	1	11%
1991 - 1995	1	11%
1996 - 2000	5	56%
2001 - 2005	1	11%
Fish Lake		
Year of Installation	Number of Systems	Percentage
1970 - 1975	6	9%
1976 - 1980	11	16%
1981 - 1985	19	28%
1986 - 1990	15	22%
1991 - 1995	5	7%
1996 - 2000	10	14%
2001 - 2005	3	4%

Notes

- Nearly all of the onsite wastewater treatment systems around the Pelican Lakes are 35 years old or newer.
- The majority of the systems are from 1981 or more recent.
- A well maintained onsite wastewater treatment system has a life expectancy of 30 to 50 years.

Table 8. Drainfield setbacks from the lake.

Pelican Lake		
Setback from Lake (ft)	Number of Systems	Percentage
0 - 25	1	0.20%
50+	564	95%
100+	6	1%
150+	11	1%
200+	4	1%
250+	1	0.20%
300+	5	1%
500+	2	0.30%
Data available for 594 of 598 septic systems (594 of 834 total systems on Pelican Lake)		
Little Pelican Lake		
Setback from Lake (ft)	Number of Systems	Percentage
0 - 25	0	0%
50+	19	76%
100+	2	8%
150+	0	0%
200+	1	4%
250+	1	4%
300+	1	4%
500+	1	4%
Data available for 25 of 26 septic systems (25 of 39 total systems on Little Pelican Lake)		
Bass Lake		
Setback from Lake (ft)	Number of Systems	Percentage
0 - 25	0	0%
50+	9	90%
100+	0	0%
150+	0	0%
200+	1	10%
250+	0	0%
300+	0	0%
500+	0	0%
Data available for all systems on Bass Lake		
Fish Lake		
Drainfield Setback from Lake (ft)	Number of Systems	Percentage
0 - 25	0	0%
50+	28	97%
100+	1	3%
150+	0	0%
200+	0	0%
250+	0	0%
300+	0	0%
500+	0	0%
Data available for 29 of 69 total systems on Fish Lake		

Notes

- The minimum set back of a septic tank drainfield is 50 feet from the lake.
- Records show that 99% of the drainfields are at least 50 feet from the lake.

Table 9. Distance of drainfield to groundwater table.

Pelican Lake		
Distance of Drainfield from lake (ft)	Number of Systems	Percentage
0 - 2.9	0	0%
3+	432	74%
4+	136	23%
5+	3	0.50%
6+	3	0.50%
10 +	12	1%
Data available for 586 of 598 septic systems (586 of 834 total systems on Pelican Lake)		
Little Pelican Lake		
Distance of Drainfield from lake (ft)	Number of Systems	Percentage
0 - 2.9	0	0%
3+	14	56%
4+	8	32%
5+	0	0%
6+	1	4%
10 +	2	8%
Data available for 25 of 26 septic systems (25 of 39 total systems on Little Pelican Lake)		
Bass Lake		
Distance of Drainfield from lake (ft)	Number of Systems	Percentage
0 - 2.9	0	0%
3+	10	100%
4+	0	0%
5+	0	0%
6+	0	0%
10 +	0	0%
Data available for 10 of 10 systems		
Fish Lake		
Distance of Drainfield from lake (ft)	Number of Systems	Percentage
0 - 2.9	0	0%
3+	16	62%
4+	9	35%
5+	0	0%
6+	0	0%
10 +	1	3%
Data available for 26 of 27 septic systems (26 of 69 total systems on Fish Lake)		

Notes

- The minimum separation of the bottom of the septic tank drainfield from the groundwater table is 3 feet.
- County records indicate that all existing drainfields have at least a 3-foot separation.

CONCLUSIONS

- **County records indicate that the septic tank/drainfield systems are in good shape and should function properly if maintained.**
- **The existing onsite wastewater treatment systems do not appear to be adversely impacting the water quality of the Pelican Lakes.**
- **However, there are a high number of holding tanks (30% of the onsite systems) in the shoreland area. In the future offsite treatment employing cluster systems or centralized sewers could be considered.**