

## Sea Lake

### 2009 Lake Grade: D

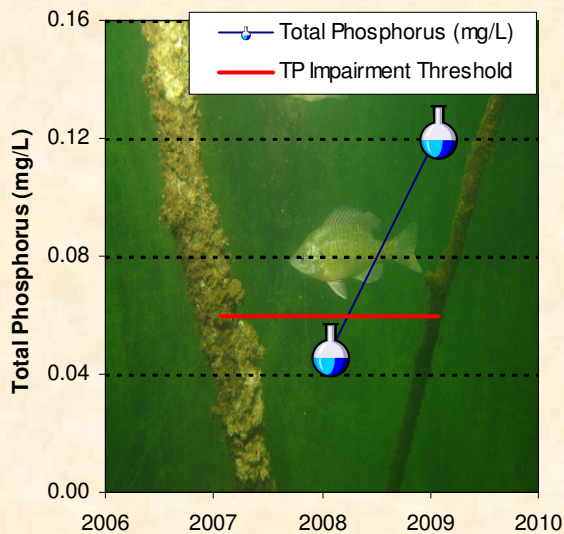
- DNR ID #: 820053
  - Municipality: City of Scandia
  - Location: Section 4 T32N-R20W
  - Lake Size: 50 Acres
  - Maximum Depth: 15 ft
  - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



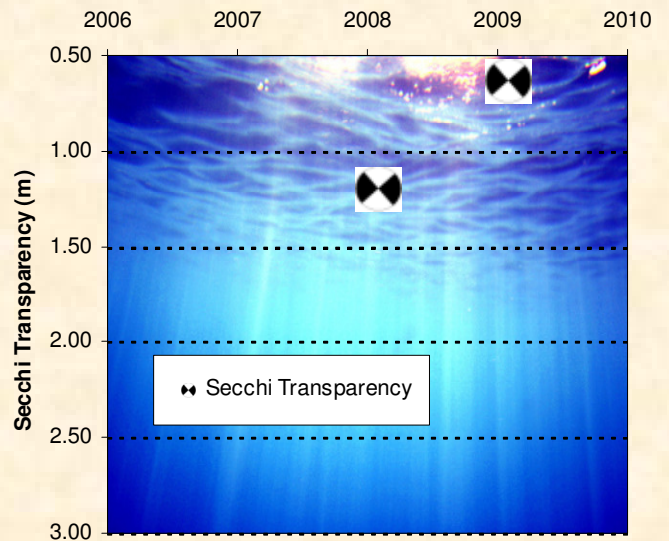
### Summary Points

- 2009 was only the second year in which Sea Lake has been monitored
- Sea Lake was considered a hypereutrophic lake in 2009, based on the Carlson Trophic State Index.
- The lake's 2009 water quality was worse than that recorded in 2008
- The major land use is rural/agricultural.
- The lake does not stay stratified throughout the summer months.

**Average Summer Surface Total Phosphorus**



**Average Summer Secchi Transparency**



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depth (m)
6/11/09	0.097	32	1.7	0.7
6/25/09	0.143	24	1.6	0.8
7/7/09	0.073	32	1.7	0.7
7/23/09	0.074	28	1.6	0.7
8/16/09	0.23	100	2.1	0.5
9/1/09	0.131	64	1.8	0.5
9/14/09	0.105	41	1.6	0.6
<b>2009 Summer Average</b>	<b>0.122</b>	<b>45.857</b>	<b>1.729</b>	<b>0.643</b>

Water Quality threshold is 0.04 mg/L TP or higher\*

Shallow Lake water quality threshold is 0.06 mg/L or higher\*

	High	High Date	Low	Low Date
<b>2008 Elevation (ft)</b>	NA	NA	NA	NA

\*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) of paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."

### Lake Water Quality Summary

	Trophic Status		Lake Grades									
	2009		2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Total Phosphorus (mg/l)	Hyperutrophic		D	C								
Chlorophyll-a (ug/l)	Hyperutrophic		C	B								
Secchi depth (ft)	Hyperutrophic		F	C								
Overall	Hyperutrophic		D	C+								