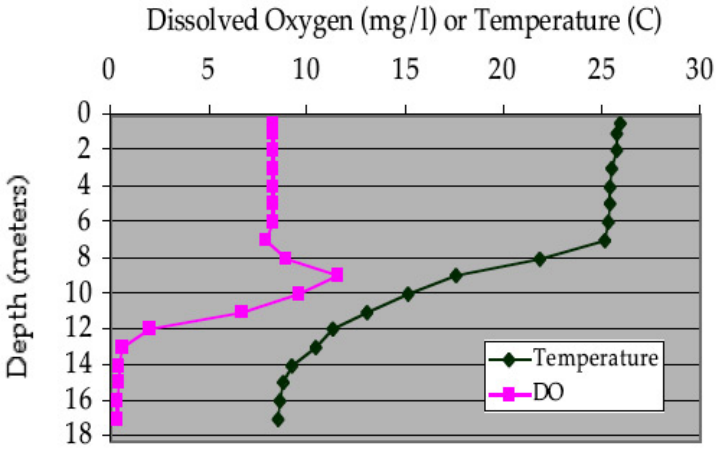
Bakers Pond

Orleans/Brewster

OR-167

Acreage: 29.3
Maximum Depth: 60 ft
2001 Secchi Dip: 10.7 ft
Lake Association:
Friends of Bakers Pond



Dissolved Oxygen and Temperature
Bakers Pond, 8/27/01

OVERVIEW

Bakers Pond is located to the west of Route 6, just south of Exit 12 on the Orleans/ Brewster town line. The pond is recharged from groundwater flowing from the west and north and discharges surface flow to groundwater along its east shore. The pond shoreline is sparsley developed with single family homes. A public beach access is provided on the eastern shore. Recreational uses include swimming, boating and fishing. The pond is stocked with trout each spring and fall.

WATER QUALITY

Baker Pond was sampled in 1948, 2001, and 2002. In 1948, the August 19 temperature profile indicated a well-mixed upper layer (i.e., epilimnion) to 35 ft with waters 7 to 10ºF cooler below 35 ft. The dissolved oxygen (DO) profile had near saturation concentrations in the epiliminion and deeper concentrations beginning at 7.8 ppm at 45 ft and declining to hypoxic (<4 ppm) conditions at the bottom. From late 2000 through 2001, Baker Pond was the subject of a town-initiated water quality study (Eichner, *et al.*, 2001). The monitoring during this study found anoxic concentrations (<1 ppm DO) in the deeper waters once thermal stratification was achieved (mid-June) and these conditions existing until turnover in mid-November; late summer conditions are shown above in the 2001 PALS Snapshot profiles.

Surface water chlorophyll *a* and TP concentrations measured in Baker Pond are less than the current Cape Cod "impacted" thresholds, while surface TN and all parameter concentrations at depth exceed these thresholds. The Carlson TSI based on the surface chlorophyll *a* concentrations places the pond at the lower end of the oligotrophic with some bottom anoxia category, but this is contrasted by conflicting classifications for Secchi depth and TP Carlson TSI's, which place the pond in the mesotrophic and oligiotrophic categories, respectively.

The water quality study concluded that additional sampling, including sediments and stormwater from nearby roads, including Route 6, was necessary to better understand Baker Pond's water quality. It is clear from reviewing the DO profiles that this pond is impaired and has worsened over the past 50 years. The Town of Orleans Water Quality Task Force collected more refined data during the summer of 2002; it is recommended that the town consider a revised water quality assessment of the Baker Pond, including a review of this more refined data and include a sediment characterization and stormwater sampling and a forecast of whether water quality is likely to continue to worsen. Overall, Baker Pond presents as an impacted pond with current water quality problems.

August 27, 2001 PALS Snapshot Results					
Depth	pH	Chlorophyll a	Alkalinity	Total Phosphorus	Total Nitrogen
meters		µg/L	as mg CaCO3/L	µg/L	mg/L
0.5	6.27	1.44	2.0	1.5	0.43
15	6.02	7.68	5.4	37.5	0.62

Click here to see Bathymetric Map of Bakers Pond

Return to Orleans Ponds Map