



The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



**Thomas S. Burack, Commissioner**

June 23, 2016

Chairman Chester (Ski) Kwiatkowski  
Ossipee Planning Board  
Ossipee Town Hall  
P.O. Box 67  
Ossipee, NH 03814

Dear Mr. Kwiatkowski and Planning Board Members:

We are writing to you to bring to your attention water quality and invasive aquatic species data that you may wish to take into consideration when evaluating the proposed expansion of the Westward Shores Campground.

The Green Mountain Conservation Group (GMCG) and Ossipee Lake Association (OLA) have monitored water quality at Broad and Leavitt Bays since 1990 and Ossipee Lake, Berry Bay and Lower Danforth Pond since 2003. Volunteers collect monthly water quality samples which are analyzed for a variety of chemical and biological parameters. Annual data collection allows for the detection of long term water quality trends. Historical water quality data analysis has revealed significant decreasing or worsening trends for transparency (water clarity) at Broad and Leavitt Bays, two stations with 25 years of annual data collection. The average transparencies at Broad and Leavitt Bays from 1990 - 2000 were 5.60 and 5.20 meters respectively and have since decreased to average values of 3.89 and 3.94 meters from 2001 - 2015. This represents a 1.70 and 1.30 meter decline in water clarity between the two periods. A full account of the water quality conditions in the Ossipee Lake system can be found at [http://des.nh.gov/organization/divisions/water/wmb/vlap/annual\\_reports/2015/lake-reports.htm](http://des.nh.gov/organization/divisions/water/wmb/vlap/annual_reports/2015/lake-reports.htm) under the White Mountain section.

NHDES assesses surface waters based on their ability to support aquatic life through the Consolidated Assessment and Listing Methodology (CALM) and reports to EPA every two years on the status of its waters in the 305(b) and 303(d) Surface Water Quality Report. The CALM assigns thresholds for specific parameters related to aquatic life, primary and secondary contact recreation. The aquatic life nutrient threshold assigned for oligotrophic lakes is < 8.0 ug/L for phosphorus and < 3.3 ug/L for chlorophyll-a. Oligotrophic lakes with nutrient and chlorophyll levels above these thresholds are listed as impaired for supporting aquatic life. Currently, the Ossipee Lake system is not impaired for nutrients; however mean phosphorus levels range between 7 and 8 ug/L and mean chlorophyll-a levels range between 2 and 3 ug/L at Berry, Broad and Leavitt Bays, and Ossipee Lake. Additional development in the Ossipee Lake watershed should be carefully analyzed and designed to minimize potential impacts on nutrient and chlorophyll-a levels in the lake.

With regard to any potential expansion of the marina, consideration should be given to the potential for introductions of aquatic invasive species. Variable milfoil has been in the Ossipee Lake system for nearly two decades, and efforts to reduce its density and distribution have been completed over the past several years. There are a total of seven areas of active milfoil growth in Lake Ossipee at this time. Two areas of growth have been eradicated to date through various management efforts, but the entire Ossipee system is at risk for expanded growth from these remaining seven active and scattered sites. Variable milfoil and other invasive species tend to favor the disturbance factors associated with marinas, including increased nutrients, regular bottom disturbance, and increased vectors (boats) which can move them around.

We hope you find this information helpful. Please feel free to contact Tracie Sales at 271-2959 or the other staff listed below if you have any questions or require additional information.

Sincerely,

A handwritten signature in cursive script that reads "Tracie Sales".

Tracie Sales  
Rivers & Lakes Programs Manager  
(603) 271-2959

Cc: Blair Folts, Green Mountain Conservation Group, Effingham, NH  
Town of Freedom Conservation Commission  
Town of Effingham Conservation Commission  
Eugene Forbes, Water Division Director, NHDES  
David Neils, Chief Water Pollution Biologist, NHDES  
Sara Steiner, VLAP Coordinator, NHDES  
Amy Smagula, Exotic Species Coordinator, NHDES  
Craig Rennie, Alteration of Terrain, NHDES  
Darlene Forst, Shoreland Program, NHDES  
David Price, Wetlands Bureau, NHDES