2014 Big Bowman CSLAP Report - Team Summary

- Big Bowman Lake was sampled in 1987 as part of the Adirondack Lake Survey Corporation (ALSC) study of about 1600 high elevation lakes in New York state, including a number in the Lower Hudson River basin. That study evaluated the chemical and biological condition of the lake.The ALSC study showed higher water clarity but similar phosphorus readings than in the 2013 CSLAP study of the lake, suggesting only limited water quality changes over the last 15-25 years.

- Calcium levels indicate little susceptibility to zebra mussel infestations, although slightly elevated chloride levels indicate some lake impacts associated with road salting operations

- Water clarity was slightly higher in 2014 than in 2013, due to slightly lower phosphorus and algae levels in 2014.

- The trophic state indices (TSI) evaluation suggests that phosphorus readings are slightly lower than expected given the algae levels (as measured by chlorophyll *a*), and water transparency (as measured by the Secchi disk). This indicates that small changes in phosphorus levels in the lake may result in a substantial increase in algae levels, which in turn could result in significant decreases in water clarity.

- There were at least 12 plant species (6 submergent, 3 floating leaf, and 3 emergent species) found in the lake in 1987, including curly-leafed pondweed (*Potamogeton crispus*), an invasive submergent plant species.

- Recent reports indicate that the plant community is dominated by bladderwort, an occasionally nuisance native plant common to other lakes on the Rensselaer plateau. The overall quality of the aquatic plant community was probably "fair".

- The lake association should conduct aquatic plant surveys to identify any invasive plants that, in addition to bladderwort, may be contributing to excessive weed growth (or may grow more invasively if bladderwort is selectively removed from the lake).

- The lake is most frequently described as having "slightly impaired" for most recreational uses, due to water with "definite algae greenness" and plant growth at the surface of the lake (but not growing densely).

- Recreational impacts were more likely to be associated with "excessive weeds" than "poor water clarity" or "excessive algae".

- The CSLAP dataset at Big Bowman Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that swimming and contact recreation is *fully supported*, although this use may be threatened by nuisance weeds and occasional shoreline blooms.

- The CSLAP dataset on Big Bowman Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life may be *threatened* by invasive plants (curly leafed pondweed).

- There are no fish consumption advisories posted for Big Bowman Lake.

- The CSLAP dataset at Big Bowman Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water, and the lake is not used for this purpose. The occasionally elevated shoreline algae levels indicate a threat to any "unofficial" potable water use.