

[Why it was done]

The Relationship between Phosphorous Levels and Algae Blooms in Lake Champlain



[Descriptive title...it says what you did and is more interesting than the one given in the lab manual]

Introduction [states the purpose of the lab, why you did it and your hypothesis]

Algae blooms are considered unpleasant to swim in and can be a health hazard for humans and wildlife. As a result of this health hazard, several popular Lake Champlain swimming areas were closed for up to 15 days during the summer of 1999 (Table 1).

Table 1. Number of days that Burlington-area beaches were closed for health reasons during the 1999 summer.

Site	Number of days beach
LaPlatte	15
Winooski	12
North Beach	9
Burlington	8
Red Rocks	3

Previous studies have shown that the number of algae blooms in an area is directly proportional to the amount of phosphorous in the water; that is, **the higher the phosphorous level the greater the number of algae blooms** (Schmoe *et al.* 1996). The following is an investigation of whether or not this relationship holds true for five sites in Lake Champlain.

[The hypothesis]

[What was done]

Methods [Concise, but enough detail so others can replicate the experiment/study. Note the use of passive voice and past tense...no "I"]

Water samples were collected at the following five locations in Lake Champlain on August 1, 2000: North Beach, LaPlatte River mouth, Winooski River mouth, Burlington Bay and Red Rocks Beach. Water samples were analyzed for phosphorous content by the Agricultural Testing Lab at the University of Vermont. At the same time water samples were taken, the number of visible algae blooms at each site was recorded.

Results and Discussion [IMPORTANT: often these are separate sections, but some NR instructors have you combine them. The results section (or portion) simply introduces the reader to the important data that you collected in the experiment and any tables that illustrate that data (unless those are going in a separate appendix).

Phosphorous content equaled 35 milligrams per liter (ml/L) at Red Rocks, 40 at Burlington, 55 at North Beach, 70 at Winooski and 75 at the mouth of the La Platte river. The number of algae blooms increased, correspondingly, from 10 at Red Rocks to 50 at the mouth of the La Platte. **Figure 1 illustrates the relationship between phosphorous content and the number of algae blooms.**

[Introduce a table or figure to the reader]

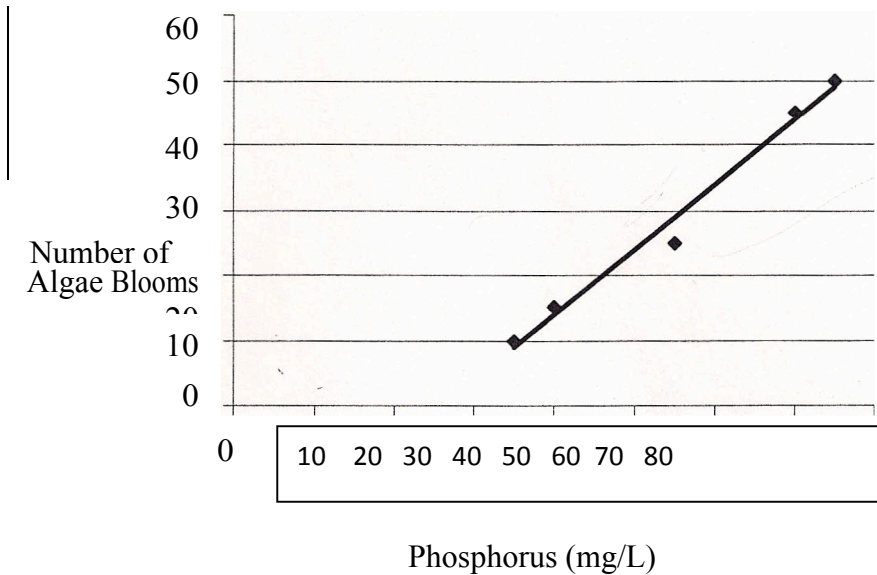


Figure 1. Relationship between phosphorous concentration and the number of algae blooms at five sites in Lake Champlain *[always label tables or figures]*.

[The discussion portion (or section) is where you interpret data, draw conclusions, suggest further study, etc.]

As reported in previous studies (Schmoe *et al.* 1996), the number of algae blooms increased with increasing concentrations of phosphorous. Also of interest is that the highest levels of both variables seemed to occur in areas that received large amounts of agricultural runoff, such as the mouths of the La Platte and Winooski Rivers. These data may indicate that phosphorous in runoff is somewhat responsible for increasing algae blooms. Thus, controlling this runoff may be an effective method for preventing health hazards and unpleasant recreation conditions.

Literature Cited

Schmoe, J.B., Doe, J.J. and Gordon, M. 1996. Relationships between phosphorous content and algae blooms in the Chesapeake Bay. *Journal of Lake Research*. **5**: 119-121

[Always cite your sources and include a final literature cited or bibliography section. Be sure to follow the proper citation style—it may or may not be the one used here. Your professor/TA should provide his/her expectations.]