and the amount of zooplankton grazing determine what type and in what numbers the phytoplankton will be present.

As far as zooplankton go, all I can say with certainty is that Roach has more genera of the three main zooplanktonic groups, the rotifers, the cladocerans, and the copepods, than does Kickapoo. In Roach, I counted three genera of cladocerans, five copepod genera, and three rotiferan genera. Kickapoo only had one cladoceran, and two genera each of rotifers and copepods. This low number of zooplankton may be due to predation on them by Chaoborus larvae.

Both Roach and Kickapoo are autotrophic, meaning that they are their own primary sources of organic matter. Both lakes are also oligotrophic, but Roach is by far the more typical oligotrophic lake, and Kickapoo is much closer to being eutrophic. The description of the classical oligotrophic lake fits Roach almost perfectly. Roach is a deep lake. It has a steep bank and becomes deep very rapidly, so its littoral zone is small. It does not have a very large epilimnion as compared to its hypolimnion. It has blue ? Roach ? water which is very transparent. Its typical macrophyte is small with a rosette shape, and its littoral zone is sparsely populated. Roach is a soft lake, with low alkalinity, low acidity, and low conductance. It is also low in nutrients. I do not have enough comparable information to say if it has high number of phytoplankton species, but it has a much smaller number of phytoplankton per ml of water that Kickappo does (and in the samples of each lake used for counting, the Roach Lake sample was more concentrated). One characteristic of Roach that does not fit the oligotrophic description is that its oxygen concentrations are not exceedingly abundant at all depths.

Although Kickapoo is not productive enough to be classified as eutrophic, nor does it have some high nutrient source like sewage supplied to it like many eutrophic lakes do, it fits the eutrophic lake description very well. It is a shallow, very slowly sloping lake, which means it has a broad littoral zone filled with aquatic plants. The sloping banks and shallowness allow storms and winds to really stir the lake up, moving nutrients around to all parts of the lake, so the entire lake is rich in nutrients. Also, with such a broad littoral zone, the ratio of epilimnion to hypolimnion is high. This means that the hypolimnion is filled with dead material that needs to be decomposed, so the oxygen levels are very low in the hypolimnion. Kickapoo has hard, highly colored waters with high alkalinity, acidity, and conductivity. I do not know if the number of different types of phytoplankton found in Kickapoo is low, but the number of indidivual organisms is high. Kickapoo even has Chaoborus, which is typical of a eutrophic lake.

Finally, Roach and Kickapoo appear to be following different paths to death. Roach seems to be slowly becoming a bog, as evidenced by the growth of sphagnum moss along its edges. Kickapoo, on the other hand, seems to favor the swamp route. This is suggested by its slow process of filling up and the growth of marshy grasses on the lake's perimeter.

## Notes

[1] Robert G. Wetzel, Limnology (Philadelphia: W.B. Saunders Company, 1975) p.299.

[2] Charles R. Goldman, Limnology (New York: McGraw Hill, 1983) p.198.

[3] Robert G. Wetzel, Limnology (Philadelphia: W.B. Saunders Company, 1975) p.299.

[4] Gerald A. Cole, Textbook of Limnology (St. Louis: The C.V. Mosby Company, 1979) pp. 56-57.

# Bibliography

Cole, Gerald A. Textbook of Limnology. St. Louis: The C.V. Mosby Company, 1979.

Goldman, Charles R. Limnology. New York: McGraw Hill, 1983.

Wetzel, Robert G. Limnology. Philadelphia: W.B. Saunders Company, 1975.