Circumneutral Bog Lake

A circumneutral bog lake is a spring-fed, calcareous water body that commonly supports vegetation of both acidic bogs and calcareous marshes. The lake is underlain by deep organic sediments; floating mats of vegetation and drifting peat rafts are often present. This is a rare habitat type in the region, known to support many rare species.

Leatherleaf

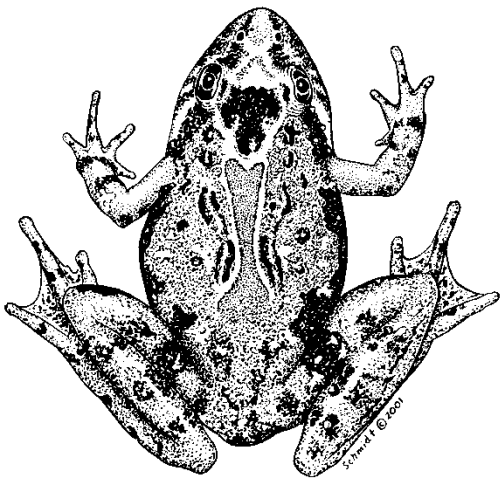
Typical plants

- Pond-lilies in open water areas
- Cattails, purple loosestrife, water-willow, alder, and leatherleaf along shorelines and on peat mats and rafts

Species of conservation concern

- Twig-rush, roundleaf sundew, Beck's water-marigold, globe-fruited ludwigia
- Northern cricket frog
- Ribbon snake, spotted turtle, blue-spotted salamander
- Marsh wren
- River otter
- Diverse communities of mollusks, dragonflies, and damselflies

These are just a few of the species of regional or statewide conservation concern that are known to occur in circumneutral bog lakes. See Kiviat & Stevens (2001) for a more extensive list.



Northern cricket frog, © K. Schmidt 2001

Threats to circumneutral bog lakes

We believe that circumneutral bog lakes are extremely sensitive to changes in surface and groundwater chemistry and flows, and could be affected by any significant alterations to the watershed such as **tree removal, soil disturbance, applications of fertilizers or pesticides, groundwater extraction,** or **altered drainage**.

Mechanical disturbance or changes in surface water levels or chemistry could disrupt the floating vegetation mats. Recreational uses such as boating, fishing, or hiking can be sources of garbage, pollutants, and disturbance. Maintaining a **broad forested buffer** around the lake is critical for preserving habitat quality.

River otter, © K. Schmidt 2001

Conservation Recommendations

- Maintain water quality. Reduce or eliminate use of fertilizers and pesticides on nearby agricultural fields and lawns; minimize soil disturbance around the circumneutral bog lake; upgrade nearby septic systems to prevent nutrient enrichment; minimize runoff from roads and other impervious surfaces; avoid the use of herbicides for aquatic weed control.
- Maintain hydrology. This requires attention to activities in the lake watershed such as road and building construction, stormwater management, and groundwater extraction.
- Maintain or restore a vegetated buffer of 500 ft (150 m) from the lake edge. Leaving a broad buffer of undisturbed soils and vegetation may be crucial to safeguarding wetland habitat quality, hydrology, and northern cricket frog overwintering sites. Additional development in this buffer area should be discouraged, and road salting should be kept to a minimum.
- Protect habitats and assess potential impacts within 3,300 ft (1,000 m) of the lake edge. Development within this area may sever important travel corridors between northern cricket frog breeding habitats.
- Discourage use of motorized watercraft.
- Avoid the introduction of fish that may disrupt the lake's food web, including grass carp (which is used as a biological weed control) or game fish.

References

Gray, R.H. 1983. Seasonal, annual, and geographic variation in color morph frequencies of the cricket frog, *Acris crepitans*, in Illinois. Copeia 1983(2):300-311.

Kiviat, E. and G. Stevens. 2001. Biodiversity assessment manual for the Hudson River estuary corridor. New York State Department of Environmental Conservation, Albany. 508 p.