

# COBBOSSEE WATERSHED DISTRICT

ROBERT C. CLUNIE, JR.  
Chairperson

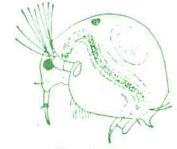
P.O. Box 418, Winthrop, Maine 04364  
Telephone (207) 377-2234



Algae

WILLIAM J. MONAGLE  
Executive Director

*Maine's first regional lake management district*



Zooplankton

## **Restoring Anadromous Alewife Passage to the Cobbossee Stream Watershed – A Threat to Lake Water Quality?**

Due to declining water quality in several of the lakes of the Cobbosseecontee Stream watershed, the Maine legislature authorized the Cobbossee Watershed District (CWD) in 1971 as Maine's first, and still only watershed district. The CWD's charge was direct, but broad: do any and all things necessary to protect, improve, and conserve the lakes, ponds, and streams of the 217-square mile watershed. Since CWD's inception, enormous amounts of time, financial resources, and community support have been applied to improve the water quality of numerous lakes and ponds of the CWD. Most notably, Annabessacook Lake and Cobbossee Lake have shown dramatic improvement, but remain threatened by excessive nutrient loading, particularly phosphorus, from their respective watersheds and continue to support nuisance algae blooms. The CWD staff view the potential restoration of anadromous sea-run fishes as representing a threat to lake water quality.

Sea-run alewife (*Alosa pseudoharengus*) have been denied access to the Cobbosseecontee Stream watershed since the 1770's due to the construction of dams on Cobbossee Stream. Alewife are anadromous fish that spend their adult life in the marine environment but spawn in freshwater environs including coastal streams, lakes, and ponds. In 1997, DMR began stocking Cobbossee Stream and Pleasant Pond at a rate of 6 adult alewife per acre, although that number has increased two-fold since that time. However, a top priority of the DMR is the restoration of the Cobbosseecontee Stream watershed to enable sea-run alewives, via fish passages of several million adult spawners, to a number of district lakes, primarily Pleasant Pond, Cobbossee Lake, and Annabessacook Lake, and possibly others. This initiative is advanced further by the recent Federal Energy Regulatory Commission's relicensing of the American Tissue Dam, owned and operated by KEI (Maine) and the requirement that KEI provide alewife passage at the American Tissue Dam if they were to gain access to that point. Currently, that access is denied by the former Gardiner Paper Board dam further downstream.

Based on available information, the water quality concerns the CWD has regarding alewife restoration are two-fold. First, juvenile alewives are extremely effective size-selective predators, driving strong changes in zooplankton community structure and relaxing the grazing pressure exerted by zooplankton on the phytoplankton (i.e., algae) community. Secondly, it is widely acknowledged in the scientific literature that alewife spawning can potentially add significantly to a lake's nutrient (e.g., phosphorus) budgets via the introduction of marine-derived nutrients, or MDN. Contributions come in the way of gametes (e.g., eggs), excretion, and spent adults (i.e., carcasses). In recognizing the threats these processes present to the highly sensitive water quality of several targeted lakes of the CWD, it would be prudent that all parties pause and refrain from imposing any formal mandates, or making any commitments, for the purpose of facilitating anadromous fish passage in lower Cobbossee Stream until a more thorough watershed-wide risk assessment is completed.