



Conserving The Nature of America

Sediment Quality within the Impounded Reaches of Cape Fear River Locks and Dams

The U.S. Fish and Wildlife Service and U.S. Geological Survey assisted the U.S. Army Corps of Engineers in an assessment of the chemical contaminants in, and toxicity of, sediments at Cape Fear River locks and dams. The Corps operates three locks and dams which are no longer used for commercial navigation, their original purpose. The Corps is interested in "decommissioning" the dams and is currently working with stakeholders to study options.

Our final report* concludes that surface sediments behind these dams are unlikely to be a water quality concern unless they are disturbed. Mobilization of sediments may result in short-term water column exposures of aquatic organisms, the significance of which can be evaluated for specific sediment disturbing activities that might be proposed in the future (e.g., dredging, dam modification).



Lock and Dam #3

USFWS Photo

* **Augspurger, T.P., C.G. Ingersoll, N.E. Kemble, J.L. Kunz and S.E. Ward. 2007. Sediment Quality within the Impounded Reaches of Cape Fear River Locks and Dams. U.S. Fish and Wildlife Service and U.S. Geological Survey. USFWS, Raleigh, NC.**

The following are highlights of the analyses and results:

- Twelve sediment samples were collected in November 2006.
- Sediment concentrations of metals and hydrocarbons were typically less than those associated with adverse effects to sensitive aquatic organisms.
- Sediments were not toxic in tests with sensitive bottom-dwelling organisms.
- Metal in sediment elutriates (water-soluble fraction of sediment contamination) and pore water (water between sediment particles) exceeded water quality standards indicating that sediment re-suspension could temporarily affect water quality.
- About half the sediment elutriates were toxic to test organisms, and the toxicity appears to be related to manganese from the sediments.
- When specific sediment disturbing activities are proposed for the river (e.g., dredging, dam alterations, etc.), our data can be used as part of a sediment risk assessment and management plan.

The report is available from the USFWS at <http://www.fws.gov/nc-es/ecotox/reports.html>
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