

HOW CLEAN IS CLEAN? A DIATOM-BASED PALEOLIMNOLOGICAL RECONSTRUCTION OF REFERENCE CONDITIONS IN LAKES OF NEW JERSEY, USA

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Diatom species were analyzed in 78 sediment core samples from lakes in New Jersey (NJ), USA. These samples are sediment surface samples taken from core tops (0-0.5 cm interval = present-day, or modern samples) and core bottoms that represent past, or pre-disturbance conditions if the core was of sufficient length to reach this time period. The sediment surface samples were combined with a subset of US EPA's National Lake Assessment (www.epa.gov/owow/lakes/lakesurvey/) samples to derive transfer functions for total phosphorus and total nitrogen using WA-PLS techniques. The transfer functions were used to reconstruct nutrient levels in core bottom samples and to quantify natural, pre-disturbance conditions and assess the current degree of cultural impairment. This study provides information that is critical to establish criteria for reference conditions and help lake managers set realistic targets for lake conservation and recovery.