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Title: Combining the U.S. EPA National Lake Assessment and the USGS MRB1 Sparrow Model to estimate the potential of Northeastern Lakes to provide Cultural Ecosystem Services.

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Abstract:

Lakes provide a variety of ecosystem service benefits that are important to communities in the United States. Standard water quality indicators can be used to assess a lake's potential to provide ecosystem services such as provisioning of water for domestic, industrial, and agriculture use. In contrast cultural services such as the provisioning of recreation opportunities and housing amenities may be more strongly influenced by perceived water quality in conjunction with socio-economic factors such as proximity to population centers, ease of access, substitutability, and the location of complementary amenities. Both objective and subjective measures of water quality were collected from over 1000 lakes during the 2007 National Lake Assessment. Field crew ratings of "Disturbance Level", "Biotic Integrity", "Trophic State", "Aesthetic Quality", "Swimmability", and "Recreation Value" are closely associated with nutrient and chlorophyll a concentrations, water clarity, local land use patterns, and habitat variables. These relationships can be used to develop ecological production functions that relate measured water quality to perceived water quality and biotic integrity. In this talk estimated nitrogen and phosphorus loads to Northeastern U.S. Lakes from the USGS MRB1 SPARROW model and NLA data and used to infer the potential of lakes to provide cultural ecosystem service benefits at the regional level.