

## Executive Summary

Rapid development is transforming the Northern Highlands Lake District of Wisconsin (NHLD). The expanding number and size of lakeshore buildings and increasing numbers of recreational visitors are creating unprecedented pressures in the region. The Resilience Alliance (RA; URL <http://www.resalliance.org>) has identified the NHLD as one of the world's critical regions in transition, and has launched a study of the resilience of the NHLD's social and ecological systems.

Scenarios of future change from 2002-2027 were developed to explore the ability of the NHLD to maintain its present social and ecological features despite changes driven from outside the region. In **Anaheim North**, the NHLD develops rapidly as tourism expands around theme parks in highly-developed population centers. In **Walleye Commons**, unexpected environmental problems lead to a decline in population followed by gradual reorganization around tribal initiatives. In **Northwoods Quilt**, growth and diversification of the population lead to resource conflicts which are resolved by a system that allocates recreational lands and lakes for certain specified uses. In **Refugee Revolution**, terrorism in Chicago leads to population growth as well as more governmental control of resource use. Key features of the scenarios are summarized in table at the end of this Executive Summary.

While none of the scenarios is likely to come true, the future will probably bring some elements of each scenario. It will be interesting to consider the likely consequences of alternative policies for the NHLD in the context of each scenario.

The scenarios suggest that vulnerabilities of the NHLD lie in low diversity of economic opportunity, low connectivity of institutions for collective problem-solving, and external demand for resources that could be extracted from the NHLD (such as water) or supplied by the NHLD (such as sites for theme parks and other engineered tourist attractions). Resilience of the NHLD, on the other hand, lies in diversity of the lakes and landscapes and in the potential of people to pull together in crisis. Endogenous sources of innovation within the NHLD are numerous but poorly connected. There is untapped potential for creative solutions to resource management in the tribes and in Lake Associations.

## Key Features of the Scenarios

Scenario Name	<b>Anaheim North</b>	<b>Walleye Commons</b>	<b>Northwoods Quilt</b>	<b>Refugee Revolution</b>
Key events	Expansion of tourist industry, decreasing local control, ecological decline	Ecological collapse, population decline, tribal renaissance, slow ecological recovery	Diversification of economy, conflict over resource use leads to heterogeneous landscape	Influx of refugees from urban terrorism; intensification of production from ecosystems
Triggers of change	Development of engineered recreation parks	Algae blooms, fish kills, chronic wasting disease, decline of resource-management institutions	Conflict over use of lakes and recreational lands	Terrorist attack on Chicago
Drivers of change and innovation	Transnational tourism corporations	Native Americans	Lake Associations	Federal and state agencies, national crisis
Economics in 2027 compared to 2002	Larger economy, more dependent on tourism, more variable over time, less equity,	Much smaller but more diverse economy, more equity	Larger, more diverse economy (telecommuting, service industry, resource management jobs), less variable over time, more equity	Much larger economy, more diverse (resource-extractive and service jobs), more equity, some variability due to fluctuating demand for NHLD resources
Ecosystems in 2027 compared to 2002	Degraded landscapes, wildlife, fisheries and water quality, except for a few refugia	Diversifying landscape, variable recovery	Heterogeneous landscape with heterogeneous uses	Working landscape: water exports, aquaculture, game farms, forest products