

A Landscape Ecology Analysis of the Great Lakes Basin

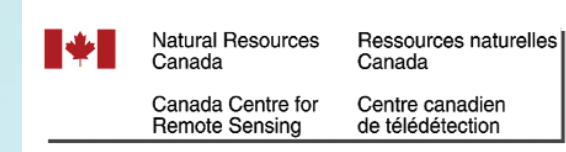
**Year of Water:
Thirty Years of Progress
Through Partnering**

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The U.S. Environmental Protection Agency (EPA) and Natural Resources Canada: Canada Centre for Remote Sensing (CCRS) have entered into an informal cooperative agreement to create and assemble consistent coverages of the Great Lakes area, and to conduct a joint landscape ecological study of the Great Lakes Basin.



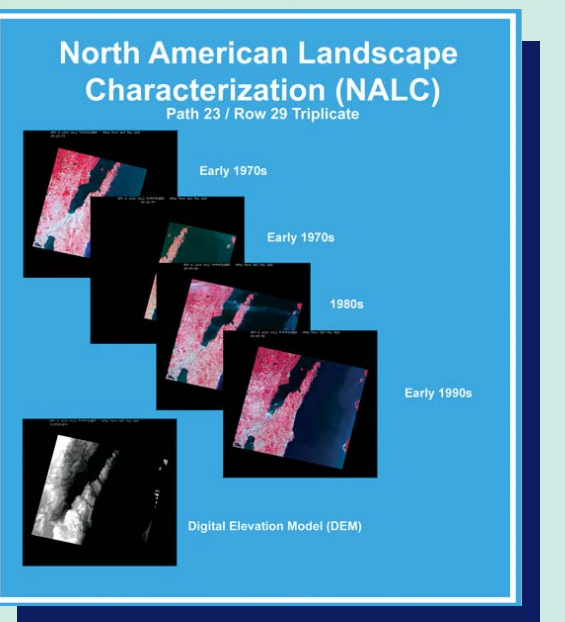
This land cover map has been developed by CCRS from satellite imagery, by combining EPA's North American Landscape Characterization (NALC) scenes and the CCRS archive imagery of Canada. (Guindon and Zhang)



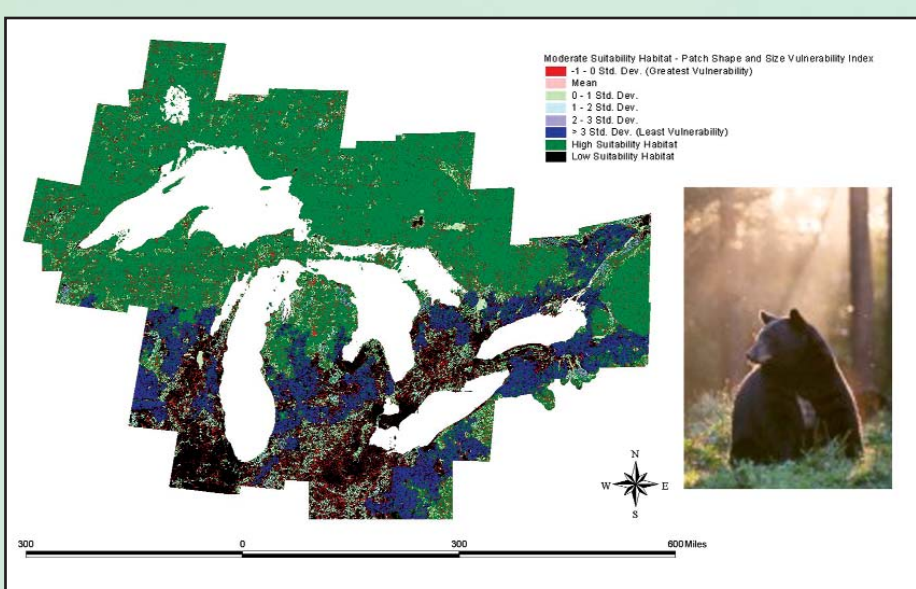
Erie State Game Area, Woodtick Peninsula, MI



St. Johns Marsh in St. Clair Delta, MI

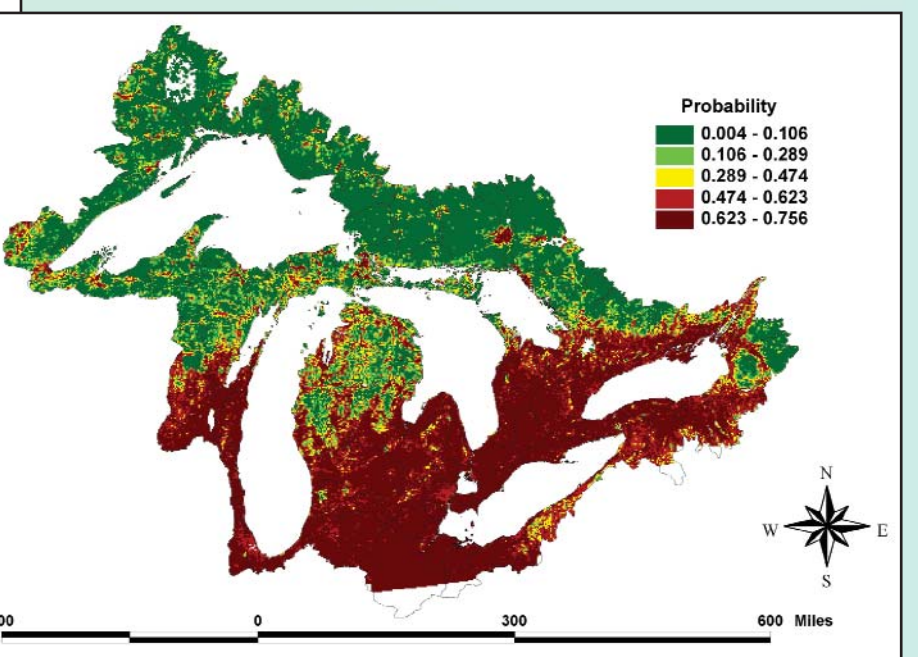


Habitat Suitability for Black Bear in the Great Lakes Basin



In the above map, highly suitable black bear habitat is shown in green and low suitability habitat is shown in black. Within moderately suitable habitat the vulnerability to loss or destruction is shown, from [red] greatest vulnerability to [purple] least vulnerability (Lopez).

Risk of Nitrogen Export Exceeding 7 Kg/Ha/Yr for the Great Lakes Basin (2.5 KM Grid Cells)



The above map shows an estimate of the risk of increased nitrogen export based on the land cover within the Great Lakes Basin. (Neale, Heggem and Jones)

Streams Network Port Huron, Michigan/Sarnia, Ontario Area



U.S. Side

Canadian Side

EPA and CCRS have assembled a complete coverage of streams and lakes by combining their individual holdings. (Edmonds)

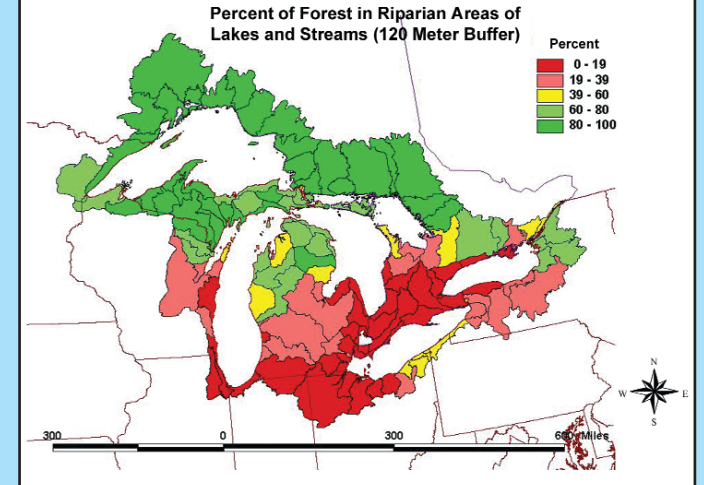
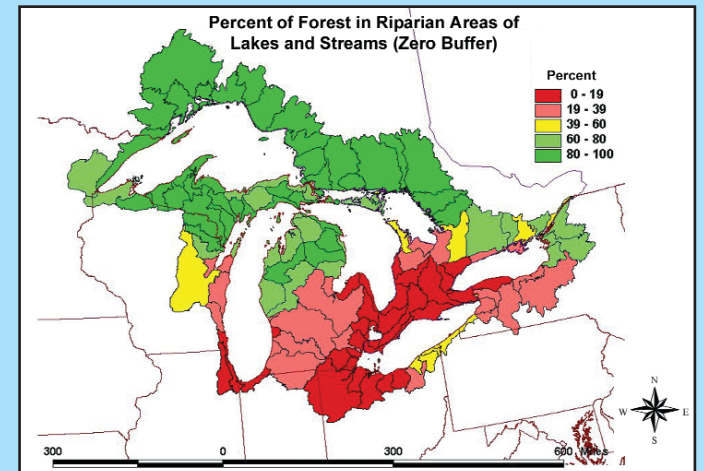
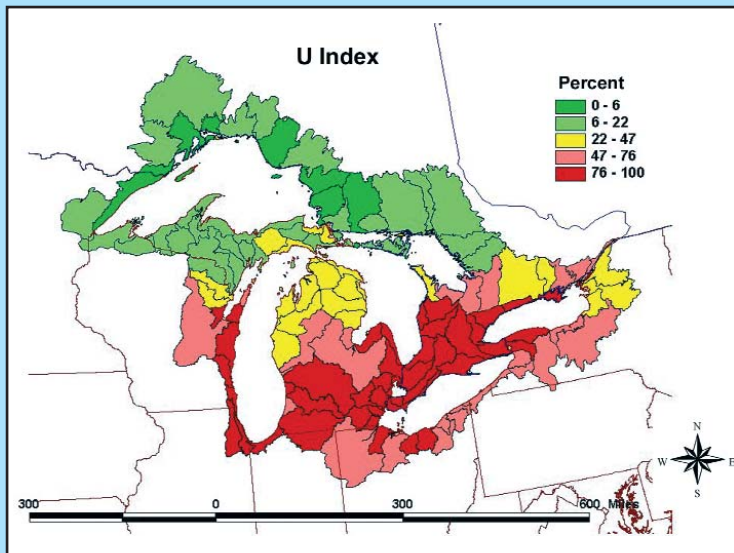


Metzger Marsh along the south shore of the western basin of Lake Erie



Tobico Marsh coastal wetland on Saginaw Bay, MI

This map shows an analysis of the U-Index across the Great Lakes Basin. The U-Index is a landscape indicator representing the extent to which humans have changed the natural vegetation to crops or urban land cover. (Edmonds and Heggem)



The map at left shows the effect of the analysis when only the land cover in the cell coincident with the stream or lake coverage is used. The bottom map shows the results of the analysis when a 120-meter buffer (each side) is applied. (Edmonds and Heggem)



Photographs by Ricardo Lopez