

Midwest Region

In 1991, a joint NPS/Wisconsin DNR pilot study was conducted to develop methods for identifying the causes of bald eagle nest failure at Apostle Islands National Lakeshore. Data collected support the hypotheses that weather, contaminant exposure, and prey availability all may impact the Apostle NL bald eagle population. Primarily as a result of this study, a \$320,000 proposal to continue and expand the project was funded by the Great Lakes Protection Fund. The expanded study will include behavioral work by NPS, Wisconsin DNR, the U/WI, and the USFWS, plus toxics analyses by MI/State/U.

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A rare plant inventory at Apostle Islands NL was begun in 1991. Three endangered and 12 threatened plant species on the Wisconsin State List of Threat-

ened and Endangered Species were known to occur in Apostle Islands NL prior to 1991. Two additional State endangered species found in the 1991 study were *Salix cordata* and *Armoracia aquatica*, and significant new localities were discovered for *Pinguicula vulgaris* (State endangered), *Trisetum spicatum* (State threatened), and *Salix planifolia* (not listed). Unsurveyed portions of the Lakeshore will be surveyed in 1991; inventory results will include rare species locations and descriptions, habitat requirements, recommendations for protection, and monitoring protocols, plus a published flora for the Lakeshore.

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The USFWS has published a proposed rule in the ***Federal Register*** to list the Karner blue butterfly (*Ly-*

eides melissa samuelis) as an endangered species. Its habitat is characterized by the presence of wild lupine (*Lupinus perennis*,) the only known larval host food plant and thus closely tied to the butterfly's ecology and distribution. Habitat is typically grassy openings within dry sandy pine/oak barrens or oak savannas. Periodic disturbance is required to maintain open areas supporting lupine. A 1990 survey by Indiana DNR searched 24 sites with potential Karner habitat; six were found to be inhabited by the Karner blue butterfly and are within Indiana Dunes NL.

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Two NPS scientists, Walter Loope of Pictured Rocks and Lisa Thomas of Wilson's Creek, were visiting lecturers at UWI, Madison, courtesy of the Great Lakes CPSU. Loope visited the Geography and Geology and Geophysics and lectured on fire ecology in northern hardwoods. Thomas visited in the Dept. of Landscape Architecture and presented a seminar on prairie restoration.