

THE ROLE OF HYBRIDIZATION IN CATTAIL (*TYPHA* SPP.) INVASIONS OF FRESHWATER WETLANDS IN GREAT LAKES NATIONAL PARKS. Steven J. Travis, Joy E. Marburger, and Steve K. Windels, Research Ecologist, USGS National Wetlands Research Center, Lafayette, LA 70506, Research Coordinator, Indiana Dunes National Lakeshore, Porter, IN 46304, and Biologist, Voyageurs National Park, International Falls, MN 56649.

In the early 1960s researchers reported that two species of cattail, the native *T. latifolia* (broadleaf cattail) and the European *Typha angustifolia* (narrowleaf cattail), hybridized in North America. The resulting hybrid was classified as *T. X glauca*. More recently modern molecular techniques permit analysis of the degree of hybridization locally and regionally to evaluate its effect on native wetland biodiversity. Species-diagnostic RAPD (randomly amplified polymorphic DNA) markers were used to identify pure *T. latifolia* and *T. angustifolia* so that individuals of these species could be used to identify diagnostic microsatellite makers for a subsequent analysis of genetic admixture within individuals exhibiting hybrid ancestry. We examined the prevalence of hybrids in three Great Lakes national parks representing multiple habitat types, and the relationship between clone size and hybrid status in newly invaded areas. Samples from nine East Coast sites from Virginia to Connecticut were also evaluated. Intensive sampling of 150 individuals from each of five sites was conducted during 2004, with a less intensive, broader survey of 20-40 individuals from each of 20 sites (including Isle Royale National Park) conducted during 2005. Results from the 2004 samples showed a history of hybridization within all sites, with a few pure *T. angustifolia* populations at St. Croix National Scenic Riverway and Voyageurs National Park. Individuals sampled at Indiana Dunes National Lakeshore and St. Croix showed evidence of backcrossing to *T. angustifolia*, whereas those at Voyageurs were more similar to *T. latifolia*. A higher incidence of first-generation hybrids was also apparent at Voyageurs, suggesting that *T. angustifolia* has reached this park most recently. The lack of pure *T. latifolia* in these samples suggests it may be at risk of extirpation from portions of its former range.