

STUDY AREAS

Eight fences were constructed and evaluated on 6 state and federal wildlife management properties (Fig. 1). Four fences, 2 on each site, were studied on Erickson Waterfowl Production Area (WPA), St. Croix County, and Horicon Marsh State Wildlife Area, Dodge County. Single fences were studied on Eggleston WPA, Dane County; Ward WPA and Haupt WPA, Columbia County; and Horicon National Wildlife Refuge (NWR), Dodge County.

Erickson WPA adjoins 2 other WPAs to form a 500-acre complex of public wildlife land centered on a 99-acre lacustrine, littoral wetland (Cowardin et al. 1979) described by Evrard and Lillie (1987). An additional 65 acres of palustrine, emergent wetlands lie within 0.5 miles of the nesting fields. The 2 study sites were located on the western half of the property.

Horicon Marsh State Wildlife Area is an 18-mile² tract adjoining the Horicon NWR. The southern third of the extensive Horicon Marsh is the dominant wetland on the property and borders the 2 study sites, which were located on the southwest and southeast corners of the property. Horicon Marsh is a palustrine, emergent wetland dominated by common cattail (*Typha latifolia*); it has been described by Linde et al. (1976) and Craven (1978).

Eggleston WPA is a 380-acre tract of public wildlife land with a complex of 56 acres of ditches and diked palustrine, emergent wetlands within 0.5 mile of the nesting fields. The study site was located in the central third of the property. Ward WPA is a 20-acre tract with a single upland field that borders a 61-acre palustrine, emergent wetland.

Haupt WPA is a 100-acre tract where Petersen's (1990) electric fencing study took place in 1980-82. The study site bordered a 135-acre lacustrine, littoral wetland dominated by common cattail. Three additional palustrine, emergent wetlands, totaling 36 acres, lie within 0.5 mile of the nesting fields.

Horicon NWR is a 33-mile² federal tract that adjoins Horicon Marsh State Wildlife Area. The northern two-thirds of Horicon Marsh is the dominant wetland on the property. The study site was adjacent to the NWR headquarters, on the east side of the property.

Private lands adjacent to all study areas were intensively farmed,

with corn (*Zea mays*), tame hay (*Medicago sativa*), and oats (*Avena sativa*) being the major crops (Wis. Dep. Agric. Trade & Consumer Protection 1987). Soils on the study areas were generally well-drained sandy or silt loams with 0-12% slopes (Glocker and Patzer 1978, Langton 1978, Mitchell 1978). However, both Horicon study areas had poorly drained soils, with silty clays present at the Horicon NWR area (Fox and Lee 1980). The uplands of all study areas were planted to various cool season grasses and/or warm season grasses dominated by switchgrass (*Panicum virgatum*). Annual precipitation ranged from 27-42 inches and averaged 35 inches for all areas during the study (U.S. Dep. Commerce 1983, 1984, 1985).

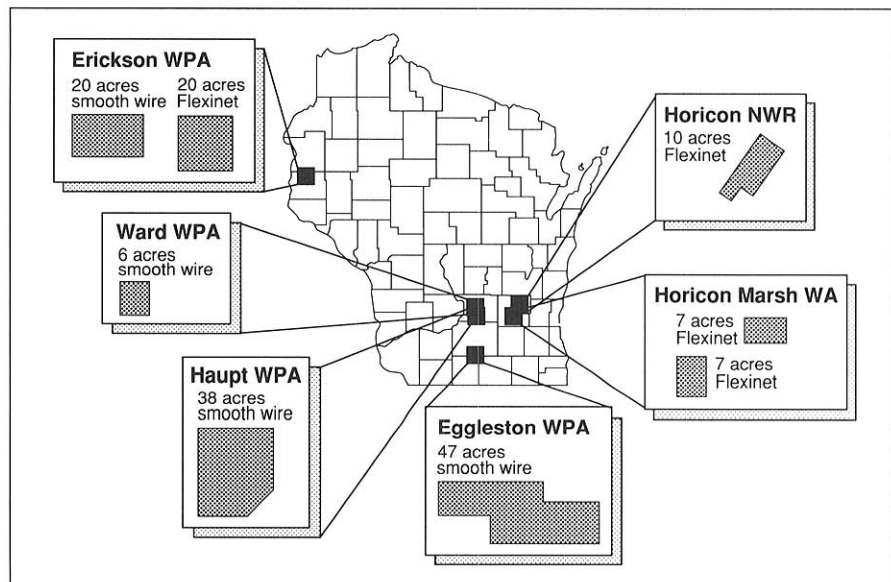


Figure 1. Locations of study sites and fence plots.



Electric fences enclosed stands of dense, monotypic switchgrass nest cover.