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Landbirds Banded on Seven Lake Michigan Islands 1968 - 1998

We banded 15,820 landbirds of 136 species on seven islands in northeastern Lake Michigan from 1968 through 1998. These data demonstrate that the islands are a migration stopover and breeding site along a major migratory pathway in this region of the Great Lakes. We mist netted from 1968 through 1998 at twelve sites on Marion (Power), South Manitou, North Manitou, South Fox, High, Garden, and Gull islands (locations described below). Our island banding has been the basis for several previous publications (Scharf 1973, Scharf et al. 1979, Scharf and Jorae 1980, Scharf and Stewart 1980, Scharf 1983, Case and Scharf 1985, and Scharf 1999). The records presented here add a quantitative dimension to the species observations of Hatt et al. (1948).

Standard mist nets (12 x 3 m nets with a mix of 32-mm and 36-mm mesh sizes) were set in natural openings and clearings in wooded or brushy habitats. Productive lanes were used repeatedly from season to season and year to year. Occasionally removal of overgrowth was done with hedge clippers. Five to 15 nets were opened for most daylight hours. We banded on 504 days with a mean capture rate of 31.7 birds per day. Records of net-hours are incomplete, but nets were open for most of the daylight hours in good weather. Due to the logistics of reaching the island habitats, we were resident on the islands during the time of the banding. Netting was done during migration and nesting seasons from April through October.

We mist netted at 12 locations on the following seven islands. **Marion (Power) Island:** (1) along the trail to the pre-1990s "Former Eagles Nest"; banding by WCS [44° 52' 4.23" N 85° 34' 36.94" W];

South Manitou Island: (2) at Light House Point; banding by WCS and MLC [45° 0' 28.64" N 86° 5' 38.91" W]; (3) at Gull Point Wooded Dunes; banding by GWS [45° 2' 0.45" N 86° 5' 38.91" W];

North Manitou Island: (4) on the first terrace above Lake Michigan in brush and the orchard in front of Wing Cottage; banding by WCS [45° 7' 10.24" N 85° 58' 42.29" W]; (5) on the second terrace on the level of the village cottages and ¼ mi (150m) southwest of Wing

Cottage in vegetation composed of nearly 100% beech (*Fagus grandifolia*) and cut-over brush; banding by WCS [45° 7' 8.32" N 85° 58' 54.87" W]; (6) at Bornique's house and farmstead in wooded cover between the house and extending to Dimmick's Point; banding by WCS [45° 4' 19.20" N 85° 58' 41.51" W]; (7) West-side Dock/Swenson farm in brushy areas around the marsh there; banding by MLC [45° 6' 54.41" N 86° 3' 23.43" W];

South Fox Island: (8) on the airfield access along two-tracks from Nickerson's Camp and brushy areas around the camp [45° 23' 59.22" N 85° 49' 54.17" W];

High Island: (9) at brushy spots around the DNR cabins and between the cabins and Lake Michigan; banding by WCS [45° 44' 7.89" N 85° 39' 28.14" W]; (10) at the Gull Point dune area; banding by WCS and LG [45° 44' 32.49" N 85° 39' 0.38" W];

Garden Island: (11) near the site of the historical post office, about mid-island, northeast of the DNR cabin; banding by WCS [45° 47' 9.31" N 85° 29' 33.51" W];

Gull Island: (12) in the wooded area south of the northern point in mostly stunted cedar, balsam and red osier dogwood; banding by GWS [45° 42' 35.89" N 85° 50' 12.52" W].

We choose to present information here only on numbers of the 23 species with over 200 captures (Fig. 1). This limits Fig. 1 to 11,228 birds. For recent, updated avifaunal distribution, the reader is referred to Van Zieren (2013) and Chartier et al. (2013). Four species (Canada Warbler, *Cardellina canadensis*; Nashville Warbler, *Oreothlypis ruficapilla*; Swamp Sparrow, *Melospiza georgiana*; and White-throated Sparrow, *Zonotrichia albicollis*) are listed as Priority Landbirds in the US Bird Conservation Plan (BCR 12) by Partners in Flight (Matteson et al. 2009). The most abundant species with 1457 bandings was the Myrtle (Yellow-rumped) Warbler (*Setophaga coronata*), and the second highest number banded (1417) was the Western Palm Warbler (*S. palmarum*). There were no recaptures of individuals of these two species in subsequent years. A Myrtle Warbler was captured on High Island in breeding condition during June, an indication that this species probably nests there. American Redstarts (*S. ruticilla*) were third highest with 830 banded. There were 43 recaptures of American Redstarts after >two months from the first

capture. Of the 20 remaining species (Fig. 1), 17 are long-distance migrants that could nest on the islands or the adjacent Upper Peninsula of Michigan. Black-capped Chickadees (*Poecile atricapillus*), Red-breasted Nuthatches (*Sitta canadensis*), and Cedar Waxwings (*Bombycilla cedrorum*) are short distance or eruptive migrants that could be resident on the islands year-around.

Our banding effort demonstrates that the islands in northeastern Lake Michigan lie in a significant migratory pathway for Nearctic-Neotropical birds. The islands provide refuge for nocturnal migrants caught over open water at dawn and may even be long-established resting and refueling stops along the way as shown by influx of birds from the south on spring dawns, and movement toward the south in fall. Additionally, the islands are the ultimate destination for some nesting individuals as shown by recaptures of breeding condition birds in successive years. Our composite compilation of landbird species on seven Lake Michigan islands during three decades of banding

illustrates the magnitude of migration and nesting and provides guidance for design and placement of proposed wind energy turbines in the Great Lakes (US Department of Energy 2012).

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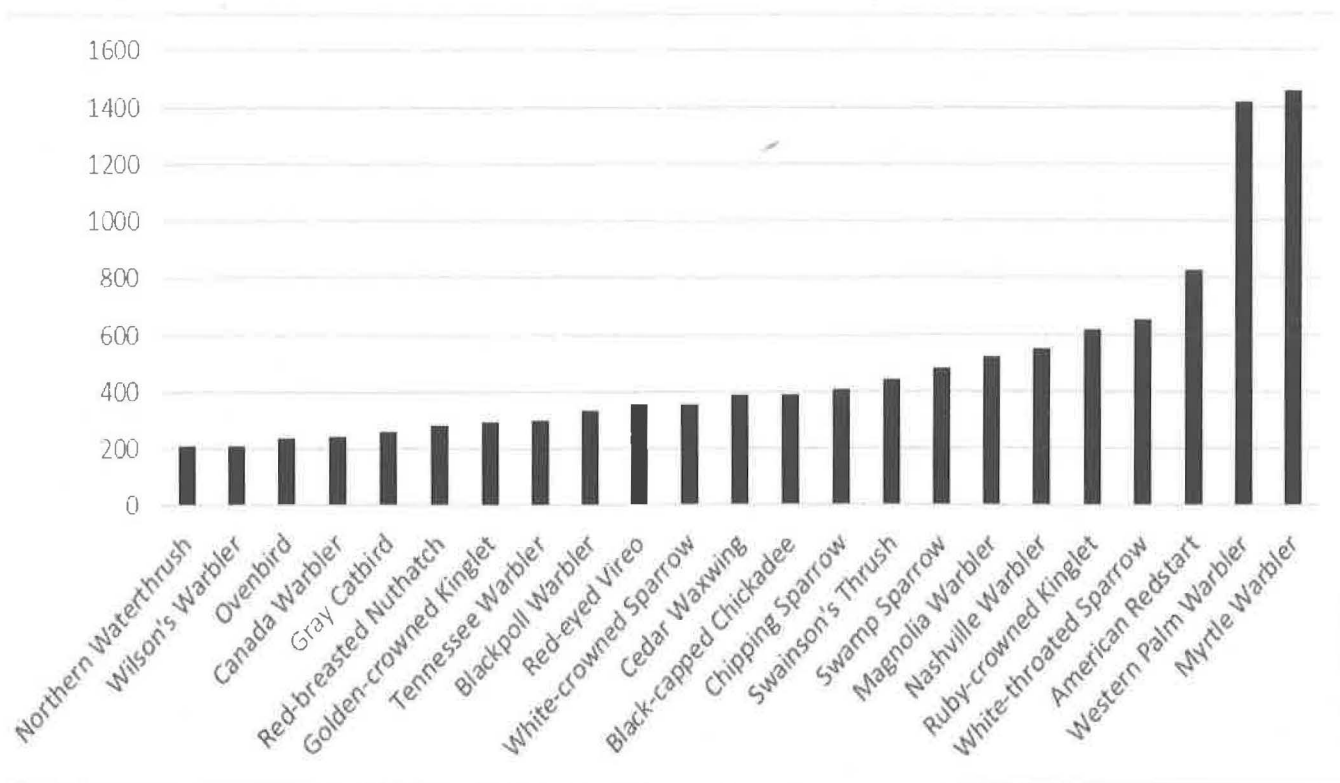


Fig. 1 Twenty three species (over 200 banded) of 136 species of birds banded on seven northeastern islands in lake Michigan from 1968 through 1998.

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**White-throated Sparrow
photo R.Pantle**