

NORTH AMERICAN WATERFOWL MANAGEMENT PLAN

Upper Mississippi River and Great Lakes Region Joint Venture Michigan Implementation Strategy (1998 - 2013)

Objective: Conserve 1,945,000 acres of waterfowl breeding habitat, supporting an annual duck breeding population of 650,000 by 2013, while ensuring healthy, sustainable populations of other wetland-wildlife species.

Strategies

Restore and/or construct over 30,000 wetland acres contiguous with grasslands lacking wetlands suitable for waterfowl production on private lands, existing public lands, and newly acquired public lands.

Establish over 60,000 grassland acres contiguous with wetlands suitable for waterfowl production on private lands, existing public lands, and newly acquired public lands.

Protect an additional 100,000 acres of wetland and associated upland valuable for waterfowl production by preventing naturally functioning wetlands and associated uplands from being negatively altered using current and new legislation, fee title acquisition, and long-term (≥ 10 years) easements. In addition, altered wetlands and uplands will be restored and enhanced.

Identify and exploit new management opportunities associated with human development, including roadside grasslands, county drains and their riparian zones, capped landfills, retention/detention basins, and wetland-loss mitigation projects. Opportunities also exist working with utility companies (i.e., power lines, pipelines, and hydro impoundments); local, state, and national parks; and county planners.

Develop conservation information/education initiatives to improve the public's knowledge of wetland values and functions, how to maintain these values and functions, wetland wildlife, wetland management, and the control of aggressive exotic plants. Target audiences will include agricultural landowners, industrial landowners, drain commissioners, and landowners interested in wildlife management.

Expand the coalition brought together by the NAWMP to increase the base of viable partners and enhance effectiveness within given focus areas.

Cost Estimate: \$5-10 million annually for the next 15 years.

The whole state of Michigan is within the Upper Mississippi River and Great Lakes Region Joint Venture. Focus areas described below have substantial use by waterfowl during migration, particularly those coastal waters and marshes of Saginaw Bay, the Lake St. Clair and Erie complex, and the eastern Upper Peninsula along the St. Mary's River and northern Lake Huron. However, emphasis for Michigan and other "production states" in the Joint Venture is waterfowl reproduction and the maintenance of healthy populations of other resident wetland wildlife. The Michigan implementation strategy reflects that emphasis and does not include migration habitat objectives.

Focus Areas for the North American Waterfowl Management Plan



Greatest potential to increase Michigan wetland wildlife populations exists on relatively productive lake plain landscapes where agricultural practices have eliminated or significantly altered wetlands and associated uplands. These landscapes dominate the Saginaw Bay region and also exist in the southeast corner of the Lower Peninsula and the eastern Upper Peninsula. Significant management opportunity also exists in a large ground moraine region in the south central Lower Peninsula, another area dramatically altered by agriculture.

Focus areas are regionalized by their similar physiographic characteristics, thus similar wetland-wildlife management potential. They are divided into “primary,” with greatest management potential for breeding waterfowl, and “secondary,” areas with lower management potential. Secondary areas contain isolated locations of high importance to waterfowl, but the potential to significantly increase breeding waterfowl populations is generally much lower. Management focus areas are described below in a landscape context, with a brief discussion on significant landforms, soil characteristics, present vegetative cover, land use, and ownership. Management implications as well as general conservation concerns are included.

Primary Focus Areas

1. Rudyard Clay Lake Plain (Landscape characteristics: clay lake plain). This 666 mi² flat lake plain was largely conifer swamp, hardwood-conifer dominated uplands and wetlands, and coastal marsh before settlement. Currently, it is about one-half forested and one-half low intensity agriculture dominated by hay fields and pasture; short growing seasons and wet clay soils prevent wide scale cropping. It is covered by mostly clay soils that are poorly drained and readily pond, especially closer to the St. Mary’s River (east side). Where wetlands have been constructed or restored within this vast grassland (hay and pasture), wildlife response has been dramatic. Mallards, blue-winged teal, gadwall, and American widgeon are the most common nesting duck species within the grasslands. American bittern, sora, bobolink, upland sandpiper, short-eared owl, and merlin are among the more unique species associated with these grassland/wetland complexes. Hooded merganser, black duck, American goldeneye, and ring-necked ducks can be found nesting in low densities within the forested landscape, whereas black and common terns, bald eagle, and osprey regularly nest near Great Lakes shoreline. Land ownership includes private, U. S. Forest Service (Hiawatha National Forest), and State (Lake Superior State Forest, Munuscong Wildlife Area).

Habitat objectives will emphasize acquisition of hayfields/pasture (4,000 acres) adjacent to existing public-owned grasslands, with wetland creation/restoration on new public grasslands (400 wetland acres) and privately owned hayfields/grasslands (1,600 wetland acres). Total duck production habitat objective = 20,000 acre increase (10:1 grassland:wetland ratio was used, as existing grasslands are expansive and provide abundant suitable nest cover).

2. Saginaw Lake Plain (Landscape characteristics: glacial lake plain and reworked till plain). This 2,390 mi² area was once mesic to wet-mesic forest, swamp forest, wet and wet-mesic prairie, and emergent marsh. Agriculture now dominates the landscape as a result of the lake-moderated climate and rich loamy soils. Poorly drained soils characterize the clay plain, but several wide sand channels from glacial melt-water streams are also present. Sand deposits have largely been reworked by wave action when the Great Lakes were at higher levels, resulting in dunes and spits typically higher and steeper than the clay lake plain.

Common waterbirds include mallards, blue-winged teal, yellowlegs, and American bittern. There are several rare plants, plant communities, and animals in this focus area. Wet and wet-mesic prairies were originally extensive, along with oak savannas, but these now remain only as small remnants, primarily on state-owned lands. Rare birds that occur in this area are short-eared owl, black tern, king rail, and Forester's tern. Land ownership is largely private. State game and wildlife Areas include Crow Island, Gratiot-Saginaw, Tobico Marsh, Shiawassee River, Nayanquing Point, Quanicassee and Wigwam Bay. Other public ownership includes Shiawassee National Wildlife Refuge, Bay City State Park, and the Au Sable River State Forest.

Habitat objectives will emphasize restoration/creation of functioning, productive wetlands (5,000 acres) and grasslands (15,000 acres) on private land, MDOT-managed land, and State/Federal lands, plus acquisition of agricultural lands adjacent to public lands to create/restore wetlands and grasslands. Total duck production habitat objective = 20,000 acre increase.

3. Huron Clay Plain (Landscape characteristics: clay lake plain, reworked till plain, and interlobate). This 3,690 mi² area once contained dry-mesic, mesic, and wet-mesic forest, oak savanna, swamp forest, wet and wet-mesic prairie, and emergent marsh. The focus area can be divided into two units, with the flat Sandusky Lake Plain (3,210 mi²) slopping gradually into Lake Huron and the interior Lum Interlobate (480 mi²) made up of end-moraine ridges and outwash deposits. About one-third of the lake plain has poorly or very poorly drained soils; most of the remaining soils are well drained or quite variable. Soil drainage within the interlobate portion is also variable.

Mallards, great blue heron, and a variety of sandpipers are common waterbirds found in the area, whereas some of the rarer species found here include black tern, common tern, yellow rail, and bobolink. Rare plant communities include wet and wet-mesic prairie, plus oak savanna. Broader conservation concerns in this area are significant loss of wetlands and forest fragmentation due to residential development. The focus area is mostly private land. State game and wildlife areas include Fish Point, Deford, Rush Lake, Sanilac, Vassar, Port Huron, Minden City, Cass City, Murphy Lake, Tuscola, Verona, Wildfowl Bay, and Lapeer. State parks include Lakeport, Port Crescent, Sanilac, Petroglyphs, and Albert E. Sleeper.

Habitat objectives will emphasize restoration/creation of functioning, productive wetlands (5,000 acres) and grasslands (15,000 acres) on private land, MDOT-managed land, and State/Federal lands, plus acquisition of agricultural lands adjacent to public lands to create/restore wetlands and grasslands. Total duck production habitat objective = 20,000 acre increase.

4. Ionia Moraine (Landscape characteristics: medium and coarse textured end and ground moraine). This 5,864 mi² area once consisted of vast forests of beech, sugar maple, oak-pine complexes, and conifer and deciduous swamp. The focus area is now largely agricultural and can be divided into two units. The Lansing Ground Moraine (5,053 mi²) has gently sloping soils ranging from well drained to poorly drained and from sand to clay and muck. Most of the uplands have been converted to cropland, while most of the swamp forest has been converted to pasture. The much smaller Greenville Moraine unit (811 mi²) on the northwest side of the focus area is generally hilly with well-drained sands and loamy sands in uplands, but poorly drained soils in the lowlands.

Wood ducks, mallards, and Canada geese are common, whereas long-eared owl and peregrine falcon are examples of rare species found in the area. One of the rarest plant communities in the state, an inland salt marsh, occurs here. However, because of its fertile soils and intensive

agriculture, few large tracts of forest or original wet prairie remain. Several public parcels dot the largely private landscape. State game or research areas include Portland, Lowell, Dansville, Mason, Flat River, Oak Grove, Maple River, Barry, Cannonsburg, Middleville, Rouge River, Stanton, Langston, and Rose Lake. Other public parcels are Seven Lakes and Sleepy Hollow State Parks and Manistee National Forest.

Habitat objectives will emphasize restoration/creation of functioning, productive wetlands (10,000 acres) and grasslands (20,000 acres) on private land, MDOT-managed land, and State/Federal lands, plus acquisition of agricultural lands adjacent to public lands to create/restore wetlands and grasslands. Total duck production habitat objective = 30,000 acre increase.

5. Washtenaw Lake Plain and Moraine (Landscape characteristics: glacial lake plain, end moraine, ground moraine, and outwash). Beech-maple forest, elm-ash forest, deciduous swamp, white and black oak savanna, wet prairie, and coastal marsh once covered this diverse focus area. Its 5,995 mi² can be divided into three units based on subtle landscape differences. On the east side of the focus area is the flat Maumee Lake Plain (2,309 mi²) with poorly drained wet loamy and clay soils prevalent. Human development and agriculture dominate the landscape. The Ann Arbor Moraines (1,632 mi²) is centrally located in the focus area. Loam and sandy-loam soils cover this unit, and they can be poorly drained in the lowlands. Agricultural development is extensive, but many of the lowlands and steeper upland ridges remain forested. The Jackson Interlobate (2,581 miles²) on the northwest side of the focus area has a relatively hilly terrain, with slopes on ground moraines of 0 to 6 percent, but slopes of 25 to 40 percent at end moraines. Soils range from sand to clay, and well to poorly drained. The Ann Arbor Moraines and Jackson Interlobate are covered primarily with agriculture, residential development, and forest and inland lakes.

Canada geese are very common throughout the interior of the focus area, and a variety of wading and shorebirds can be found along the Great Lakes shoreline. Rare birds found in this focus area are black tern, king rail, and prairie warbler. Rare plant communities are lake plain prairies and savannas. Within this largely private ownership exists several parcels of public land. State game, wildlife, and recreation areas include Petersburg, Pointe Mouillee, Lost Nation, Onsted, Gregory, Sharonville, Somerset, Ford, St. Clair Flats, St. John's Marsh, Erie, Unadilla, Rochester-Utica, Bald Mountain, Island Lake, Waterloo, Lake Hudson, Highland, Pinckney, Holly, Proud Lake, Pontiac Lake, Brighton, Ortonville, and Metamora-Hadley. State parks include Algonac, Sterling, and Hayes. There are also Metro and county parks: Oakwoods, Lower Huron, Lake Erie, Stony Creek, Metro Beach, Willow, Dexter-Huron, Hudson Mills, Parker Mill, Park Lyndon and Independence Oaks.

Habitat work that complements human development and high human populations (e.g., wetland-loss mitigation, landfill-cover management) will be especially important within this focus area. Restoration/creation of functioning, productive wetlands (5,000 acres) and grasslands (5,000 acres) will be emphasized on private land, MDOT-managed land, and State/Federal lands as well as acquisition of agricultural lands adjacent to public lands to create/restore wetlands and grasslands. Total duck production habitat objective = 10,000 acre increase.

6. Arenac Lake Plain and Moraine (Landscape characteristics: lake plain and fine end and ground moraine). This 1,470 mi² area was once mixed northern hardwoods, jack pine barrens, white and red pine forest, peatland and coastal marsh. The Standish (1,359 mi²) is the larger of the two units within the focus area, and it contains flat clay and sand lake plain. Wiggins Lake

(111 mi²) is the small westerly landscape unit, with predominately well drained soils on ground and end moraine.

Great blue heron, sandhill crane, and a variety of shorebirds use Great Lakes shoreline and interior wetlands. Black tern and wet prairie exemplify rare species and a rare plant community. Land ownership is a mix of private and public. Public lands are Huron National Forest, Au Sable State Forest, Wigwam Bay Wildlife Area, and Harrisville and Tawas Bay State Parks.

Habitat objectives will emphasize restoration/creation of functioning, productive wetlands (2,000 acres) and grasslands (3,000 acres) on private land, MDOT-managed land, and State/Federal lands. Total duck production habitat objective = 5,000 acre increase.

7. Allegan Lake Plain and Moraine (Landscape characteristics: gently rolling end and ground moraine and flat lake plain). This 2,656 mi² focus area was largely beech-maple forest, oak forest and savanna, and open dune before settlement. Conversion to agriculture, including orchards and vineyards, describes much of the current land cover. Soil textures range from sands to clays and well drained to poorly drained. The focus area can be divided into three units: Berrien Springs Moraine (southeast 770 mi²) with mostly well drained soils, Southern Lake Michigan Lake Plain (west 1,356 mi²) with well drained to poorly drained soils, and Jamestown (northeast 531 mi²) with mostly clayey soils and high water holding capacity.

Wood ducks, blue-winged teal, and a variety of shorebirds can be found along the coast and interior wetlands. The prairie warbler and loggerhead shrike represent more rare species. Conservation concerns center around human development, loss of wet prairie, and pressures on unique marshes (between beech ridges) which house many distinct plant species typical of the Atlantic and Gulf Coastal Plains of the United States. Land ownership is mostly private. Public ownership includes Allegan, Muskegon, and Grand Haven State Game Areas, and Van Buren, Saugatuck, P.J. Hoffmaster, Holland, and Muskegon State Parks. The Manistee National Forest and Riverside County Park are also in the focus area.

Habitat objectives will emphasize restoration/creation of functioning, productive wetlands (2,000 acres) and grasslands (3,000 acres) on private land, MDOT-managed land, and State/Federal lands. Total duck production habitat objective = 5,000 acre increase.

8. Kalamazoo Interlobate (Landscape characteristics: outwash, sandy ground and end moraines). Before settlement this 3,511 mi² area was covered by oak savanna, oak hickory forest, swamp forest, bog, tallgrass prairie, wet prairie, and prairie fen. Upland prairie and most upland forests have been converted to agriculture. Forest cover remains on the steeper end moraines. The focus area can be divided in two, including the Battle Creek Outwash Plain (2,750 mi²) in the southeast half and west border, plus the Cassopolis Ice-Contact Ridges (761 mi²) laying on a diagonal from southwest to northeast. Soils are mostly well drained sands, loamy sands, and gravel in the focus area.

Wood ducks and American bitterns are commonly found using local wetlands, whereas the cerulean warbler is an example of a rare species found within the focus area. Development pressures are high in the area, threatening wetlands and forests, reducing their ability to support viable populations of many game and nongame species. Dominated by private land, the focus area does include some game and recreation areas: Barry, Crane Pond, Fulton, Gourdneck, Three Rivers, Fort Custer, and Yankee Springs.

Habitat objectives will emphasize restoration/creation of functioning, productive wetlands (3,000 acres) and grasslands (2,000 acres) on private land, MDOT-managed land, and State/Federal lands. Total duck production habitat objective = 5,000 acre increase.

Secondary Focus Areas

9. Northern Continental High Moraines and Bedrock (Landscape characteristics: rolling hills, ground and end moraine ridges, exposed bedrock knobs, outwash plains, and some clayey glacial lake plains). The Michigan portion of this upper Great Lakes landscape ecosystem is roughly 10,000 mi². Original vegetation on the thick till soils was northern hardwood forest dominated by sugar maple, eastern hemlock, basswood, and yellow birch, with some white pine. This forest type persists over most of the focus area. A combination of cold climate, resulting from high latitude and high continentality, plus relatively nutrient-poor, acidic soils has resulted in minimal use for agriculture and lower resident waterfowl populations. Northern forest wildlife populations are abundant, with high beaver populations maintaining a landscape dotted with temporary and semi-permanent wetlands used by waterfowl.

Habitat objectives will emphasize conservation / restoration of naturally functioning wetlands on public lands and conservation of oldgrowth hardwood riparian forest on private and public lands.

10. Northern Lacustrine Lake and Till Plain (Landscape characteristics: flat topography, lake plain, outwash plain, and end and ground moraine). The Michigan portion of this landscape ecosystem is roughly 7,000 mi². Presettlement cover was largely diverse forest of northern hardwood, hardwood-conifer swamp, conifer swamp, and upland conifer, plus muskeg, open bogs and some open peatlands. Most of the focus area remains forested, with large expanses of swamp forest and low productivity peatland. Large areas of open muskeg, bog, and marsh are centrally located in the focus area and pasture can be found on loamy ground moraine primarily on the west side. Northern forest wildlife species are diverse, and beaver populations are high across the area.

Habitat objectives will emphasize conservation / restoration of naturally functioning wetlands and conservation of oldgrowth hardwood riparian forest on private and public lands.

11. Northern Lacustrine High Sand Plain and Moraines (Landscape characteristics: rolling terrain with some high elevations, lake plain, outwash plain, end moraine, and ground moraine). Original cover types in this 15,639 mi² focus area included northern hardwood forest, jack pine barrens, white pine forest, hardwood-conifer swamp, and conifer swamp. After intensive logging, farming was widely attempted and most was not successful. The focus area has largely reverted to forest. Fire suppression has also allowed barrens to become forested. Forest wildlife populations are generally abundant, including beaver.

Habitat objectives will emphasize conservation / restoration of naturally functioning wetlands and conservation of oldgrowth riparian forest on private and public lands.

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TABLE 1. *Breeding Duck Population Objective (# breeding ducks in Southern Michigan, rounded)*

	<u>Breeding population</u>		
	<u>Current</u>	<u>Desired</u>	<u>Increase (%)</u>
Michigan	550,000	650,000	100,000 (18)

TABLE 2. *Production Habitat Objective (# acres wetlands and associated grasslands)**

Michigan Focus Areas	<u>Pre-JV</u>	<u>Current</u>	<u>Desired</u>	<u>Total</u>
	<u>(pre '93)</u>		<u>Increase</u>	
Rudyard Clay Plain	20,000	21,000	20,000	41,000
Saginaw Lake Plain	80,000	82,000	20,000	102,000
Huron Clay Plain	120,000	123,000	20,000	143,000
Ionia Moraine	190,000	188,000	30,000	218,000
Washtenaw Lake Plain and Moraine	190,000	186,000	10,000	196,000
Arenac Lake Plain and Moraine	47,000	47,000	5,000	52,000
Allegan Lake Plain	80,000	80,000	5,000	85,000
Kalamazoo Interlobate	110,000	110,000	5,000	115,000
Northern High Moraines and Bedrock	320,000	320,000		320,000
Northern Lake and Till Plain	220,000	220,000		220,000
Northern High Sand Plain and Moraines	500,000	500,000		500,000
TOTAL:	1,830,000	1,830,000	115,000	1,945,000

*Wetland acreage (net acres) continues to be lost in some Michigan focus areas due to intensive development associated with high human populations. In addition, grasslands are dynamic (but largely declining) due to reforestation, changing agricultural practices, plus enrollment in conservation programs. Therefore, estimates of waterfowl production habitat area are rough and used primarily as a baseline to measure NAWMP objective achievements.

GJS/sam
(NAWMP6/regs)