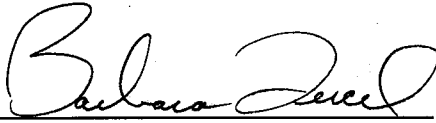
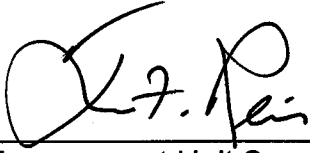
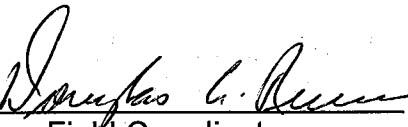
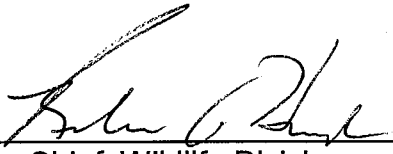


SHIAWASSEE RIVER STATE GAME AREA STRATEGIC PLAN APPROVAL SIGNATURE PAGE

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SHIAWASSEE RIVER STATE GAME AREA STRATEGIC PLAN

Barbara Lercel, Wildlife Biologist

I. Introduction

Purpose

The purpose of this Strategic Plan is to ensure that legal obligations to manage for the stated purpose of the Shiawassee River State Game Area (SRSGA) are fulfilled. Public input was considered in developing the plan, but this is not a consensus document.

History of the Area

The SRSGA was dedicated as a game area on May 9, 1951 with the acquisition of the 1,574 acre Sheldon tract in a Memorandum to the Michigan Conservation Commission (Appendix 1). Justifications for the purchase were given as flood storage under the Saginaw Valley Flood Control Plan, exceptionally good wildlife habitat, and suitability for wildlife restoration and public use. The Michigan Department of Conservation (renamed Department of Natural Resources, DNR) and the U.S. Fish and Wildlife Service (USFWS) signed a cooperative agreement on July 19, 1955 for the Shiawassee Flats Wildlife Management Area that outlined acquisition of land, public hunting, joint cooperation on planning, development, operation of the project area, and flood control (Appendix 2). Because the Shiawassee Flats is a historically important waterfowl concentration area, the primary objective stated when the area was established was to provide a major refuge for waterfowl in the northern Mississippi Flyway and expand waterfowl hunting opportunities. The cooperative agreement stated that there would be "major efforts directed to waterfowl" and that "various other small game and deer must necessarily play a lesser role" but could "be encouraged on the upland periphery". Prior to its signing, the Conservation Commission approved this cooperative agreement October, 23, 1953.

Currently, 9,758 acres are under State ownership at the Shiawassee River State Game Area. Pittman-Robertson funds (PR) were used to purchase at least half of the acreage on the area. Other funds have included State Game Fund, a combination of Recreational Bond/PR, Michigan Land Trust Fund, special legislation or multiple funding sources. Because major portions of the game area were purchased for the purpose of wildlife restoration and management (i.e., with PR funds), restoration and management of wild birds and mammals, and provision for public use of wildlife resources are the primary management goals. Multiple use of the area is encouraged, provided it does not interfere with this primary purpose of wildlife management and habitat restoration. The USFWS is

the agency responsible for the oversight of the PR Program. Each state receives an allotment or apportionment from these funds based on the size of the state and the number of licensed hunters within the state. PR funds are generated from taxes paid by hunters and shooters.

Figure 1 illustrates the presettlement vegetation (ca. 1800) for Saginaw County. Knowledge of presettlement vegetation is useful as a benchmark for understanding the potential conditions that can exist in an area, but should not be viewed as a management goal for an area. Early survey reports describe a maze of rivers and marshes in the Saginaw Valley, with deciduous forests, pine ridges, and prairies also found. Coastal marshes and wet/wet-mesic prairies extended from Saginaw Bay up the Saginaw River. Farther inland, lowland hardwood forests were found (Albert 1995).

Environmental Inventory

Project Location

The SRSGA is located in central Saginaw County in portions of St. Charles, James, Swan Creek, and Spaulding townships (Figure 2). The approximately 9,200-acre Shiawassee National Wildlife Refuge (SNWR) lies to the east. Local population centers include St. Charles (pop. 2,215) adjacent to the southwest boundary, Saginaw (pop. 61,799) 10 miles to the northeast, and Chesaning (pop. 2,548) 10 miles to the south. The headquarters is at 225 Spruce Street in the village of St. Charles and encompasses approximately three acres including the St. Charles Waterfowl Observatory.

Topography, Water Resources, Climate, Soils, and Geology

SRSGA is located in the Saginaw Bay Lake Plain subsection of the Southern Lower Michigan Regional Landscape Ecosystem (Albert 1995). This area is a flat glacial lake clay plain broken by several extensive sand channels that were created by glacial events (Albert 1995). The elevation of the Saginaw Bay Lake Plain ranges from 572-800 feet above sea level (Albert 1995), and the ordinary high water mark for Lake Huron is 581.5 feet above sea level. The SRSGA lands vary from 584-594 feet above sea level.

The approximately 19,000 acres of state and federal land in the Shiawassee Flats Wildlife Management Area is within the Department of Environmental Quality Geological and Land Management Division's Shiawassee Flats critical floodplain storage area. The Shiawassee Flats is a floodplain in which five rivers converge to form the Saginaw River which flows 22 miles north into Saginaw Bay. The rivers that join to form the Saginaw River are the Bad, Cass, Flint, Shiawassee, and Tittabawassee. These rivers and their tributaries contribute approximately 75% of the drainage of the largest watershed in Michigan which is over

8,000 square miles and encompasses all or portions of 22 counties. Flooding has apparently occurred more frequently during the last 15 years than it did in the past. Efficient draining and channelization of private lands has led to rivers peaking sooner and carrying larger volumes of water following precipitation events. Flood waters also recede more rapidly and carry more sediments and contaminants. Water levels are dependent on rainfall in the watershed, on wind events on Saginaw Bay, and on Lake Huron water levels. Seiches have raised water levels in the Saginaw River by as much as 3' in one day. Winter and early spring floods sometimes occur when ice blocks river channels.

Flooding in the Shiawassee Flats has major effects on the floodplain biota. Floods can and do destroy wildlife nests, crops, and forest regrowth. Conversely, floods can increase the fertility of the bottomlands, restore water to wetlands, and enhance fish migration.

In addition to the rivers, the game area contains approximately 2,200 acres of diked permanent marshes and seasonally flooded croplands. This system of dikes, ditches and pumps reduces the extent of the floodplain until water levels reach 589 feet above sea level (i.e., the highest level of all dikes). The dike system also adds stability to critical marsh communities which provides a consistent food supply and cover for the nutritional needs of migrating waterfowl and shorebirds in the game area.

Water quality is affected by industry, agriculture, construction, urban sprawl and housing development in the Saginaw Bay watershed. Recently, dissolved solids have reached undesirable levels and chlorine and fecal coliform levels have exceeded standards multiple times annually in tributary streams. The Flint and Tittabawassee Rivers flow through municipal and industrial areas and transport PCBs and dioxin (U.S. Fish and Wildlife Service 2001). Locally, water quality in the Shiawassee Flats is also affected by water level management and agricultural stewardship on the game area.

The mean annual temperature at Saginaw is about 47 degrees F with January and July means being 23 degrees F and 72 degrees F, respectively. Annual temperature extremes are about -20 degrees F to 98 degrees F. Growing seasons in the Saginaw Bay Lake Plain are 150-160 days (Albert 1995). The frost-free period usually extends from about May 5 through October 10. Average annual precipitation is 28-30 inches with approximately 40 inches of snowfall (Albert 1995). However, snowfall accumulations of more than 8 inches are rare at SRS GA.

Poorly drained mineral soils characterize the clay plain (Albert 1995). The General Soil Map for Saginaw County (U. S. Dept. of Agriculture 1994) lists the Shiawassee Flats soils to be those of the Sloan-Zilwaukee-Misteguay Association. The soils of this association are nearly level, poorly to very

poorly drained, clayey and loamy soils on flood plains. These soils exhibit the following features:

- a. Frequent flooding
- b. Very slow runoff
- c. Slow permeability
- d. High organic content
- e. Slight water and wind erosion potential
- f. Suitability to crops is fair because of flooding hazard
- g. Prime farmland where protected from flooding
- h. Suitable as woodland

While the most common soil on the game area is the Zilwaukee-Misteguay Complex, an area between St. Charles and Beaver Creek is Sloan-Ceresco Complex. Some of the riverine marsh soils are Sloan Silt Loam, and Fluvaquents. Because of the rich loamy soils, the area has seen intense agricultural development (Albert 1995).

Paleozoic bedrock with Pennsylvanian sandstone, shale, coal, and limestone underlies the Saginaw Bay Lake Plain subsection (Dorr and Eschman 1984). Underneath this are extensive marine deposits important for the chemical, oil, and gas industries in the Saginaw Valley (Albert 1995). About 550 million years ago, Saginaw Valley was under an ocean which left rich deposits of salt, gypsum, organic materials, coal, and petroleum. The landscape was formed by glacial ice during the Wisconsin glaciation. Ten thousand to eleven thousand years ago, glacial Lake Saginaw dominated the landscape. Undulating plains, level outwash flats, and old glacial lake beds were formed. Coal and salt mining were popular local industries from the 1890's to 1950's. The last coal mine closed in St. Charles in 1950.

Biotic Resources

Existing Plant Communities

Several plant communities exist at SRSGA. Chapman's (1986) description of Michigan Natural Community types was used below and included eight palustrine communities: emergent marsh, submergent marsh, Southern wet meadow, wet prairie, Southern swamp, Southern floodplain forest, Southern shrub, and inundated shrub swamp. Other plant communities described below include cropland and grassland.

Emergent marsh is characterized as a shallow water marsh with emergent narrow- and broad-leaved vegetation as well as floating-leaved vegetation at the shores of lakes and streams. Dominant plants that are found at SRSGA include cattail, pickerelweed, arrowhead, smartweed, bulrush, water plantain, sedges, spike rush, duckweed, pond lily, and burreed. Reed canary grass is another common plant found in emergent wetlands at SRSGA. Both diked

and undiked emergent marshes exist at the area, and purple loosestrife and phragmites are invading some emergent marshes.

Submergent marsh communities exist in many of the diked and undiked areas of SRSGA. Submergent marsh is described as a primarily submerged marsh of deep to sometimes shallow water in lakes and streams. Dominant plants include coontail, water weed, pondweed, and duckweed. These species exist in open water areas of emergent marshes.

Southern wet meadows are sedge and grass dominated wetlands usually in stream valleys, lake margins, and in depressions and channels in glacial outwash. Dominant species include bluejoint grass, sedges, reed canary grass, spike rush, rushes, cattail, and Joe-Pye weed. Several impoundments at SRSGA are managed in the wet meadow stage to encourage moist soil plants such as smartweed and wild millet. These areas are drawn down in the summer (early-mid June) and reflooded in the fall for peak waterfowl migration. The seeds from these moist soil plants offer a high energy food source for migrating birds and the mudflats created offer valuable shorebird habitat.

Wet prairie consists of native lowland grassland on saturated, level, seasonally inundated sites. Bluejoint grass, prairie cord-grass, and sedges are the dominant species in wet prairies. Other characteristic plants include asters, reed canary grass (alien), willows, marsh fern, star-grass, fringed loosestrife, and cowbane.

Southern swamps are wetland deciduous forest types that are situated primarily in depressions and channels of ground moraines and also in depressions of glacial outwash, especially near moraines. Southern swamps are typically flooded in the spring and have little understory. Dominant plant species are silver maple and green ash. Other associated species of Southern swamps include sycamore, red maple, and oaks.

A bottomland deciduous forest that occurs on mineral soil and is typically located along streams characterizes Southern floodplain forests. Dominant plants include silver maple, green ash, and red maple. Other important species include box elder, willow, and cottonwood. Beech, basswood, shagbark hickory, hawthorn, oaks, sycamore, hackberry, and dogwood are some associated species. The 1,635-acre "flooded woods" at the junction of the Shiawassee and Bad Rivers was historically dominated by silver maple and green ash.

The Southern shrub community is moderate to long persistent successional and dominated by shrubs. It is a transition stage from wet meadow to swamp forest. These communities have fluctuating water levels, poor drainage, and usually occur next to streams, rivers, and lakes. Dogwoods,

willows, and elderberry are the dominant plant species. Associated species include plantain, milkweed, bluejoint grass, horsetail, Joe-Pye weed, bulrush, goldenrod, and potentilla. This community experiences seasonal hydrologic cycling and beaver are usually associated with the community's persistence.

Inundated shrub swamp is described as a moderate to long persistent, shrub-dominated successional community. It is transitional between emergent marsh and forested swamp. Like the Southern shrub community, the inundated shrub swamp is characterized by fluctuating water levels and very poor drainage. Buttonbush, willow, smartweed, cattail, and plantain are the dominant vegetative species. Sedges, dogwoods, silver maple, rushes, reed canary grass, arrowhead, bulrush, and burreed are some of the other associated plants. For example, the flooded woods now exhibits an inundated shrub swamp community after approximately 85% of the timber died in the 1980's when high water was left in the impoundment during the growing season. Now, buttonbush and reed canary grass are common, as well as emergent plants such as smartweed, arrow head, and purple loosestrife. Annual flooding and dewatering of this impoundment is the primary factor determining plant communities. The diked 320-acre permanently flooded timber area known as, "the rookery" also has inundated shrub swamp communities.

A list of the flora of SNWR is located in Appendix 3 (U. S. Fish and Wildlife Service 2001). It is assumed that the flora inventory for SRSGA is similar.

There are diked and undiked cropland areas at SRSGA. The fields in the diked units are drained with a system of sump ditches, tile, and pumps and crops are flooded in the fall for migratory waterfowl use and hunter opportunity. Corn, soybeans, sorghum, millet, buckwheat, oats, and wheat are planted here, with shares being divided between the State and sharecroppers.

Grassland areas on SRSGA consist of cool season grasses and warm season grasses. These stands occur in various mixtures and monocultures on field borders, dikes, and the edges of forested areas. Many areas have also been recently planted to warm season grasses in an attempt to restore agricultural fields to grasslands with native species. Grasslands provide winter and nesting cover for many bird species.

Major Fish and Wildlife Species

Fishing, especially for channel catfish, white bass, crappie, largemouth bass, suckers, and northern pike has been a traditional recreational activity on the SRSGA. Northern pike and yellow perch utilize riverine and emergent wetlands for spawning and nursery habitat. The river system is also connected with Saginaw Bay and therefore serves as important spawning

habitat for walleye, suckers, white bass, and shad. Salmon, steelhead, and sturgeon have on occasion used the rivers in the area but are rarely found there today.

Common carp also exist throughout the river system. These fish tend to disturb the river bottom, increasing turbidity and reducing water quality. Bow fishing for carp is an activity that is seasonally important on this game area. Appendix 4 contains a list of fish found or expected to occur in the rivers that flow into the SNWR (U. S. Fish and Wildlife Service 2001). It is assumed that these species are similar for the SRSGA.

Saginaw Bay supports an annual migrating population of over 3 million waterfowl. SRSGA is included in the Saginaw Lake Plain portion of the North American Waterfowl Management Plan's (NAWMP) Upper Mississippi River and Great Lakes Region Joint Venture (Figure 3). The Saginaw Lake Plain is one of the primary focus areas in Michigan. Focus areas have substantial use by waterfowl during migration and have the greatest management potential for breeding waterfowl (NAWMP Upper Mississippi River and Great Lakes Region Joint Venture Implementation Plan 1998). A great diversity of bird species utilize the area with nearly 300 species of resident and migratory birds having been reported in the area. Waterfowl and shorebirds are the most numerous because of the marshlands and abundant food supplied in the nearby farmed wetlands. Mallard, wood duck, blue-winged teal and Canada geese nest regularly while redhead, pintail, and black duck are less common nesters. Common moorhen, American bittern, black tern, Virginia rail, green heron, sora rail, grebes, sandpipers, American coot, Great blue heron, Great egret, and least bittern have also been documented to nest in the area, especially in the diked emergent and brush impoundments.

Red tailed hawk, great-horned owl, northern harrier, and Cooper's hawk are the most numerous raptors. The most notable however is the bald eagle which nests annually on SRSGA and SNWR. The large number of raptors present reflects the abundance of nesting habitat and forage species on the game area.

Wild turkey sightings on SRSGA appear to be increasing. Other upland game species include the ring-necked pheasant and bobwhite quail. All three exist where there is an interspersed area of agriculture, grassland and brush. Many species of warblers, and other songbirds also inhabit SRSGA. Appendix 5 contains a list of bird species found on the SNWR (U. S. Fish and Wildlife Service 2001). It is assumed that bird species occurring on SRSGA are similar.

Approximately thirty species of mammals occupy the Shiawassee Flats. Common species include white-tailed deer, cottontail rabbit, woodchuck, fox

squirrel, beaver, river otter, muskrat, mink, raccoon, coyote, striped skunk, opossum, red and gray fox, and weasel. River otter observations appear to be increasing.

Eighteen species of reptiles and amphibians are known to occur in the Shiawassee Flats. Common species include Northern water snake, eastern garter snake, snapping turtle, painted turtle, American toad, chorus frog, spring peeper, gray tree frog, green frog, bullfrog, leopard frog, and wood frog.

Invertebrates, particularly aquatic insects, are abundant. A list of mammals, reptiles, amphibians, and invertebrates occurring on the SNWR (U. S. Fish and Wildlife Service 2001) is found in Appendix 6. It is assumed that similar species occur at SRSGA.

Endangered, Threatened, and Special Concern Species

Threatened, endangered, and special concern species and communities are found in the Saginaw County Element List (Figure 4). Cooper's hawk (SC), Black tern (SC), common moorhen (SC), bald eagle (T) all have documented occurrences on SRSGA. The Eastern fox snake (T) is also known to occur on the game area, and an Eastern massasauga (SC) was seen on the area in 1993 but none have been detected since. Some of the management guidelines for the Eastern fox snake make maintenance and operation difficult on SRSGA, primarily because of timing of projects to minimize impacts on the snakes and their habitats. Staff will continue to work within the guidelines to protect this and other T/E species while finding innovative ways to maintain structures and habitats. Other conflicts similar to this may arise if other T/E species are found on SRSGA.

Nonnative/Nuisance Species of Concern

The most significant aggressive exotic species at SRSGA is purple loosestrife. Beginning in the late 1980s, purple loosestrife began to invade the wetlands around Saginaw Bay, and by the early 1990s, it had become a dominant plant species in many areas. In 1994, the DNR in cooperation with Michigan State University released non-native loosestrife-eating beetles (*Galerucella californiensis* and *G. pusilla*) at several sites around Saginaw Bay. In many areas, the beetles have greatly reduced or eliminated the purple loosestrife. The flooded woods impoundment, despite beetle release efforts, continues to be dominated by purple loosestrife. Other efforts to control purple loosestrife in the flooded woods have included bulldozing openings. Once cleared, native species such as smartweed and arrowhead return and appear to keep the purple loosestrife in check for several years. When needed, staff at SRSGA relocate beetles around the area.

Phragmites is beginning to increase significantly at SRSGA. As methods become available for the effective and economical control of phragmites, it

is recommended that control efforts begin before this invasive non-native species becomes dominant.

As stated above, common carp occur in river systems at SRSGA. Carp have also entered diked emergent wetlands during floods and have increased turbidity and decreased water quality in some of those areas. While control measures such as carp guards on tubes are used in some impoundments, control over carp entering diked impoundments is difficult because of the frequency of flooding at SRSGA. Carp control is possible during periods when impoundments are drawn down.

As new non-native aquatic species arrive in the Great Lakes and river systems, the SRSGA staff will work closely with DNR Fisheries Division on control and management techniques.

Another invasive species inhabiting SRSGA marshes is the mute swan. In some cases, territorial mute swan pairs displace native breeding waterfowl and waterbirds, especially during the breeding season. SRSGA staff follow guidelines for mute swan control on state land under federal permits and DNR policies.

Surrounding Land Use

Land use changes that have altered the landscape following settlement include logging, drainage, manufacturing, agriculture, Great Lakes shipping, and development. Agriculture, automobile manufacturing, and chemical manufacturing currently make up approximately 50% of the land use in the Saginaw Valley (Fig. 5). The Tri-county area (Saginaw, Bay and Midland Counties) also supports a population over 1.5 million people. While the population of Saginaw County has decreased during the past decade, the construction of new single family housing in the county is increasing and thereby decreasing the amount of open space. The number of farms in Saginaw County has decreased 70% over the last 40 years (U. S. Fish and Wildlife Service 2001), however remaining farms appear to be larger.

Management Area History

Historical Land Use

The Saginaw River ecosystem has been historically important as a waterfowl and shorebird concentration area. Early explorers reported that the area was a maze of rivers and marshes with magnificent forests of white pine and hardwoods on the higher lands. Vast sedge meadows and wild rice marshes provided ideal waterfowl habitat.

Settlers were attracted by the extremely large white pine and hardwood forests. Billions of board feet of white pine were logged from 1830-1880 in the Saginaw basin. By 1900 most of the timber had been removed and agriculture was becoming the primary land use. Forest and wetland loss was

significant as land that had been cleared was drained for farming practices. At least 40% of the presettlement wetlands have been lost in the Saginaw Bay area. Agriculture and manufacturing became the chief sources of income. Demands of population growth and industrialization replaced wildlife habitat until only a vestige of the original wetlands remained. The great variety of wetland habitats once available to waterfowl was modified substantially by draining and siltation.

This habitat loss, combined with the decline in waterfowl numbers as a result of drought in the 1930's, prompted wildlife agencies to protect and develop wetlands. In seeking a location for a major waterfowl management area in the northern portion of the Mississippi Flyway the Shiawassee Flats was selected on the basis of remnant wetlands, good water supply, and generally level topography.

From its inception, the Shiawassee Flats project was a joint effort between the USFWS and the MDC to conserve and manage remaining wetlands. The SNWR provides a wildlife sanctuary and limited controlled trapping and hunting as well as wildlife viewing, hiking, biking, and environmental education. The state game area furnishes opportunities for public hunting, fishing, trapping, and wildlife viewing. Both areas further function to store flood waters which help to protect downstream land.

A cooperative agreement between the two agencies was approved by the Conservation Commission on October 23, 1953, and signed by the agencies in 1955. The agreement presented guidelines for wildlife management and funding, flood control participation and coordination of management activities between the SNWR and the SRS GA. The proposal stated that primary management would be directed toward waterfowl with emphasis on Canada geese.

The federal refuge portion was authorized in March, 1953. The state game area was authorized by the Conservation Commission in May, 1951. Most of the present holdings were acquired in the 1950's. Funding for acquisition has included Pittman-Robertson, Game and Fish Protection Fund, Recreation Bond monies, and the Michigan Land Trust Fund.

The Saginaw Valley Flood Control Project was developed by the U.S. Army Corps of Engineers (Corps) and approved in 1958 by Congress. The Shiawassee Flats experiences the greatest flooding in the valley due to the converging rivers having greater combined flow capacity than the outlet. In addition, natural ponding and floodplain areas have been eliminated by extensive diking. The Corps plan proposed an improved dike and channel system with lateral reservoirs for flood control storage and fish and wildlife management. The Shiawassee Flats portion of the project never received sufficient financial support. The USFWS and the MDC continued to

Board completed Phase I of the plan in 1990 but there have been no completions since. An agreement between the Corps, USFWS, and the MDNR in 1983 obligated the USFWS and the MDNR to provide flood storage basins as secondary benefits after fish and wildlife management concerns were addressed.

Upon the establishment of the Shiawassee Flats wildlife project, the USFWS and the Michigan Department of Conservation entered into an agreement in 1955 which states in part, "Under appropriate Federal or State regulations the public will be permitted to fish in the waters in accordance with Michigan laws when these activities do not interfere with the primary objective of the project, which is waterfowl management." That verbiage set the tone for the management of both areas, which are still managed primarily for waterfowl to this day, while accommodating many additional activities as well.

Hunting, fishing and trapping have been the chief recreational uses of the game area since its establishment. Hunting and trapping are conducted under a permit system to promote a high quality experience. Fishing does not require permits. Other outdoor recreational activities which do not conflict with wildlife use or hunting are encouraged (e.g., hiking, biking and birding).

Archeological and Historical Sites

State Historical Preservation Office (SHPO) procedures have been followed for all documented work that might have an affect on archeological or historical sites that may be eligible for the National Historic Register. Archaeological clearance must be approved by SHPO prior to any earth moving on the area. Located in Appendix 7 is the current SHPO clearance letter for earth moving activities at SRSGA.

During 1971-1973, the Saginaw Valley Chapter of the Michigan Archaeological Society explored an aboriginal site on the banks of the Bad River (T. 11N, R. 30E, Sec. 34). Their conclusion was that the site may well have been a seasonal food gathering camp of Woodland Indian occupation similar to other sites explored along the Shiawassee River. Several other areas on SRSGA may have also been occupied by Native Americans.

Three historical coal mines remain on SRSGA.

Public Use

Hunting

Based on use days, hunting is the most popular activity on SRSGA, with waterfowl hunting making up the largest component. Beginning in 1967, all waterfowl hunting was placed under a managed system and the Saginaw County Goose Management Unit (GMU) which includes all of SRSGA and

SNWR was established. A quota system is set up for the Saginaw GMU (Figure 6), and currently the quota is set at 2000 geese. The season closes when the quota is reached or after 50 days, whichever comes first. In 1975, all hunting at SRSGA was placed on a permit basis from September 15-December 31. SRSGA is a managed waterfowl area meaning that permits for all waterfowl hunting that falls within the duck hunting season timeframe are issued at the check station by a draw held each day at 5:00 AM for the morning hunt, and again at 11:00 AM for the afternoon hunt. Hunters are registered as either individuals or parties of 2-4 hunters for each hunting zone. Hunters must stay within their hunting zone to provide a quality and safe waterfowl hunting experience. All permits must be returned at the end of the hunt period. An annual fee or a daily fee (currently \$13.00 and \$4.00, respectively) is required during the regular duck hunting season and will be extended to other waterfowl seasons should a draw for hunting areas become necessary. A September early goose season currently exists and permits are issued for this season using a self-registration system. The same system has been used for the January two-day portion of the regular waterfowl season.

Deer hunting is also extremely popular at SRSGA. Currently, hunters can register for a drawing for several deer hunts on SRSGA. In addition, there are several open archery hunt periods in which permits are issued over-the-counter (Appendix 8). Annual or daily fees are also required for deer hunting. Firearm hunts are restricted to areas outside the managed waterfowl hunting zones. Archery and muzzleloader hunting is allowed on most of the area, with the exception of the wildlife refuge. SRSGA is also a deer check station.

Deer hunts are managed in the Shiawassee Flats Deer Management Unit (DMU 173) cooperatively with the SNWR. Each year, a winter aerial survey of deer is completed to estimate post-hunting season populations in the DMU. Recruitment rates are calculated on this estimate and a population is estimated for upcoming fall. Deer hunts are planned using these pre-hunting season estimates. Public and private-land antlerless quotas are set with input from the SNWR and other local stakeholders (e.g., Shiawassee Flats Advisory Council). Numbers of crop damage complaints, car-deer collisions, hunter opportunity, and habitat condition (e.g., overbrowsing or poor regeneration of select timber cuts) are also factors considered when determining deer hunts.

Small game hunting opportunities abound at SRSGA but are limited to outside the managed waterfowl zones from September 15 until the end of the waterfowl season. The wildlife refuge is closed to hunting. Small game hunting requires a permit also. Pheasant, rabbit, and squirrel hunting is popular. Predator hunting, especially for coyote is increasing. The number of spring turkey hunters using the area is also increasing.

Trapping

Trapping is by permit only. Free annual trapping permits are issued on a first-come-first served basis. Trapping is not allowed on SRSGA until the waterfowl season is over. The entire area, including the wildlife refuge, is open. There are currently no restrictions or additions beyond the statewide regulations for trappers. The primary species trapped is muskrat, followed by beaver, raccoon, and mink. Occasionally, fox, opossum, otter, and coyote are harvested.

Fishing

Fishing is a popular activity in the rivers and tributaries in the area. The SRSGA is open to fishing except in the managed waterfowl zones during waterfowl season. Species targeted include crappie, Northern pike, yellow perch, and largemouth bass in streams. Fishing and spearing for carp, suckers, and bullheads is also common.

Bird Watching

Due to the diverse landscape in the Shiawassee Flats including riverine marshes, diked marshes, agricultural fields, and bottomland forest, there is enormous year round potential for bird watching on the game area. The entire area is open to bird watching except the wildlife refuge and managed waterfowl zones during the waterfowl season, however vehicle access is limited to areas outside gates and the best birding areas are accessible only by foot, bike, or boat. Waterfowl, shorebirds, wading birds, raptors, and warblers are the birds most likely pursued.

A Michigan State University report (Leefers and Propst 1993) concluded that recreational activities from the SRSGA and SNWR contributed significantly to the local economy. They estimated that hunters, anglers, birdwatchers, and hikers spend approximately \$748,000 in Bay, Saginaw, and Tuscola Counties when visiting the areas. They further estimated that this resulted in supporting 25 private sector jobs.

Other Public Uses

Many bicyclists ride the area's dikes, often to scout conditions for hunting. The area is open to cross country skiing, but snow cover is seldom sufficient to provide quality ski conditions. Snowmobile use, horseback riding, and ORV use are prohibited. All motorized vehicles, other than outboard motors, are prohibited at SRSGA. Occasional educational tours are given by staff as requested.

Increased public use and new public use activities are emerging issues at SRSGA and could further stretch the demands placed on this public area. While already mentioned as prohibited, there is consistent pressure to allow ORV use and horseback riding. It appears that specialized sportsmen (e.g.,

anglers, deer hunters, and waterfowl hunters) compete for limited space and opportunity. For example, deer hunters and anglers have voiced opposition over the water management in the flooded woods. Some claim that SRSGA managers are destroying deer habitat and fishing access in the Shiawassee and Bad River to accommodate waterfowl hunters. Requests to hold the following events on public land have been made on this and other areas: paintball games, scavenger hunts, dog trials and training, and public runs.

Commercial Use of the Area

All commercial activities at SRSGA are incidental to management activities that are undertaken to meet stated management goals.

Sharecropping

Four sharecroppers farm about 730 acres of agricultural land on SRSGA each year. State shares are $\frac{1}{4}$ and consist of the corn strips in the managed waterfowl zones and other upland food plots. In 2002, state and sharecropper shares totaled 201 and 528 acres, respectively. Because soil compaction within the diked farm units has resulted in reduced crop yields over the past eight years, conditional chisel plowing after harvest is now allowed with approval from SRSGA staff. This will only be allowed on a 2-3 year rotation and a minimum of 50% of crop residue must be left. To reduce soil loss, grass filter strips have now been increased to a minimum of 60' in diked farm units.

Timber

In the last eight years, there has been a shift at SRSGA to use select timber cuts instead of clear cutting used previously. Establishment of tracts of early forest successional stages has resulted while maximizing mast and cavity producing species. All timber sales are made using sealed bids. Over the past five years, 14 select cuts have been made (or are in the process) totaling 216 acres.

Oil/Gas Wells

There are no oil or gas wells currently on the SRSGA.

Concessions

There are no concessions at SRSGA.

Leases and Rights-of-Way

Several Consumers Powers Rights-of-Way exist at SRSGA. These include South Miller Road (L-6859, dated 1985), Prior/Broughton Road (L-6562, dated 1983), Ryan Road (L-5483, dated 1977), and Spencer Road (unknown, dated 2002). In addition, Saginaw County maintains a right-of-way on all county roads and drains within SRSGA. At the headquarters, Consumers

Power has a pipeline right-of-way (L-3359, dated 1961) and the Village of St. Charles has a storm sewer ROW (L-6205, dated 1981). There are two known test well site easements, one with the U.S. Geological Survey (L-7049, dated 1987) and the other unknown (L-6038, dated 1980).

Three reservations on land purchases are still valid on SRSGA. Mr. Hare, under a 1985 agreement where the State purchased 60 acres from him, reserved all oil and gas on the property for a 20-year period. Mrs. Surdock, under a 1986 agreement where the State purchased 40 acres from her, reserved all "oil, gas, and/or other minerals together with the right of ingress and egress for the purpose of mining, drilling, and exploring said lands and said oil, gas, and other minerals, which appear in a separate oil and gas deed" for a 20-year period. Lastly, Mr. Taggett made several reservations under a 1997 agreement where the State purchased 240 acres from him. The only one still valid is the right of first refusal for sharecropping the said land on an annual basis for a 10-year period.

Facilities/Capital Improvement Inventory

Federal Aid requirements mandate that all facilities paid for with PR funds be maintained throughout their useful life (50CFR80.17). Appendix 9 contains the Facility Inventory Summary for SRSGA.

Buildings

The St. Charles DNR Field Office, which serves as a hunter check station, and a workshop are located in the village of St. Charles. Two storage silos are also located here. The headquarters office building includes restrooms, public office area, office space, and storage space. Two equipment storage barns and two small sheds are maintained in Section 28, T.11N, R. 03E, on Prior Road. This facility is referred to by local personnel as the Ott Farm. There is a pump house for the Prior Road pump in Section 27, T. 11N, R. 03E.

Bridges

Three wooden bridges capable of supporting 15 tons are maintained to provide access for farm and construction equipment to the diked units to the east and south of the Shiawassee and Bad Rivers. These bridges are located at the Hulien Road access site, at the radial gates, and in Section 24, T. 11N, R. 03E (second hay bridge). Another, non functional bridge is located near the Miller Road access site and is known as the first hay bridge. A steel foot bridge is maintained in Section 11, T. 10N, R. 03E.

Roads and Trails

Dike tops double as access roads for authorized vehicles. Some more heavily traveled segments of dikes have 23A crushed limestone on the dike tops to reduce ruts which hold water and severely impact the conditions of the dike. A 3/4 mile dike top road is maintained from the east end of Hulien

Road north to the public access site. Three compacted aggregate wheelchair accessible trails are maintained to allow wheelchair travel to three accessible deer blinds.

Public Use Facilities

Twenty one parking lots are currently maintained. All parking lots are graveled except for the paved lot at the headquarters. Three of these parking areas (Headquarters, Miller Road, and Hulien Road) also serve as boat launch sites. A wheelchair accessible duck hunting blind is located at the Wahl Road parking lot.

Signs and Boundary Markers

The entire area is posted "State Game Area Hunting by Permit Only" or "Wildlife Refuge". This amounts to about 28.6 miles of boundary. Hunting zones and fields are also posted to direct hunters. Several area rules and regulation signs are maintained along county roads which enter the area.

Utilities

Consumers Energy provides electricity to the headquarters, the Ott Farm, and three of the pump stations.

Gates

There are currently 14 steel gates permanently positioned to prevent unauthorized vehicle traffic on the area. New gates may be added as needed.

Dikes

A complex system of dikes and ditches control water levels on the game area. Approximately 42 miles of dikes are maintained by mowing, prescribed burning, installing rip-rap and gravel, and issuing trapping and woodchuck hunting permits. Ditches are maintained by periodic dredging to ensure unobstructed flow of water to the pumps. Permits are obtained from the DEQ Geological and Land Management Division and the U.S. Army Corps of Engineers for major repairs to dikes and for ditch clean-outs.

Water Control Structures

Five pump stations are maintained on SRSGA, three in diked agricultural units and two in diked marshes. The flooded woods impoundment contains a radial gate structure which is two 20-foot wide metal radial gates supported by a bridged, concrete foundation. Many tubes, slide gates, and stoplog structures are located throughout the area. A 600' 30" CMP (siphon tube) runs under the Bad River to connect the Prior Road pump sump to the flooded woods. This is the key water source for pumping or gravity flow. This structure is aging and efforts should be made in the near future to look at possibilities of replacement.

Tree and Shrub Plantings

In 1995, five hundred silver maple saplings were planted in the flooded woods. However unsuccessful, this project was an attempt to restore presettlement vegetation to this segment of the Saginaw River Valley ecosystem by using native species. Other plantings in the past have included autumn olive, white pine hawthorn and multiflora rose to enhance upland cover along field and forest borders. There have been no plantings in the last few years, however if future plantings are done, there will be a focus on restoring native plant communities that compliment existing vegetation.

Herbaceous Seedings

Sharecroppers plant about 530 acres of corn and soybeans annually in exchange for leaving approximately 200 acres of food plots standing for wildlife food and cover for waterfowl hunters. State personnel plant about 300 acres of food plots on SRSGA, consisting primarily of buckwheat in the diked agricultural units, and about 50 acres of upland food plots (usually a corn, sorghum, sunflower, buckwheat seed mix). All but approximately 20 acres of buckwheat are left standing for wildlife. The 20 acres of buckwheat are harvested and the seed is used for small grain plantings the following year.

Previously, approximately 50 acres of switchgrass was planted for winter cover and nesting cover along field borders, and in blocks in the undiked cropland areas. Since the last master plan was written, over 300 acres of agricultural land has been restored to grassland communities. Most recently, approximately 160 acres of those 300 were planted with primarily native warm season grass species (e.g., switchgrass, big bluestem, little bluestem, and Indian grass) and forbs (e.g., coneflower, black-eyed susan, and coreopsis) under Saginaw Bay NAWCA grants. Restoration efforts in this community are especially important because grassland bird populations are declining more than other avian species over the last 20 years (Michigan Dept. Environmental Quality and Michigan Dept. Natural Resources 2001).

II. Management Goals and Objectives

Overall Management Goal

The goal of this plan will be to apply the mission of the DNR Wildlife Division to enhance, restore, and conserve the State's wildlife resources, natural communities, and ecosystems for the benefit of Michigan's citizens, visitors, and future generations. Recognizing SRSGA's importance in the surrounding landscape, specifically this plan aims to maintain healthy wetland and associated upland communities for migratory and residential wildlife and provide recreational opportunities for hunting, trapping, fishing, and wildlife viewing. Monitoring and re-evaluation of management will be an annual process to insure that operations are efficient, effective, and following current Division policy.

The principles of ecosystem management were considered in writing this plan. It is acknowledged that multiple temporal and spatial scales need to be considered in ecosystem management. Other principles considered include sustainability, complexity and connectedness of ecosystems, the dynamic nature of ecosystems, humans as components of the ecosystem, and adaptability. Two additional goals were determined based on these including management for sustainable healthy ecosystems that maintain ecological and evolutionary processes and management to provide economic benefit and societal values.

To fulfill the legal obligations of the original land acquisition, the overall goal is also to continue to provide flood storage under the Saginaw Valley Flood Control Plan and provide for wildlife restoration and public use.

Major Legislation and Policies

Federal Laws

- Endangered Species Act,
- Federal Aid in Wildlife Restoration Act (P-R)
- Clean Water Act

Michigan Law, Public Act 451

- Part 31: Water Resources Protection (Floodplain Management)
- Part 91: Soil Erosion and Sedimentation Control
- Part 303: Wetlands Protection
- Part 365: Endangered Species Protection
- Part 405: Wildlife Restoration, Management and Research

NRC Policies

- Public Involvement in Activities of Department, Guidelines for Implementing Special Land Use Rules and Regulations for State Game Areas in Zone 3

Wildlife Division Procedures

- Implementing Special Land Use Rules and Regulations for State Game Areas in Zone 3

Local Agreements and Directives

Many rules and regulations apply to SRSGA because of its designation as a managed waterfowl area, location in a GMU, hunting and trapping by permit only, and specialized deer hunts. Appendix 10 contains the Wildlife Conservation Act Orders and Appendix 11 contains the Land Use Orders that pertain to SRSGA. Many rules and regulations for SRSGA are also listed on the back of the Game Area map (Appendix 12).

A captive waterfowl observatory is maintained by the Village of St. Charles at the SRSGA headquarters. A Site Specific Agreement for the Waterfowl Observatory was signed in 1989 (Appendix 13) that outlined the responsibilities of each party in the development and maintenance of the project.

Several long-term agreements exist and were discussed under Leases and Rights-of-Way.

There are no known county or township ordinances that would affect this Master Plan.

Objectives

Wildlife Restoration and Management

- Maintain viable populations of plant and animal species native to SRSGA. An emphasis will be placed on wetland species.
- Emphasize waterfowl production through habitat improvements.
- Manage a healthy deer population at ecologically responsible levels that will allow regeneration of native plants, keep crop damage to an acceptable level, and provide hunting opportunity.
- Conduct wildlife surveys as needed.
- Band waterfowl to achieve statewide banding goals.
- Collect biological data as needed to attain population monitoring goals.
- Enhance diked wetlands for wildlife through drawdowns, flooding, burning, or by allowing natural water level fluctuations.
- Provide a refuge area for undisturbed residence by wildlife.
- Maintain agricultural practices in a cost-effective manner.
- Emphasize waterfowl and other migratory bird use through habitat improvements.
- Provide seasonally flooded cropland/moist soil areas for migratory waterfowl use.
- Continue timber cuts to maintain species composition and provide age class diversity.

- Assess the presence of and potential for introduction and spread of non-native and invasive species and control as necessary. Specifically, monitor the progress of purple loosestrife control and redistribute *Galerucella sp.* beetles to enhance their impact on loosestrife. Innovative techniques for the control of phragmites should also be explored.
- Restore and maintain natural processes and native communities on altered ecosystems where opportunities exist. Continue restoration of functioning, productive wetlands and grasslands under objectives for the Saginaw Lake Plain portion of the NAWMP.
- Apply agriculture and forestry Best Management Practices to management of the SRSGA in an effort to maintain high level of stewardship in the Shiawassee Flats.
- Provide assistance as necessary to private landowners to protect, restore, or manage wildlife habitat.
- Cooperate with local hunter and conservation groups, university and government studies, and other DNR Divisions.

Wildlife Related Recreational Activities

- Provide hunting and trapping opportunity with emphasis on waterfowl hunting within managed waterfowl portion of the area.
- Continue to manage area as a managed waterfowl hunting area.
- Provide a safe hunting experience.
- Provide seasonally flooded cropland/moist soil areas for waterfowl hunter recreation.
- Provide opportunities for fishing.
- Provide opportunities and facilities for wildlife related activities compatible with hunting objectives (e.g., bird watching, photography).
- Provide information and educational assistance to the public at appropriate times through a year-round office and seasonal wildlife check station.
- Work cooperatively with local hunter and conservation groups and other DNR Divisions.
- Provide educational and/or area tours as requested.

Rare, Unique, or T/E Species or Communities

- Identify, restore, and protect natural communities and threatened, endangered, or special concern species.
- Maintain viable populations of native species and establish and increase these populations if the potential exists.
- Protect and improve total native diversity and the patterns and processes that maintain diversity.

Facilities Management and Maintenance

- Operate and maintain all facilities in a cost-effective manner.
- Provide a clean, safe, comfortable working environment for employees.
- Provide a clean, accessible, safe, well maintained office and check station for public interaction.
- Provide access to the area through well maintained dikes, roads, and parking areas.
- Maintain dike and ditch system, pumps, and water control structures for desired water level manipulation.
- Maintain farming and heavy equipment.
- Maintain boundary markers and other informational signs.
- Control unauthorized vehicle traffic.
- Improve water quality and reduce soil loss on area and surrounding rivers, streams, and wetlands by continuing to increase filter strips on agricultural fields, gradually dewatering fields and impoundments, leaving 200' uncut strip along riverine corridors, and continue fall plowing restrictions.
- Continually evaluate the costs and benefits of management infrastructure and remove inefficiencies.

Land Acquisition

The objective for land acquisition is to purchase land within the proposed SRSGA acquisition boundary (Figure 7). Priorities for future acquisitions on SRSGA are landlocked parcels, restorable land (i.e., wetland or grassland restoration activities), exceptional native plant communities, and parcels that will improve access to other areas on SRSGA. Priorities should reflect the acquisition and restoration priorities of the Saginaw Bay Watershed Wildlife Habitat Conservation Framework (Nelson 2000). Under this framework, the highest priority is given to areas lakeward/riverward of the 585' contour and areas with high biodiversity and abundance of native, imperiled, and sensitive species. The proposed acquisition boundary line has been redrawn since the last Master Plan (1996-2000) to reflect recent acquisitions (e.g., zones 21-28) and residential lots that were previously included.

Monitoring

Operations will be continuously monitored for success and techniques will be adjusted as necessary to better meet goals and objectives. Wildlife populations will be monitored through annual brood surveys, fall refuge surveys, and consistent observations. Monitoring of wildlife populations and habitat assist in gathering information for setting regulations and in management plans. Additional population and habitat surveys can be incorporated as required and as needed. In particular, recently completed NAWCA wetland and grassland restorations should be monitored for wildlife use, plant species present, and overall success. The use of

volunteer groups (e.g., university classes or birding organizations) should be explored to conduct species surveys for monitoring purposes.

Recreational use will continue to be monitored using the hunter and trapper permit system. Other recreational use (e.g., fishing and bird watching) will be monitored through regular observations and interactions with the public.

Facility monitoring is accomplished through consistent observations and inspections by the Facility Manager.

Regulation of Non-Wildlife Related Recreational Activities

Currently, SRSGA staff issues Special Use Permits for locally approved activities that fall outside of the area's rules and regulations (e.g., volunteer group access to area for work days). Special Use Permits will continue to be required for approved activities.

SRSGA staff will continue to work with Law Enforcement Division Conservation Officers to enforce prohibited activities (e.g., horseback riding, ORV use, and snowmobiles) and deal with emerging public use issues that may conflict with management goals.

III. Management Activities

Federal Aid monies are being used to maintain SRSGA as well as in the purchase of some of the lands. Even on those lands not purchased with PR monies, when PR monies are used to maintain the land or make improvements, PR requirements must be met.

Land management

Management techniques listed below will follow the goals and objectives set forth in the Strategic Plan. Management guidelines for T/E species found on area will be followed as necessary.

Permanent Managed Marsh Impoundments

- Maintain dikes at 590' level. Dike maintenance includes mowing, filling eroded areas and animal burrows, brush control on dike sides, maintaining gravel tops where necessary, and maintaining or adding rip rap on dike sides where necessary. Spillways will also be maintained and rip rap added as necessary.
- Use prescribed burns to control vegetation (primarily cattail) in diked marshes.
- Continue flooding and drawdown regimes on diked marshes. Permanent diked marshes will continue to be drawn down periodically (e.g., every 5 years). In some cases, marshes will be drawn down after waterfowl season if a winter burn is planned. Typically marshes will be re-flooded for fall waterfowl migration and hunting opportunities.
- Maintain structures (pumps, slide gates, stop-log structures, culverts, ditches) as needed and work to eliminate those structures that are non-essential or require an inordinate commitment of resources.
- Continue control of invasive and non-native species, especially purple loosestrife and phragmites.

Seasonally Flooded Impoundments

- Continue planting crops (corn, sorghum, buckwheat, millet) for wildlife food plots. Total acreage of crops should not increase. Continue use of fertilizer and herbicide on these plots when necessary. Continue to limit fall plowing, increase filter strips, and prohibit additional tiling and insecticide use. Continue using sharecroppers.
- Continue flooding and drawdown regimes on moist soil impoundments to encourage moist soil plants. Continue to plant buckwheat and millet as necessary in moist soil areas to control undesirable weeds and grasses.
- Use prescribed burns to control woody vegetation encroachment into moist soil areas.

- Continue to use mowing as a tool to set back woody growth in moist soil impoundments.
- Continue use of herbicide treatments to control woody brush encroachment and invasive grasses and forbs into moist soil areas.
- Maintain structures (pumps, slide gates, culverts, staff gauges, dikes, spillways, ditches) and work to eliminate those structures that are non-essential or require an inordinate commitment of resources. Age of structures, ice, flooding, beavers, and vandalism are just some of the factors that can contribute to water control structure maintenance. Dike maintenance activities are identical to those listed under Permanent Managed Marsh Impoundments.
- Look for wetland restoration opportunities in farmed wetlands.
- Continue control of invasive and non-native species, especially purple loosestrife and phragmites.

Riverine Undiked Wetlands

- These areas are essentially unmanaged and will function as a natural riverine system.
- Examine opportunities to add other portions of floodplain area to this hydrologic regime.

Upland Agricultural Units

- Continue planting limited acres of crops (corn, sorghum, buckwheat, sunflower, millet) for wildlife food plots. Total acreage of food plots should not increase. Continue use of fertilizer and herbicide on these plots when necessary. Continue to limit fall plowing, increase filter strips, and prohibit tiling and insecticide use. Use prescribed burns as necessary to control woody vegetation in filter strips. Continue use of herbicide treatments to control woody brush encroachment and invasive grasses and forbs into filter strips.
- Continue use of sharecroppers.
- Continue to restore native grassland and wetland communities as opportunities arise.

Grasslands

- Use prescribed burns to control woody vegetation encroachment into grassland areas.
- Continue to use mowing as a tool to set back woody growth in grasslands.
- Continue use of herbicide treatments to control woody brush encroachment and invasive grasses and forbs into grasslands.
- Continue to identify opportunities for restoration of grassland communities.

Forests

- Continue existing timber sale program at a rate of 20-50 acres per year and continue to incorporate the following BMP's: no cutting within 200' of rivers and streams and limited cutting of dead snags, apple, American beech, oaks, shagbark hickory, and naturally occurring conifers. Continue use of select timber cuts to remove 40-50% of the canopy to maintain species composition and provide age class diversity.

Wild Fire Plan

Areas will be identified for the degree of fire suppression necessary in the event of a wild fire. FMFMD personnel will assist in identifying these areas. A map identifying these locations and access to them will be added as an addendum to this plan in the future.

Water management

General

- Management techniques listed below will follow the goals and objectives set forth in the Strategic Plan. Management guidelines for T/E species found on area will be followed as necessary.
- Continue to manipulate water levels in marsh and cropland impoundments as necessary. The purpose for maintaining water depths within the impoundments is to benefit resident and migratory waterfowl and other wetland species, to maintain healthy wetland communities, and to provide hunting opportunities during waterfowl seasons. Timing of water level manipulation is determined by waterfowl migrations, breeding periods, hunting seasons, farming schedules, desired plant communities, and predetermined drawdown schedules for marsh areas.
- Attempt to mimic natural water level cycles on marsh impoundments through scheduled drawdowns and reflooding (typically a 5-year schedule). Some diked marshes have relatively constant water levels which is beneficial because some wetland plant communities are maintained that may otherwise be lost due to high or low water events. However, a disadvantage to controlling water levels for desired plant communities instead of allowing them to fluctuate naturally is increased costs and time. If monitoring and management are neglected, sediment build-up, monocultures, and decreased ecosystem productivity can be other disadvantages.
- In refuge impoundments, drawdowns will be alternated to provide flooded conditions in at least 50% of the refuge acres throughout the year.
- In moist soil managed impoundments, drawdown and flooding timing is dependent on waterfowl and shorebird use, as well as time to allow desired plant species to flourish during their growing

season. The potential for spread of non-native invasive species like purple loosestrife must also be considered.

- Continue stream bank stabilization, improved soil stewardship techniques, and improved access sites to improve fisheries and fishing opportunities.
- Continue to identify opportunities for restoration of wetland communities and function.
- No water management will take place in undiked riverine marshes.
- Seasonal flooding of the river systems can alter all plans for water level manipulations in all impoundments.

Flooded Woods

Two 20' wide metal radial gates are closed each September to stop flow in the Shiawassee River and fill the flooded woods impoundment. The flooded woods acts as a reservoir to flood the other impoundments on the area through a complex system of gates, ditches, and pumps. Depending on Shiawassee River flows, the flooded woods can take from a few days to over a month to fill. The radial gates are open except from September through regular waterfowl season. Water levels must be very closely monitored and the radial gates must be frequently adjusted to maintain desired water levels. Beginning in late regular waterfowl season, the radial gates are slowly opened to drain the flooded woods and reduce erosive velocity. The flooded woods is managed during the growing season to maintain native tree species in the unit. Fish have passage up the Shiawassee River during the period the radial gates are open.

Diked Cropland and Moist Soil Impoundments

Three pumps are used to drain the cropland units each spring. One of these pumps is also used for moist soil managed impoundments. The pumps are also used to protect the crops from flooding during periods of heavy rainfall. Each fall these fields are flooded for the waterfowl hunting season. Several cropland units are flooded by gravity flow from the flooded woods. Slide gate water control structures control water flow from the flooded woods into these units. Other fields, including moist soil impoundments, are flooded by gravity when possible but mostly by pumping. Beginning in late waterfowl season or shortly thereafter, diked croplands and moist soil impoundments are slowly drained by gravity flow.

Diked Emergent Marsh

These impoundments are maintained to provide hemimarsh conditions throughout the year. Slide gate structures can be opened to release water for a drawdown or to raise water levels through gravity flow in some impoundments. However, increasing water depth during the growing season is primarily dependent upon rainfall amounts. When desired, there are pumps to increase water levels at the Wahl Road Marsh, the Federal Marsh, and the Wildlife Refuge marshes.

Permanently Flooded Woods

A stoplog control structure and pump in the northwest corner of the Rookery is used to maintain desired water levels.

Monitoring

SRSGA staff participate in several wildlife surveys in Saginaw County and some routes are located on the area. Pheasant, dove, quail, frog and toad, turkey, and hawk have all been surveyed regularly in the past. Annually, if staff resources allow, brood surveys are conducted on SRSGA to monitor waterfowl production. SRSGA staff also participate in weekly fall waterfowl counts on the area and the mid-winter waterfowl count. White-tailed deer are also surveyed annually in the winter to estimate population numbers in the Shiawassee Flats Deer Management Unit. All of these surveys and potentially others will be conducted as directed from the Wildlife Division.

Large amounts of information are collected at the SRSGA check station. For example, harvest and biological data are collected on waterfowl, deer, and furbearers. Hunter registration is important to monitor public use on the area. These check station activities will continue as directed.

Any observations of threatened, endangered, and special concern species or rare communities will be documented and reported to MNFI. SRSGA will continue to cooperate with MNFI on surveys conducted on the area.

Many wood duck boxes are located on SRSGA. Staff will continue to work with volunteers to regularly maintain boxes and track use and success, but the program will be generally de-emphasized based on forest area and age structure trends. The long-term goal is to have only a few houses for educational purposes and the education will include forest and associated cavity-nesting wildlife population trend information.

Facilities Management and Maintenance

Existing buildings require annual maintenance to promote a positive public image, and allow for a safe, comfortable working environment. The SRSGA, including all buildings and pump stations is required to follow all Michigan Occupational Health, and Safety Association guidelines for work safety including, but not limited to Material Safety Data Sheets, Hazard Communication Programs, and safety inspections. SRSGA must also follow the Americans with Disabilities Act Accessibility Guidelines for buildings and facilities. Compliance to the ADA and OSHA guidelines is the responsibility of the area manager.

Annual maintenance and repairs of farming and heavy equipment is necessary to accomplish management objectives on SRSGA.

The ditch and dike system, water control structures, and pumps need annual maintenance and/or repairs to allow desired water level manipulations.

Clean, well maintained parking areas are necessary to accommodate public use and to keep a positive public image. Trash will be removed, gravel added, and repairs to gates, posts, and guardrail done as needed.

Roads will be graded and graveled as needed. Likewise, bridges will be inspected and repaired as necessary.

Vehicle barriers and/or gates will be repaired and added as needed to prevent unwanted and illegal vehicle/ORV traffic into sensitive areas.

The need for buildings and other structures will be evaluated. Structures will be removed if determined appropriate (e.g., demolition of structures on a new acquisition).

Boundary and other informational signs will be replaced as needed.

Other activities

SRSGA will continue to manage easements, monitor and control trespass, and issue Special Use Permits as necessary. Sharecropping and timber cutting will also continue.

Adaptive Management Considerations

This plan will be reviewed periodically to determine if we are meeting our stated goals and if those goals are still relevant.

IV. Public Input

Public input was an important part of this planning process. Public input was gained through day to day contacts with local land owners, recreational users, and interest groups. The public open house held during the development of this plan was part of the overall public input process. Public input was balanced with other social, biological, and economic considerations.

Public Meetings

The previous SRSGA Master Plan expired in 2000 and activities began in early 2001 to write a new plan. A public meeting was held on May 12, 2001 to present management goals and objectives, propose new projects, and gather public comments. Ten individuals attended this meeting, which was held at the Hartley Outdoor Center in St. Charles. The meeting was advertised in the Outdoors sections of the Saginaw News, Bay City Times, and the Midland Daily News. In addition, local hunting and conservation groups were notified, as were interested individuals. Written comments were also accepted.

The most significant proposal made by the Wildlife Biologist was to convert two cropped impoundments to moist soil management or marsh. Public comment strongly opposed conversion in the South Prior field, but generally accepted the proposal to convert the Triangles Unit to moist soil management or restore to marsh. Appendix 14 gives a summary of written comments and those received at the public meeting.

After the May 2001 meeting, Master Planning efforts were placed on hold while Wildlife Division worked to provide guidelines for all Master Plans and Strategic Plans.

Master Planning efforts resumed under direction for Strategic Plans in 2003. A public open house was held Monday, August 25, 2003 at the Bay City Recreation Area's Visitors Center to gather more public input. Draft Strategic Plans, including proposed objectives, were available for comment. One individual attended that represented one hunting group.

30-day comment period

A 30-day comment period followed the public open house on August 25. Therefore, comments were accepted until September 24, 2003. The Draft Strategic Plan was made available to the public and also submitted to Lansing staff for review at this time. A total of two comments were received during the 30-day period. One comment was also received from FMFMD. Appendix 15 includes the summary and responses to comments from the open house and comment period.

Advertisement of Opportunities for Public Involvement

A DNR press release was sent out on August 19, 2003 to announce the public open house and comment period for several Strategic Plans in the Saginaw Bay Management Unit, including Shiawassee River State Game Area. On August 13, the Wildlife Biologist also made personal contacts with several stakeholder group leaders (e.g., Shiawassee Flats Advisory Council, Shiawassee Flats Citizens and Hunters Association, Tri-County Chapter of the Michigan Duck Hunters Association, and the Fish Point Wildlife Association). A draft of the plan was sent to the Shiawassee National Wildlife Refuge for review and comment on August 13.

V. Conclusion

In summary, the process used to develop this Strategic Plan included identifying legal obligations to manage for the stated purpose of SRSGA, providing an environmental inventory, identifying public uses on the area, conducting a facility/capital improvement inventory, developing management goals and objectives and management activities, and gathering public input to assist in development of the plan. Goals, objectives, and management strategies were reviewed to determine that they met DNR and Wildlife Division policy.

The SRSGA Strategic Plan provides long-term goals and objectives. Annual work planning efforts will continue to carry out these goals and objectives through specific management activities.

Updates will be made to this plan as necessary when new land is acquired, there is a change in policy or direction, and when management strategies are not as effective or efficient as planned (i.e., use adaptive management).

The DNR has adopted ecosystem management as a guiding philosophy for management of species and lands. Writing a Strategic Plan that incorporates this philosophy for an intensively managed waterfowl hunting area such as SRSGA is difficult because of the sometimes conflicting objectives of ecosystem management and the current managed waterfowl hunting policy. Indeed, finding the balance between what is the best management strategy for multiple species and their habitats and meeting the demands of hunting stakeholders is difficult. It is especially difficult for planners and managers to meet the myriad goals that users have for SRSGA because there are often conflicting goals among the various user groups. This plan attempts a reasonable balance among wildlife needs and human wants, while meeting the mandated goals of the area.

The author would like to extend gratitude to all individuals and groups that provided comments. Greg Soulliere and Tim Reis reviewed the Strategic Plan for Wildlife Division. Jim Baker provided comments for Fisheries Division and Ken Alto provided review for Forest, Mineral, and Fire Management Division. The Shiawassee National Wildlife Refuge graciously allowed use of their species lists.

VI. References/Literature Cited

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15. Summary and Response to Public Comments from Open House and Comment Period

Appendix 15. Summary and Response to Public Comments from Open House and Comment Period

Public Open House, August 25, 2003 at the Bay City State Recreation Area's Visitors Center

One individual attended representing the Shiawassee Flats Citizens and Hunters Association.

COMMENTS

The individual felt that the Strategic Plan was deliberately ambiguous and wanted stronger wording that the primary objective of the SRSGA was for waterfowl management. He also felt that maintaining SRSGA as a managed waterfowl area should be listed in the objectives. Outside of the diked areas, his group was agreeable to management for species other than waterfowl. While the individual understood that this is a Strategic Plan, he would still like to see cover maps and management specifics to reiterate the commitment for a managed waterfowl area.

RESPONSES

The author felt that the plan sufficiently emphasized the area's importance for waterfowl management and the Cooperative Agreement with the U. S. Fish and Wildlife Service clearly stated the primary objective for the Shiawassee Flats Wildlife Management Area was for migratory waterfowl and related hunting opportunities (see I. Introduction: History of the Area and Historical Land Use, II. Management Goals and Objectives: Wildlife Restoration and Management and Wildlife Related Recreational Activities, and Appendix 2). A Wildlife Related Recreational Activities objective was added that addressed maintaining SRSGA as a managed waterfowl area. Cover maps and detailed management practice schedules will be made available when completed. The Wildlife Biologist will continue to work closely with stakeholder groups to communicate management plans.

30-day Comment Period Following Public Open House

Two written responses were received within the 30-day period. One response was from an individual and the other the President of the Wolverine Sportsmen's Club.

COMMENTS

The individual's comments included criticism that the Strategic Plan does not address the riparian rights of property owners relating to the operation of the radial gates structure. Another comment was that the plan didn't address the log jam in the flooded woods that is causing siltation of the old channel and creation of new channels through the impoundment. The other primary concern voiced was that the fields that are flooded for waterfowl hunting in the fall should remain dry to meet flood control objectives.

RESPONSES

The author believes that operation of the radial gates does not impact riparian property owners' rights. There are alternatives currently being investigated to improve water flow into the river system when the radial gates are closed. This is especially important during

low water/low river flow periods. The log jam in the flooded woods that is referred to is creating new channels. The author views this as an evolving river system. Methods to remove the log jam were identified in the past, however high costs and poor equipment access were identified as barriers. Management of farmed impoundments (i.e., planting, flooding in fall, draining in winter) and flooded woods is consistent with the Saginaw Valley Flood Control Plan (see I. Introduction: Management Area History and Historical Land Use) and is acceptable under Michigan's floodplain laws and regulations. The system of dikes, ditches and pumps reduces the extent of the floodplain until water levels reach 589 feet above sea level (i.e., the highest level of all dikes) as designated in the Flood Control Plan. It is important to note that the author has discussed all of these issues in person with the individual.

COMMENTS

The President of the Wolverine Sportsmen's Club provided extensive written comments. The primary concerns expressed that the author thought relevant to the content and purpose of the Strategic Plan are listed here. The individual does not feel that there is equal solicitation for public input. One comment regarding the operation of the radial gates was similar to the one above and included concerns over flood management when the gates were closed. There was also concern that the practice of flooding the flooded woods in the fall was killing trees. There were concerns noted on the deer management in DMU 173. For example, the individual feels that the aerial surveys are inaccurate, as are the population estimates, that there is a liberal amount of antlerless permits, and that population goals are too low. A comment was made that there are inconsistencies on access to the area for the public (e.g., ORV access and other unauthorized access). Concern over the above-mentioned log jam in the flooded woods and the siltation it is causing was noted. The individual questioned maintenance of roads on the area. He would also like to see more public meetings. The author feels that the individual had disagreement with one of the primary objectives of the SRSGA being management for waterfowl and waterfowl hunting opportunities.

RESPONSES

Because the number of comments was extensive, a written response will be prepared and sent to the individual addressing all comments. While all comments were noted and considered, the author did not feel that many of the comments directly pertained to the SRSGA Strategic Plan and its long-term objectives, but more to the day-to-day management of the area. Responses to the comments noted above follow:

Regarding public input, please see IV. Public Input. Input for this Strategic Plan was solicited from the public as a whole through the Public Open House and 30-day comment period. Local stakeholder groups were contacted directly and provided a copy of the draft plan for their interested members to comment.

Regarding operation of the radial gates and concerns over flood management, please see the response above to the other individual that commented during the 30-day period.

Regarding management of the flooded woods and tree death, please see III. Management Activities: Water Management. The flooded woods is impounded with water between September and December, after each growing season. Cover types in the flooded woods will be monitored to determine if management activities are adversely affecting native floodplain forest species.

Regarding deer management in DMU 173, efforts have been made to improve the aerial survey and its accuracy (e.g., GPS transects and consistent survey crew). The winter survey is currently the best available population estimator. The antlerless quotas are determined with staff from the SNWR and input from the SFAC. While no specific population goals are identified in the strategic plan, antlerless quotas are set based on population goals previously agreed upon by the above parties. An ideal forum to discuss re-evaluation of those goals is through the SFAC Deer Committee.

Regarding ORV access and other unauthorized access, ORV use is prohibited on SRSGA. An objective listed under the Facilities Management and Maintenance Objectives is to "Control unauthorized vehicle traffic". Special Use Permits will continue to be issued for locally approved activities that fall outside of the area's rules and regulations (see II. Management Goals and Objectives: Regulation of Non-Wildlife Related Recreational Opportunities).

Regarding the log jam in the flooded woods, please see the response above to the other individual that commented during the 30-day period. Management activities identified on SRSGA that will assist in decreasing the amount of sedimentation in the river system include increasing width of filter strips, gradually dewatering fields and impoundments, leaving 200' of uncut forest along riverine corridors, and continuing restrictions on fall plowing (see Facilities Management and Maintenance Objectives).

Regarding road maintenance, one of the Facilities Management and Maintenance objectives is to "Provide access to the area through well maintained dikes, roads, and parking areas". Many of the roads that enter the area are County roads and are maintained by Saginaw County.

Regarding desire for more public meetings, the Shiawassee Flats Advisory Council and Shiawassee Flats Citizens and Hunters Association both hold an annual public meeting for comments regarding management at SRSGA and SNWR. In addition, these groups meet monthly throughout most of the year, with staff from SRSGA attending. This is an ideal forum to discuss day-to-day management of the area.

As stated in I. Introduction: History of the Area, the Cooperative Agreement between the U.S. Fish and Wildlife Service and the MDNR for the Shiawassee Flats Wildlife Management Area identified waterfowl management (including refuge and hunting opportunities) as the primary objective. Development of the Saginaw County Goose Management Unit and designation of the area as a Managed Waterfowl Area further illustrated the area's importance for waterfowl management and hunting.

COMMENTS

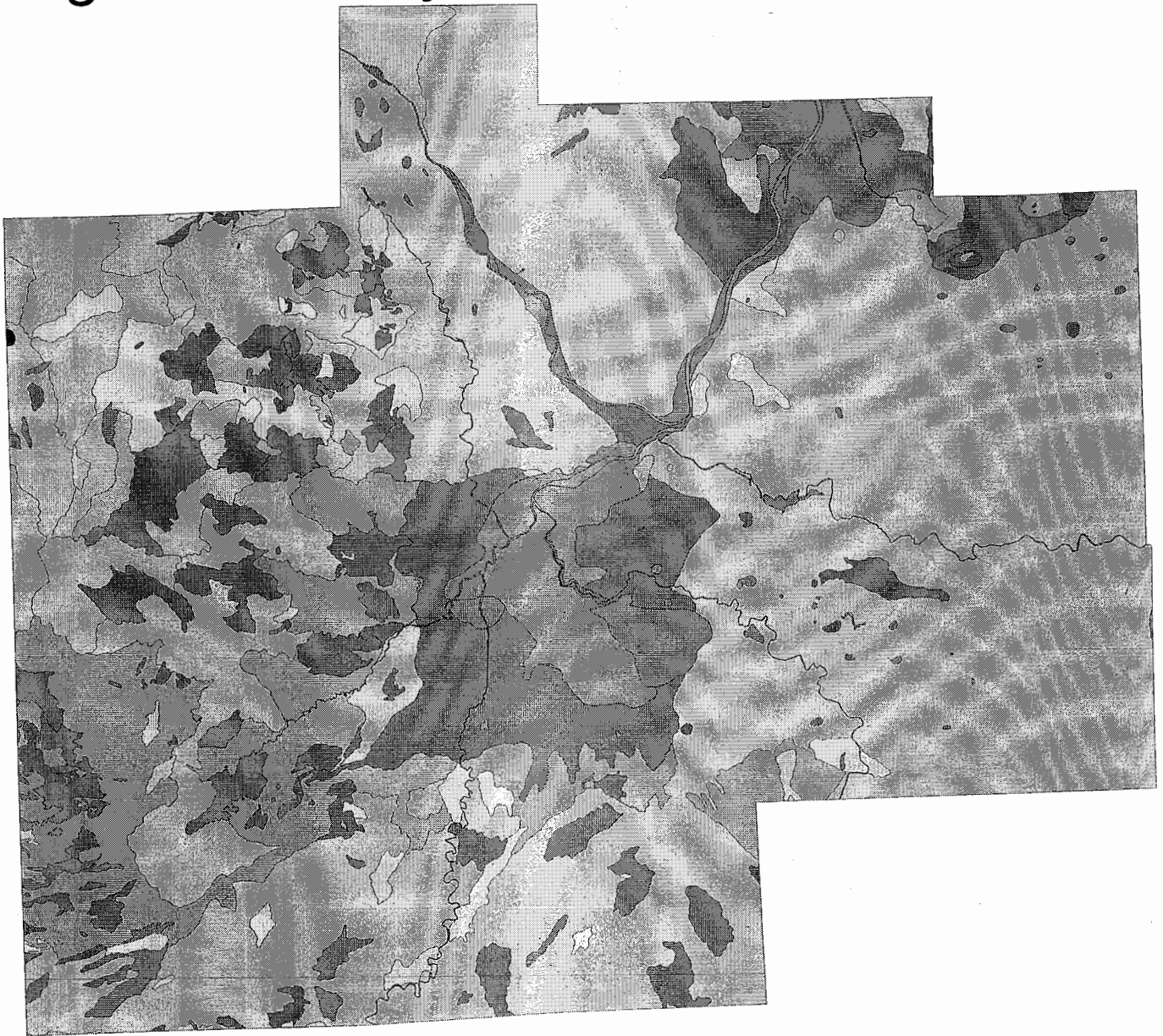
A verbal comment was also submitted by FMFMD personnel during the 30-day period. The request made was to include a paragraph under Land Management that discussed a Wild Fire Plan and what degree of fire suppression was needed. The importance of documentation of access areas was also noted.

RESPONSE

A subheading was added under Land Management titled Wild Fire Plan. It recognizes the need for such a plan and the identification of areas for fire suppression and access to those areas. With assistance from FMFMD personnel, such a plan will be written and included as an addendum to the SRSGA Strategic Plan in the future.

Figure 1.

Saginaw County Presettlement Land Cover



Land Cover

















-  ASPEN-BIRCH FOREST
-  BEECH-SUGAR MAPLE FOREST
-  BEECH-SUGAR MAPLE-HEMLOCK FOREST
-  BLACK ASH SWAMP
-  CEDAR SWAMP
-  HEMLOCK-WHITE PINE FOREST
-  LAKE/RIVER
-  MIXED CONIFER SWAMP
-  MIXED HARDWOOD SWAMP
-  MIXED OAK FOREST
-  OAK-HICKORY FOREST
-  RED PINE-WHITE PINE FOREST
-  SHRUB SWAMP/EMERGENT MARSH
-  WET PRAIRIE
-  WHITE PINE-MIXED HARDWOOD FOREST
-  WHITE PINE-WHITE OAK FOREST

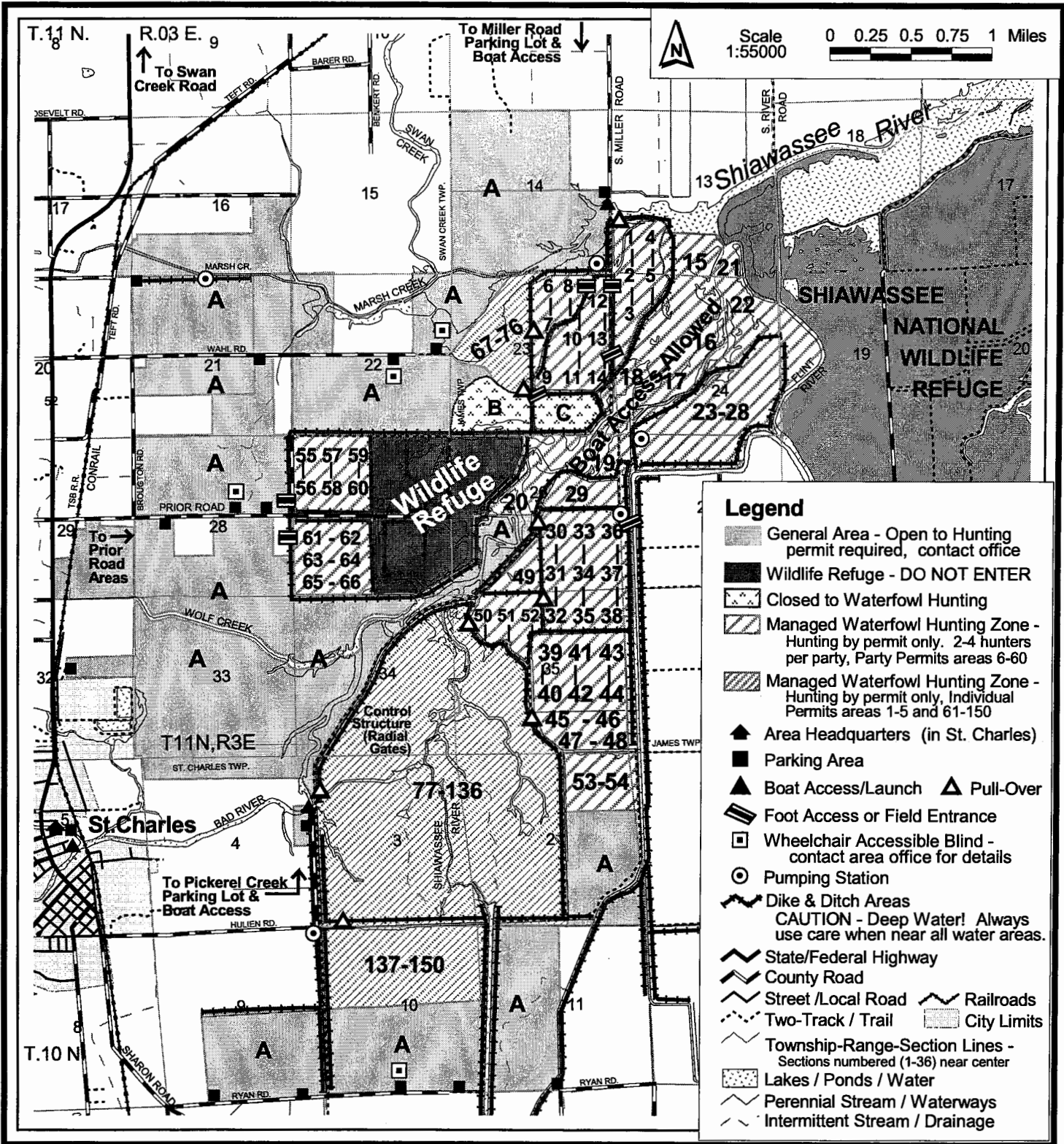
Figure 2. Shiawassee River State Game Area Map



MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

SHIAWASSEE RIVER STATE GAME AREA

SAGINAW COUNTY, MICHIGAN



Portions of this area designated Watchable Wildlife viewing areas.

For more information on this and other areas, contact DNR offices or visit on the internet at: <http://www.michigan.gov/dnr>

Hunter Monies Made This Area Possible



SHIAWASSEE RIVER STATE GAME AREA SPECIAL USE AND HUNTING RULES

(All other applicable State Land Use rules and regulations apply, unless modified by the text below. To review the standard "State Land Rules for State Lands Other than State Parks and Recreation Areas" (IC 2598, rev. 6/29/2000), see the back of most State Game/Wildlife Area maps (except those with Special Use and Hunting Rules); the maps, rules and regulations plus additional details, and more information on this and other areas are available at DNR Offices or on the internet at: <http://www.michigan.gov/dnr>)

REGARDING WATERFOWL HUNTING:

1. Reservations by mail are required to hunt during the first weekend of regular waterfowl season. Contact your local DNR office between August 1 to 28 for information. St. Charles Field Office is at: 225 East Spruce, St. Charles, Michigan 48655, and phone: (989) 865-6211.
2. On all other dates the check station is open from 4:30 a.m. to 5:00 p.m. to check game and issue hunting permits.
Drawings will be held each day at 5:00 a.m. and 11:00 a.m.
3. Parties of 2 to 4 hunters may choose all areas and individuals may choose areas 1-5, 61-66, or 67-150.
Parties of 2 or 3 may register one absentee member with that hunter's license.
4. Only hunters not participating in the drawing may join an individual or party after the drawing. Registered hunters that passed or forfeited their draw will be considered as having participated in the drawing, and may not join another party. Parties may add hunters after the draw up to the maximum of three. After the draw, parties are not allowed to split and take separate zones.
5. Waterfowl morning permits will be issued until 10:00 a.m. and afternoon permits will be issued until 4:00 p.m.
Small game and deer permits will be issued during check station hours.
6. On any day that you have participated in a morning drawing and are issued a hunting permit, you may not participate in the afternoon drawing, but may be issued an unused permit. If participated in the morning draw, you may not add on to a party that went through the afternoon drawing.
7. Parties must hunt at their chosen post or strip, and leave only to retrieve downed game. Permit holders must carry a valid permit on person during hunt (must show to DNR personnel if asked). Permit holders must return their permits to the designated location within two hours after their hunt. All game taken must be reported and/or presented for examination.
8. During the regular waterfowl season, each hunter is limited to 25 shells. During goose-only season, each hunter is limited to 15 shells. It is unlawful to possess or use shot shells loaded with any material other than steel or any other state and federally approved non-toxic shot; BBB is the largest shot size permitted.
9. Canada goose hunting is permitted during morning and afternoon hunts on weekends, but during weekdays is restricted to morning hours only during the regular waterfowl season.
10. A \$4.00 daily or \$13.00 seasonal managed waterfowl area permit is required to hunt waterfowl on the area.

REGARDING DEER HUNTING:

1. Deer hunting is by permit only. From Oct. 1 to the end of waterfowl season, archery and muzzle-loading deer hunting is permitted on the entire area except the state wildlife refuge. Firearm deer hunting is permitted in the "A" areas/zones and 53-54 only. The entire game area, except the state wildlife refuge, is open from the end of waterfowl season to the end of deer season. For permit information, contact the office between Aug. 15 and Sept. 5.
2. Can erect tree stands on the first day of hunt and can leave up until the end of hunt. Make sure stands are correctly labeled as required.
3. Scouting is allowed from January 2 through September 30.
4. A \$4.00 daily or \$13.00 seasonal permit is required to hunt deer on the area.
5. You must carry your permit with you during your hunt period. Permit must be returned within 48 hours after the last day of the hunt period.
6. Buckshot is prohibited. Baiting is prohibited.

REGARDING SMALL GAME HUNTING: Small game hunting is permitted only in "A" areas from September 15 until the end of the waterfowl season. All hunting is by permit only. Special permits will be issued for raccoon and coyote hunting during evening hours. The area is closed to small game hunting November 15-30 and during the muzzleloader season.

REGARDING TRAPPING: Trapping of furbearers is by permit only. Information may be obtained by contacting St. Charles Field Office.

THESE ACTIVITIES ARE PROHIBITED:

- a) Hunting or shooting from any dike, road or trail, safety zone, buffer zone, or retriever zone (such as near Refuge, with exception of woodchuck hunting - contact St. Charles Field Office for clarification).
- b) Constructing a shooting pit or permanent blind. Portable blinds are permitted, but must be removed at end of each hunt.
No screw-in steps. Make sure all stands or blinds are correctly labeled as required.
- c) Using an amphibious vehicle, all-terrain vehicle or any other motor driven vehicle while in the managed hunting area.
Outboard motors are permitted, but they must operate at safe, no-wake speeds.
- d) Trapping, except under written permit - for information contact the office. Camping during April 1 to Dec. 31.
- e) Taking cans or glass bottles into the game area and permit zones. Fires are also prohibited.
- f) Parking outside of designated parking areas. See map for parking lot locations, or contact the office for information.
- g) Entering the game area during the waterfowl season, except by permit.
- h) Hunting without possessing and carrying on your person, a valid special hunting permit issued by the St. Charles Field Office (except for turkey hunters). If you have questions about permits or about your need for one, call the office (info. provided above).
- i) The area is closed from 11:00 p.m. until 4:00 a.m.
- j) May not enter the State Wildlife Refuge from September 1 through January 1 without written authorization from the St. Charles Field Office.
- k) Other Rules and Regulations for the State Game Area may be posted in the area; look for additional signs or notices to insure you have a safe hunt. If you have any questions on your proposed activities, contact the St. Charles Field Office.

CAUTION: Use care near all open water areas; some of these areas may contain deep water, depending on season and recent rainfall.

BE A SAFE HUNTER - A safe hunter obeys laws governing hunting and boating, is alert to any conditions hazardous to personal safety of the hunter and others.

(Rev. 7/2003)

Equal Rights for Natural Resources Users

The Michigan Department of Natural Resources (MDNR) provides equal opportunities for employment and access to Michigan's natural resources. Both State and Federal laws prohibit discrimination on the basis of race, color, national origin, religion, disability, age, sex, height, weight or marital status under the Civil Rights Acts of 1964 as amended (MI PA 453 and MI PA 220, Title V of the Rehabilitation Act of 1973 as amended, and the Americans with Disabilities Act). If you believe that you have been discriminated against in any program, activity, or facility, or if you desire additional information, please write the MDNR, Human Resources, P.O. Box 30028, Lansing, MI 48909-7528, or the Michigan Department of Civil Rights, State of Michigan Plaza Building, 1200 6th Street, Detroit, MI 48226, or the Office for Diversity and Civil Rights, U.S. Fish and Wildlife Service, 4040 North Fairfax Drive, Arlington, VA 22203.

For information or assistance on this publication, or for information about other State land areas, contact: MDNR, Wildlife Division, P.O. Box 30444, Lansing, MI 48909-7944, -or- through the internet at "<http://www.michigan.gov/dnr>". TTY (teletype): Michigan Relay Center 1-800-649-3777. This publication is available in alternative formats upon request.

figure 3. North American Waterfowl Management Plan Focus Areas Based on Regional Landscape Ecosystems of Michigan (Figure taken from NAWMP Upper Mississippi River & Great Lakes Region Joint Venture Implementation Plan, 1998).

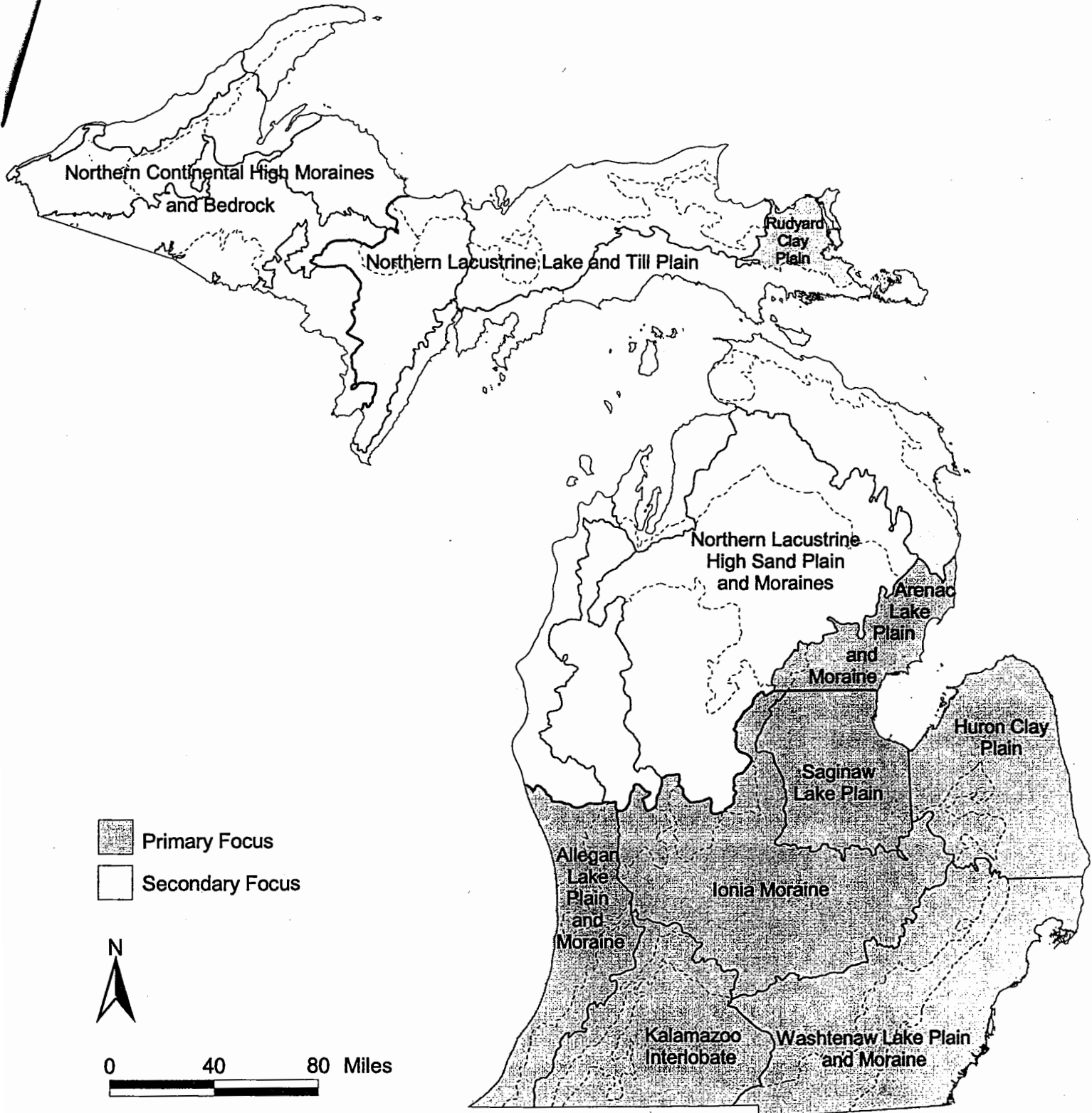


Figure 4. Saginaw County Element List

Michigan County Element Lists – March 2001
Michigan Natural Features Inventory

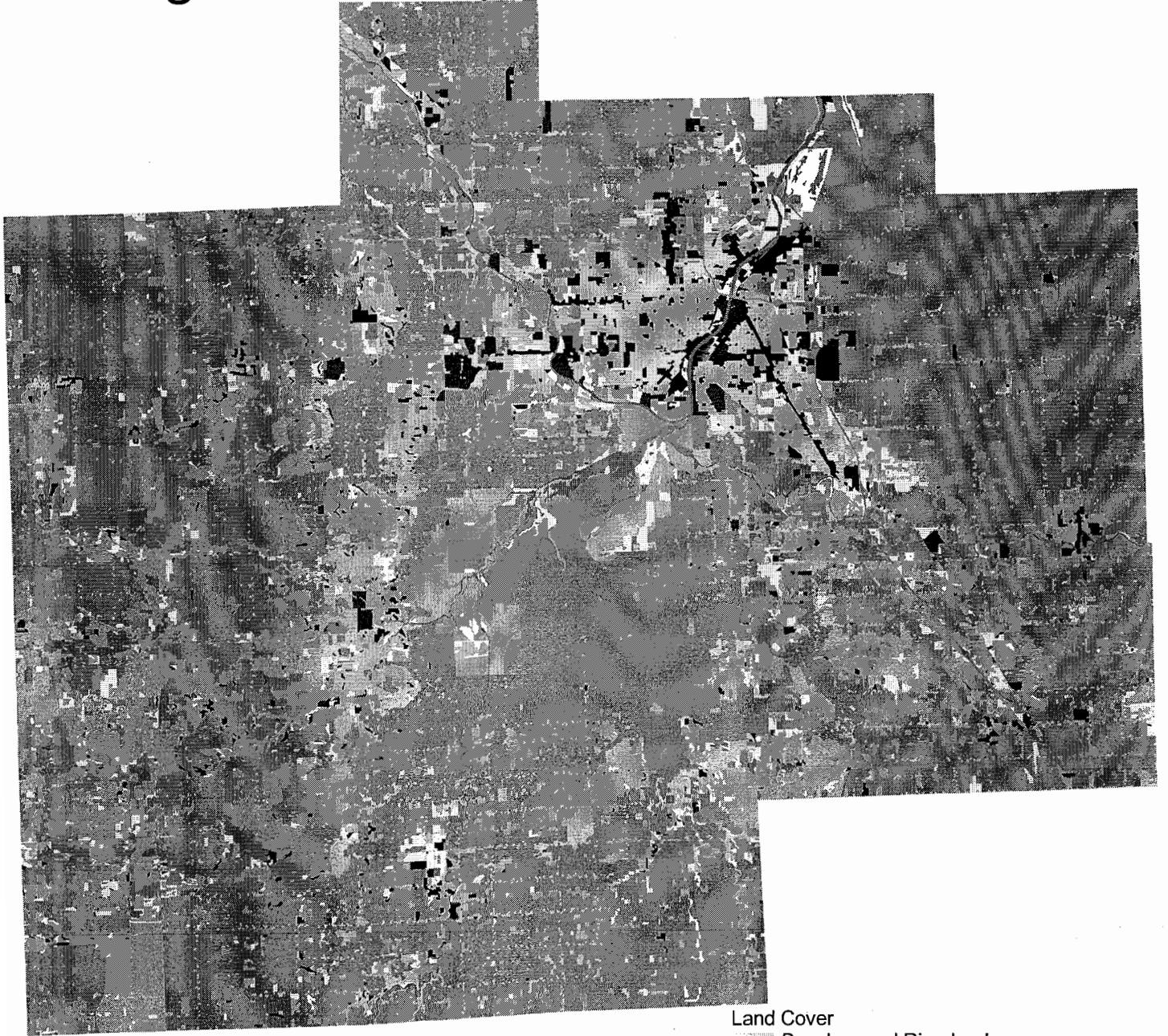
Saginaw County

Scientific Name	Common Name	Type	Federal Status	State Status
<i>Accipiter cooperii</i>	Cooper's hawk	Bird		SC
<i>Chlidonias niger</i>	Black tern	Bird		SC
<i>Clemmys guttata</i>	Spotted turtle	Reptile		T
<i>Clemmys insculpta</i>	Wood turtle	Reptile		SC
<i>Elaphe obsoleta obsoleta</i>	Black rat snake	Reptile		SC
<i>Elaphe vulpina gloydi</i>	Eastern fox snake	Reptile		T
<i>Emydoidea blandingii</i>	Blanding's turtle	Reptile		SC
<i>Epioblasma triquetra</i>	Snuffbox	Invertebrate		E
<i>Eragrostis pilosa</i>	Small love grass	Vascular Plant		SC
<i>Gallinula chloropus</i>	Common moorhen	Bird	(PS)	SC
Great blue heron rookery	Great blue heron rookery	Other Element		
<i>Haliaeetus leucocephalus</i>	Bald eagle	Bird	(PS:LT,PDL)	T
<i>Isotria verticillata</i>	Whorled pogonia	Vascular Plant		T
<i>Jeffersonia diphylla</i>	Twinleaf	Vascular Plant		SC
Mesic southern forest	Rich forest, central midwest type	Community		
<i>Notropis texanus</i>	Weed shiner	Fish		X
Pennsylvanian earth history	Geographical feature	Geologic Feature		
<i>Percina copelandi</i>	Channel darter	Fish		E
<i>Percina shumardi</i>	River darter	Fish		E
<i>Platanthera leucophaea</i>	Prairie fringed orchid	Vascular Plant	LT	E
<i>Pycnanthemum pilosum</i>	Hairy mountain-mint	Vascular Plant		T
<i>Rallus elegans</i>	King rail	Bird		E
<i>Sistrurus catenatus catenatus</i>	Eastern massasauga	Reptile	C	SC
<i>Spiranthes ochroleuca</i>	Yellow ladies'-tresses	Vascular Plant		SC

State Status: E = endangered, T = threatened, SC = special concern. **Federal Status:** LE = listed endangered, LT = listed threatened, LELT = partly listed endangered and partly listed threatened, PDL = proposed delist, E(S/A) = endangered based on similarities/appearance, PS = partial status (federally listed in only part of its range), C = species being considered for federal status.

Figure 5.

Saginaw County Land Use/Land Cover



- Land Cover
- Beaches and Riverbanks
 - Broadleaved Forest (Generally Deciduous)
 - Commercial, Services, and Institutional
 - Confined Feeding Operations
 - Coniferous Forest
 - Cropland, Rotation, and Permanent Pasture
 - Extractive
 - Forested (wooded) Wetlands
 - Herbaceous Rangeland
 - Industrial
 - Lakes
 - Non-Forested (non-wooded) Wetlands
 - Open and Other
 - Orchards, Vineyards, and Ornamental
 - Other Agricultural Land
 - Permanent Pasture
 - Pine or Oak Opening (Savanna)
 - Reservoirs
 - Residential
 - Sand Other than Beaches
 - Shrub Rangeland
 - Streams and Waterways
 - Transportation, Communication, and Utilities

Figure 6. Saginaw County Goose Management Unit

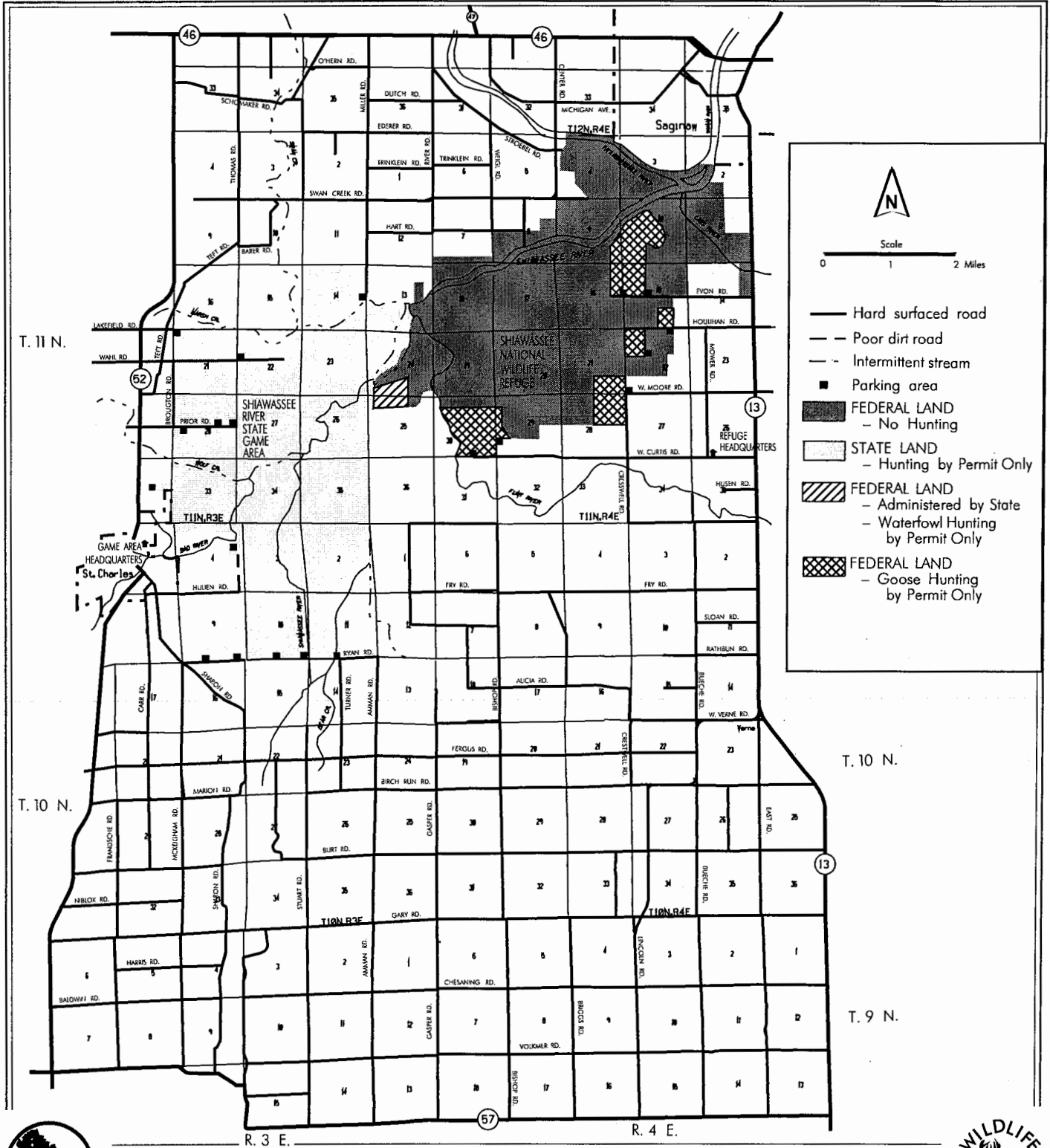
MICHIGAN
DEPARTMENT OF NATURAL RESOURCES



SAGINAW COUNTY GOOSE MANAGEMENT UNIT



SAGINAW COUNTY, MICHIGAN



Hunter Monies Made This Area Possible
DNR-Wildlife Map No. 0811 (Rev. 8/2001-MLS)





STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

SAGINAW COUNTY GOOSE MANAGEMENT UNIT SPECIAL USE AND HUNTING RULES

(All other applicable State Land Use rules and regulations apply, unless modified by the text below. To review the standard "State Land Rules for State Lands Other than State Parks and Recreation Areas" (IC 2598, rev. 6/29/2000), see the back of most State Game/Wildlife Area maps (except those with Special Use and Hunting Rules); the maps, rules and regulations plus additional details, and more information on this and other areas are available at DNR Offices or on the internet at: <http://www.michigan.gov/dnr>)

The Shiawassee River State Game Area and the Shiawassee National Wildlife Refuge are located southwest of Saginaw and form the core of the Saginaw County Goose Management Unit. State and federally owned lands are dedicated for waterfowl management to provide a major resting and feeding area for migrating ducks and geese.

The management unit includes that portion of Saginaw County enclosed by M-13 on the east, M-46 on the north, M-52 on the west, and M-57 on the south. See map on other side of these rules and regulations, for details on the geographic expanse of the management unit. Special hunting rules within the management zone include **all private lands as well as public lands.**

"Managed Hunting Units" on both state and federal lands have been in operation since 1967. Controlled hunter numbers, refuge area, and a harvest quota restrict gunning pressure on goose populations and assures quality hunting. Hunters must have a current Michigan small game license, migratory bird stamp(s)* and a seasonal or daily managed hunting permit. Hunters interested in hunting on public lands should contact the federal or state area office.

* **NOTE:** You will need a federal and state duck stamp to hunt waterfowl if you are 16 years of age or older.
You will also need a seasonal or daily managed waterfowl area permit. All waterfowl hunters must use steel shot.

SHIAWASSEE NATIONAL WILDLIFE REFUGE

Hunting is by permit only. Hunting during most of the open waterfowl season is by reservation. A special Youth Hunt which has been conducted on a weekend in early October in previous years, will not occur this season. Refuge headquarters is six miles south of the city of Saginaw, one-half mile west of M-13 at the intersection of Mower and Curtis roads. For information on the Shiawassee National Wildlife Refuge, contact the Refuge Manager, Shiawassee National Wildlife Refuge, 6975 Mower Road, Saginaw, Michigan 48601, at phone: 989-777-5930.

SHIAWASSEE RIVER STATE GAME AREA

Waterfowl hunting is by permit only in some units. Other units are posted as "Open Waterfowl Hunting Area." Hunts during the first weekend of the duck season (including one Youth Hunt) and the first weekend of the goose season are by reservation. The headquarters is located in St. Charles, just north of the Bad River Bridge, east of M-52 on Spruce Street.

For more information on either the Saginaw County Goose Management Unit or the Shiawassee River State Game Area, contact the Wildlife Biologist, Shiawassee River State Game Area, 225 East Spruce Street, St. Charles, Michigan 48655, at phone: 989-865-6211.

Reminder: You will need a federal and state duck stamp to hunt waterfowl if you are 16 years of age or older.
You will also need a seasonal or daily managed waterfowl area permit. All waterfowl hunters must use steel shot.

Other Rules and Regulations for the State Game Area may be posted in the area; look for additional signs or notices to insure you have a safe hunt. Be sure you have read and understand the standard State Land Rules.

If you have any questions or concerns on your proposed activities, contact the Shiawassee River State Game Area office (also known as the St. Charles DNR Office) before engaging in your activities (contact information is provided above).

CAUTION: Use care near all open water areas; some of these areas may contain deep water, depending on season and recent rainfall.

BE A SAFE HUNTER - A safe hunter obeys laws governing hunting and boating, is alert to any conditions hazardous to personal safety of the hunter and others.

(Rev. 9/2002)

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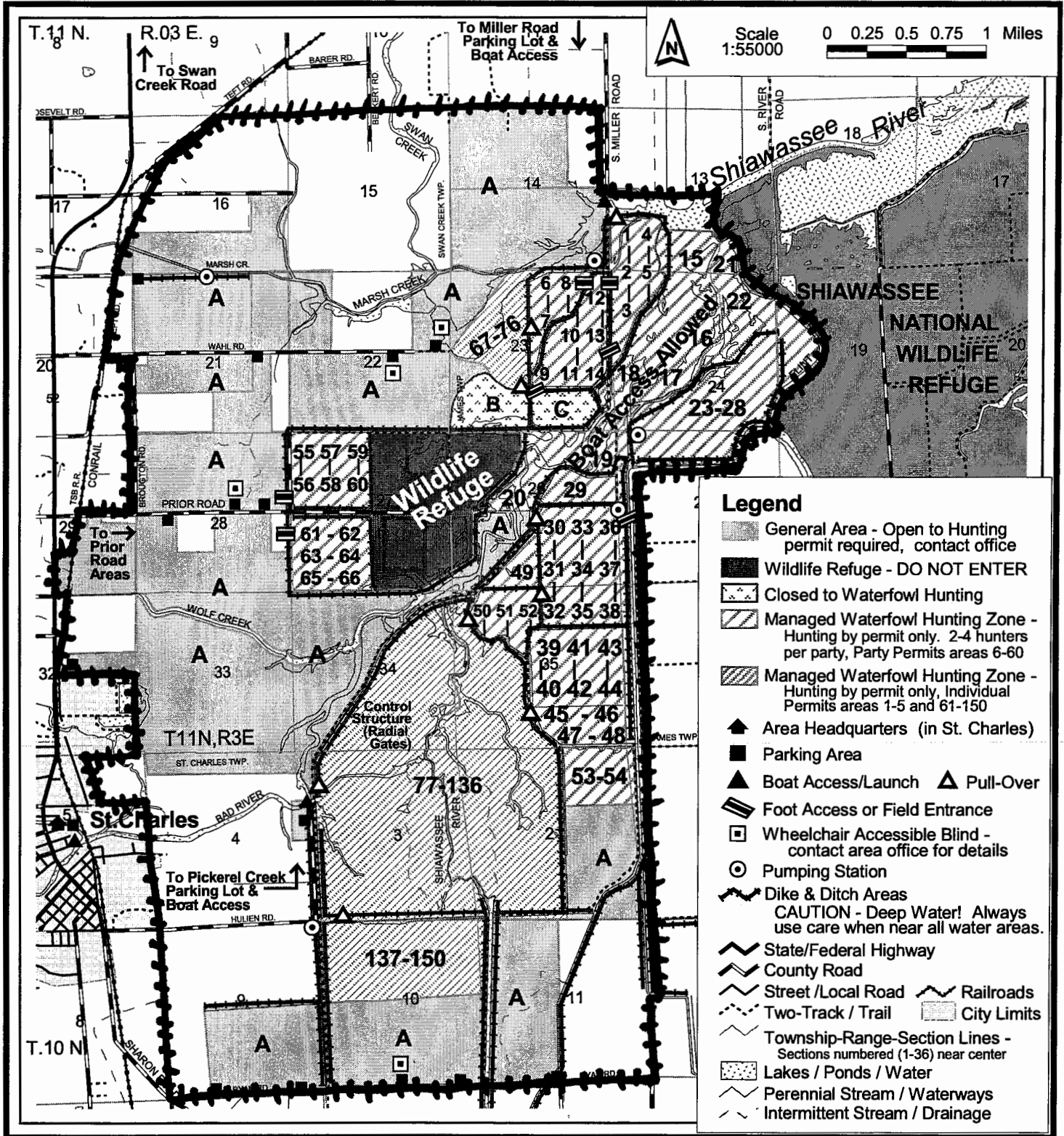
Figure 7. Shiawassee River State Game Area Proposed Boundary



MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

SHIAWASSEE RIVER STATE GAME AREA

SAGINAW COUNTY, MICHIGAN



Portions of this area designated Watchable Wildlife viewing areas.

For more information on this and other areas, contact DNR offices or visit on the internet at: <http://www.michigan.gov/dnr>

Hunter Monies Made This Area Possible



ATTACHMENT IV

Memorandum to the Commission

May 9, 1951

Shiawassee River Area

1,573.66 acres at \$22.88 per acre - \$36,000.00

W $\frac{1}{2}$ Sec. 2, entire Sec. 3; NE $\frac{1}{2}$, E $\frac{1}{2}$, NW $\frac{1}{4}$ N. $\frac{1}{4}$ Sec. 10; W $\frac{1}{2}$ Sec. 11; all in T10N, R3E

Vendors: Alger Sheldon, et al

This solid block of land is located in the near-center of Saginaw County in the Shiawassee River drainage basin. It has never been developed for agricultural purposes due to lack of control of flood waters and has remained in its natural condition with the exception of removal of merchantable timber. This tract is located in the immediate vicinity of the proposed Shiawassee Flats project of the Saginaw Valley Flood Control plan. One of the tentative plans calls for an 11,000 - acre wildlife area which will be used for water storage during flood periods. At other times shallow water will be maintained over most of the area for the benefit of waterfowl. It may be possible to use this tract as a part of the flooded area. It is an exceptionally good wildlife area in its present condition and its value will be greatly enhanced if it is used as a part of the water storage basin.

The Shiawassee River and its several tributaries flowing through the tract make it a suitable duck and goose area with opportunities for further development. Raccoon, muskrats, and squirrels inhabit the area and it provides protection for pheasants during hunting season and winter cover for them. Deer are common on the area and in the vicinity. The tract is unique in south-central Michigan on account of its size and natural features. It is nearly entirely wooded with oak, elm, maple, ash, and willow species but has sufficient marsh and stream bottom land to afford habitat for wildfowl. The proposed purchase is subject to the removal of the merchantable timber but it is not considered that this will decrease its value for wildlife. There are no buildings or other improvements. This is one of the largest tracts we know of without such improvements in the southern part of the state.

The option price for this land is considered to be unusually favorable and below that which would be needed for blocking in a comparable area made up of small parcels.

We are informed that the owners of the tract desire the property to be conveyed to the State for public use and are, therefore, offering it at the price shown. If this offer is not accepted, the owners intend to dispose of it to others. It lies one-half mile to the west of the Prairie Farm. The soil classification is placed at first - class river-bottom land and if it were not for the drainage problem would be rated as highly productive agricultural land. This fact gives rapid timber growth of desirable species. We understand that additional lands of this same character are available in this area at approximately the same price.
Appraisal: Land \$39,341.50, improvements 0, river and stream value \$3,000.00: total \$43,341.50.

The tract has been investigated for its suitability for wildlife restoration and public use and it is found to be unusually well adapted for that purpose. It is recommended that the area be designated and approved as the Shiawassee River State Game Area and that purchase of the above described lands be approved, with funds from the Game Protection Fund-game land acquisition.

F. P. STRUHSAKER
Lands Division
H. D. RUHL
Game Division

COOPERATIVE AGREEMENT
between
FISH AND WILDLIFE SERVICE
U. S. DEPARTMENT OF THE INTERIOR
and
DEPARTMENT OF CONSERVATION
STATE OF MICHIGAN
for
SHIAWASSEE FLATS WILDLIFE MANAGEMENT AREA

THIS AGREEMENT made this 19th day of July 1955, between the Fish and Wildlife Service of the U. S. Department of the Interior, hereinafter referred to as the Service, and the Department of Conservation for the State of Michigan, hereinafter referred to as the Department, covering the establishment, development, maintenance, and operation of a wildlife management area consisting of the Shiawassee National Wildlife Refuge and the Shiawassee River State Game Area to be known as the Shiawassee Flats Wildlife Management Area.

WHEREAS, the general Saginaw Bay area of Lake Huron in Michigan is one of the great continental concentration points for waterfowl, it is desirable to develop a large-scale resting and feeding area for this concentration, especially for wild geese; and

WHEREAS, waterfowl, especially geese, respond favorably to such aid, and since it is desirable to build up this resource for the benefit of other States in the flyway and Michigan in particular; and

WHEREAS, the Department and the Service have found a suitable area of sufficient size well within flight range of the Bay, which it appears can be purchased; and

WHEREAS, the size of the proposed purchase area has been planned to allow both adequate public shooting area and adequate sanctuary area for the east Michigan-Great Lakes continental waterfowl flight; and

WHEREAS, the two parts of the area can be utilized to complement each other in the conservation, development, and utilization of waterfowl and other wildlife resources frequenting these areas if the areas or portions hereof are acquired, developed, maintained, and operated under a unified program:

NOW, THEREFORE, the Service and the Department agree as follows:

1. As used in this Agreement, the term "wildlife management" shall mean the acquisition, development, maintenance, and administration of lands, habitat and other facilities for the conservation and utilization of all species of wildlife.

2. The Shiawassee Flats Wildlife Management Area will include most of the natural flood storage basin at the confluence of the Shiawassee, Tittabawassee, Flint, and Cass Rivers just upstream from the city of Saginaw, in Saginaw County, Michigan. The tentative boundaries of the project are as shown on the map marked "Exhibit A" attached which includes the following-described lands:

T 10 N, R 3 E - Sections 2, 3, and 4 entire; Section 5 NE $\frac{1}{4}$ of NE $\frac{1}{2}$; Sections 9 and 10 entire; Section 11 N $\frac{1}{2}$ of NE $\frac{1}{2}$, SW $\frac{1}{4}$ of NE $\frac{1}{2}$ west of Bear Creek, and W $\frac{1}{2}$; Section 14 NW $\frac{1}{2}$ of NW $\frac{1}{2}$; Section 15 N $\frac{3}{4}$ of N $\frac{1}{2}$; Section 16 N $\frac{3}{4}$ of E $\frac{1}{2}$ of NE $\frac{1}{4}$, NW $\frac{1}{4}$ of NE $\frac{1}{4}$, and N $\frac{1}{2}$ of NE $\frac{1}{4}$ of NW $\frac{1}{4}$.

T 11 N, R 3 E - Section 9 SE $\frac{1}{4}$ southeast of R.R.R.O.W.; Sections 13, 14, and 15 entire; Section 16 E $\frac{1}{2}$, NE $\frac{1}{4}$ of SW $\frac{1}{4}$, and S $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 17 SE $\frac{1}{4}$ of SE $\frac{1}{4}$ east of road; Section 20 NE $\frac{1}{4}$ of SE $\frac{1}{4}$ east of road; Sections 21, 22, 23, and 24 entire; Section 25 N $\frac{1}{2}$ and that part of W $\frac{1}{2}$ of SW $\frac{1}{4}$ west of Big Prairie Farm dike; Sections 26, 27, and 28 entire; Section 29 NE $\frac{1}{4}$ east of R.R. R.O.W. and SE $\frac{1}{4}$; Section 32 E $\frac{1}{2}$ east of R.R. R.O.W.; Sections 33, 34, and 35 entire; Section 36 W $\frac{1}{4}$ west of Big Prairie Farm dike.

T 11 N, R 4 E - Section 2 SW $\frac{1}{4}$ south of Tittabawassee River including island; Section 3 south of river including island; Section 4 E $\frac{3}{4}$ south of river, E $\frac{1}{2}$ of W $\frac{1}{2}$ of NW $\frac{1}{4}$, and E $\frac{1}{2}$ of NW $\frac{1}{4}$ of SW $\frac{1}{4}$; Section 7 E $\frac{1}{2}$ of SE $\frac{1}{4}$; Section 8 S $\frac{1}{2}$; Section 9 entire except NW $\frac{1}{4}$ of NE $\frac{1}{4}$; Section 10 entire; Section 11 W $\frac{1}{2}$ and SE $\frac{1}{4}$, Section 14 N $\frac{1}{2}$ of NE $\frac{1}{4}$; Sections 15, 16, 17, 18, 19, 20, and 21 entire; Section 22 N $\frac{1}{2}$ and N $\frac{1}{2}$ of SW $\frac{1}{4}$; Section 28 N $\frac{1}{2}$; Section 29 N $\frac{1}{2}$, NW $\frac{1}{4}$ of SE $\frac{1}{4}$, and N $\frac{1}{2}$ of SW $\frac{1}{4}$; Section 30 N $\frac{1}{2}$, and S $\frac{1}{2}$ east of Old Flint River Channel.

These boundaries are subject to modification upon mutual agreement after further acquisition experience, and the purchase of each tract is subject to approval of the Federal Migratory Bird Conservation Commission or the Michigan Conservation Commission.

3. The State of Michigan agrees to negotiate for and acquire all the land included within Units 1 and 2, and the Service agrees to negotiate for and acquire all the lands included in Unit 3 of the Shiawassee project as designated in the appraisal report dated December 19, 1952, covering the area. It is understood that the acquisition action is subject to available appropriations and approval by the respective commissions of the State and the Service.

The State and the Service further agree that when acquisition has been completed, they will enter into an exchange agreement, pursuant to existing legislation, whereby title to the lands in Unit 3 lying north of the Shiawassee River will become vested in the State of Michigan, and in exchange therefor the State will convey to the United States an equal value of State-acquired lands in Unit 2 immediately adjacent to the refuge lands in Unit 3. It is understood that title to the following-described property is to become vested in the United States:

T 11 N, R 3 E, Sec. 13: That part lying south of Swan Creek and west of Shiawassee River.

Sec. 14: S $\frac{1}{2}$.

Sec. 15: SE $\frac{1}{4}$.

Sec. 22: N $\frac{3}{4}$ of E $\frac{1}{2}$.

Sec. 23: N $\frac{3}{4}$.

Sec. 24: Lots 3 and 4; those parts of Lots 2, 5, and 9 west of bayou and that part of Lot 10 west of bayou and north of south 1/8TH line.

Together with lands immediately west thereof to the extent necessary to obtain lands equivalent to the value of lands in Unit 3 to be conveyed to the State based on land values assigned as a result of a joint appraisal.

4. Public shooting is recognized as a definite requirement of the conservation plan for this area. The Service agrees to permit public shooting on its lands up to a maximum of 25 percent of its holdings, as provided for in the amended Duck Stamp Act (63 Stat. 599; 16 U.S.C. 718d). It is planned that an area of suitable width about the periphery of the refuge unit or units separating the refuge and private land will be opened for hunting in accordance with the amended Duck Stamp Act and the laws of Michigan. The Department and the Service will develop an overall hunting plan for the entire project covering mutual responsibilities in the execution of the hunting plan. The hunting plan will be subject to annual review, with changes to be made whenever mutually agreed upon. Public shooting on the combined lands of the project will be under State laws and procedure and under the active direction of the Department, with the Service field personnel cooperating as mutually agreed.

It is further agreed that if the shooting strip referred to above is not adequate in some years to secure the required management kill of geese (now estimated to be about 15 percent but subject to change as conditions warrant) on the joint Shiawassee Flats project, the Service will open all or that portion of Service-owned lands in Sections 13 and 24, T 11 N, R 3 E, and Section 19, T 11 N, R 4 E, necessary to effect the desired annual bag of geese on the joint management area.

5. It is understood that the portion of Service lands made available for public shooting is essential to the proper operation of the refuge, and the use of the Federal area by the State shall be limited to management of public shooting thereon and development of facilities related thereto, approved by the Director of the Fish and Wildlife Service or his authorized representative. The facilities to be constructed on these lands shall be such as will not interfere with the proper farming of land suitable for agriculture. Any development or construction program on such Federal area must be submitted to and approved in advance and in writing by the Director of the Fish and Wildlife Service or his authorized representative.

The Department or Service may conduct research on lands of the other when mutually agreed. Under appropriate Federal or State regulations the public will be permitted to fish in the waters in accordance with Michigan laws when these activities do not interfere with the primary

objective of the project, which is waterfowl management. It is understood that if it should be necessary for the Department or the Service to construct buildings or other facilities on lands of the other, such improvements will be approved in advance and in writing by the director of the administering agency or his authorized representative.

The Department and the Service will jointly plan the engineering development of the project. Where water control structures and related works are required wholly for the internal use and operation of the Department's or the Service's half of the project, such costs shall be borne entirely by the party needing this structure. Where such structures and related works are necessary for the development of both the Department's and the Service's portion of the combined project, the costs of such construction will be shared equally unless otherwise mutually agreed. The Department and the Service will reciprocate in granting right-of-way easements or other permits or interests in their respective lands where development requirements by either party necessitate such action in order to comply with the laws of the State of Michigan and the United States of America as the proper development of the project requires.

6. The Department and the Service will develop a water management plan for the entire area within the project boundaries. This plan will include such things as portion of the area to be permanently flooded, water levels to be maintained in the pools, drainage, etc. This plan will be subject to periodic review and change when mutually agreed.

7. The Department and the Service agree that a suitable portion of the project area is to be used for productive agriculture whenever feasible in connection with the management of the area. The Department and the Service will develop an economic use plan for the project which will provide for long-range farm plans to insure proper land use and sound conservation practices. Annually, and prior to the beginning of each calendar year, the Department and the Service will review the farm program for the combined project, determining the types and location of crops to be planted on the project. The farm program for that portion of the Service lands to be opened to public shooting will be such as to permit effective utilization of the area for public shooting purposes, as well as preserve the agricultural productivity of these lands. Each contracting agency will be responsible for the execution of that part of the farming program to be carried on on lands under its administration.

8. It is understood that acquisition, development, and maintenance by the State of its half of the wildlife management area may be accomplished under the provisions of the Federal Aid to Wildlife Restoration Act of September 2, 1937.

9. The Department and the Service recognize the problem of flooding in the area of the proposed Shiawassee Flats Wildlife Management Area and will cooperate with the Saginaw Valley Flood Control Program.

10. Neither the Department nor the Service will make any unilateral agreements or contracts with the Corps of Engineers, the agency administering the flood control program, or other agencies or individuals concerning the acquisition, development, maintenance, and operation of the Shiawassee Flats Wildlife Management project.

11. This agreement on the part of both parties is contingent upon the availability of funds for carrying out their participation in the program.

12. No member of, or delegate to, Congress, or resident commissioner, shall be admitted to any share or part of this Agreement or to any benefit to arise therefrom separate and apart from any benefit accruing to the general public.

IN WITNESS WHEREOF, the parties have executed this Cooperative Agreement on the day, month, and year opposite their signatures thereof.

THE STATE OF MICHIGAN

July 19, 1955

By (Signed) Gerald E. Eddy

THE UNITED STATES

June 27, 1955

By (Signed) John L. Farley

Flora of Shiawassee National Wildlife Refuge

Documented list revised May 2001

Aceraceae: Maple Family

- Acer negunda* L. – Box Elder
- Acer rubrum* L. – Red Maple
- Acer saccharinum* L. – Silver Maple

Alismataceae: Water-plantain Family

- Alisma plantago-aquatica* L. – Water-plantain

Amaranthaceae: Amaranth Family

- Amaranthus tuberculatus* (Moq.) Sauer – Amaranth sp.

Anacardiaceae: Cashew Family

- Rhus typhina* L. – Staghorn Sumac
- Toxicodendron radicans* (L.) Kuntze – Poison Ivy

Apocynaceae: Dogbane Family

- Apocynum androsaemifolium* L. – Spreading Dogbane
- Apocynum cannabinum* L. – Indian Hemp

Araceae: Arum Family

- Arisaema dracontium* (L.) Schott – Green Dragon
- Arisaema triphyllum* L. – Jack-In-the-Pulpit
- Peltandra virginica* L. – Arrow-arum

Aristolochiaceae: Birthwort Family

- Asarum canadense* L. – Wild Ginger

Asclepiadaceae: Milkweed Family

- Asclepias incarnata* L. – Swamp Milkweed
- Asclepias syriaca* L. – Common Milkweed

Balsaminaceae: Touch-me-not Family

- Impatiens capensis* Meerb. – Spotted Jewelweed

Berberidaceae: Barberry Family

- Berberis thunbergii* DC. – Japanese Barberry
- Podophyllum peltatum* L. May – Apple

Betulaceae: Birch Family

- Betula papyrifera* Marsh – Paper, River or Canoe Birch
- Carpinus caroliniana* Walter Hornbeam; Blue beech, Musclemwood

Campanulaceae: Bellflower Family

- Campanula americana* L. – Tall Bellflower
- Lobelia cardinalis* L. – Cardinal flower
- Lobelia siphilitica* L. – Great Blue Lobelia

Caprifoliaceae: Honeysuckle Family

- Lonicera tatarica* L. – Tartarian Honeysuckle
- Sambucus canadensis* L. – Common Elderberry
- Viburnum lentago* L. – Nannyberry
- Viburnum opulus* L. – Guelder-rose, High-bush Cranberry

Caryophyllaceae: Pink Family

- Dianthus armeria* L. – Deptford Pink
- Silene vulgaris* Moench Garcke – Bladder-Campion

Celastraceae: Bittersweet Family

- Euonymus atropurpurea* Jacq. – Eastern Wahoo, Burning Bush

Chenopodiaceae: Goosefoot Family

Chenopodium album L. – Lamb’s-Quarters, “Pigweed”

Compositae (Asteraceae): Aster or Daisy Family

Achillea millefolium L. – Common Yarrow

Anthemis cotula L. – Mayweed: Dog fennel; Stinking Chamomile

Ambrosia artemisiifolia L. – Common Ragweed

Arctium minus Bernh. – Common Burdock

Aster ericoides L. – White Prairie Aster

Aster macrophyllus L. – Large-leaved Aster

Aster novae-angliae L. – New England Aster

Bidens cernua L. – Bur Marigold

Bidens comosus (Gray)Wiegand – Beggartick sp.

Bidens vulgatus f. *puberula* (Wiegand) – Beggartick sp.

Chrysanthemum leucanthemum L. – Ox-Eye Daisy

Cirsium arvense L. – Canada Thistle

Cichorium intybus L. – Chicory, Blue-sailors

Cirsium vulgare (Savi)Tenore – Bull Thistle

Conyza canadensis (L.) Cronquist – Horseweed

Erigeron strigosus Willd. – Fleabane

Eupatorium maculatum L. – Joe-Pye Weed

Eupatorium rugosum Houtt. – White Snakeroot

Gnaphalium uliginosum L. – Low Cudweed

Helenium autumnale L. – Sneezeweed

Hieracium aurantiacum L. – Orange Hawkweed

Hieracium kleracium piloselloides Vill.– Smoothish Hawkweed;

King Devil; Yellow Hawkweed

Lactuca scariola L. – Prickly Lettuce

Matricaria discoidea DC. – Pineapple-weed

Rudbeckia hirta L. – Black-eyed Susan

Solidago canadensis L. – Canada Goldenrod

Euthamia graminifolia (L.) Nutt – Flat-topped, Bushy or Grass-leaved Goldenrod

Sonchus oleraceus L. – Common Sow-Thistle

Taraxacum officinale Wiggers – Common Dandelion

Tragopogon pratensis L. – Goats-Beard

Vernonia gigantea (Walter) – Ironweed

Xanthium strumarium – Cocklebur

Convolvulaceae: Morning-glory Family

Convolvulus arvensis L. – Field-Bindweed

Calystegia sepium L. – Hedge Bindweed

Cornaceae: Dogwood Family

Cornus alternifolia – Alternate-leaved Dogwood; Pagoda Dogwood

Cornus foemina ssp. *racemosa* Lam. – Gray Dogwood

Cornus stolonifera Michx. – Red-osier Dogwood

Corylaceae

Carpinus caroliniana Walt. – Ironwood

Cruciferae: Mustard Family

Alliaria petiolata (Bieb.)Cavara&Grande – Garlic Mustard

Barbarea vulgaris R.Br. – Common Wintercress; Yellow Rocket

Capsella bursa-pastoris L. – Shepherd’s-purse

Cardamine bulbosa (Muhl.)BSP – Spring Cress

Cardamine douglassii Britton – Pink Spring Cress

- Erucastrum gallicum* Willd. – Dog Mustard
Erysimum cheiranthoides L. – Wormseed Mustard
Rorippa palustris L. – Mustard sp.; Yellow Cress
- Cucurbitaceae: Gourd Family**
Echinocystis lobata (Michx.)T.&G. – Wild Cucumber
- Cuscutaceae: Dodder Family**
Cuscuta gronovii Schultes – Common or Swamp Dodder
- Cyperaceae: Sedge Family**
Carex annectens Bickn. – Sedge sp.
Carex brunnescens (Pers.)Poiret – Sedge sp.
Carex intumescens Rudge – Sedge sp.
Carex granularis Willd. – Meadow Sedge
Carex muskingumensis Schw. – Sedge sp.
Carex lupulina Willd. – Hop Sedge
Carex tenera Dewey. – Sedge sp.
Cyperus diandrus Torrey – Low Flatsedge
Cyperous erythrorhizos Muhl. – Red-Rooted Flatsedge
Cyperus esculentus L. – Yellow Nutsedge
Cyperus strigosus L. – Straw-colored Nutsedge
Scirpus americanus Pers. – Threesquare
Scirpus atrovirens Willd. – Bulrush sp.
Scirpus fluviatilis Torr. – River Bulrush
Scirpus validus Vahl – Softstem Bulrush
- Dioscoreaceae: Yam Family**
Dioscorea villosa L. – Wild Yam
- Dipsacaceae: Teasel Family**
Dipsacus fullonum L. – Wild Teasel
- Equisetaceae: Horsetail Family**
Equisetum arvense L. – Field Horsetail
Equisetum hiemale L. – Common Scouring Rush
- Euphorbiaceae: Spurge Family**
Euphorbia nutans Lag. – Spurge Sp.
- Fagaceae: Beech Family**
Fagus grandifolia Ehrh. – Beech
Quercus alba L. – White Oak
Quercus macrocarpa Michx. – Bur Oak
Quercus rubra L. – Red Oak
- Geraniaceae: Geranium Family**
Geranium maculatum L. – Wild Geranium
- Gentianaceae: Gentian Family**
Gentiana andrewsii Griseb. – Closed or Bottle Gentian
- Gramineae: Grass Family**
Agrostis gigantea Roth. – Redtop
Bromus japonicus Murray – Japanese Brome
Echinochloa muricata (Beauv.)Fern. – Wild Millet
Elymus virginicus L. – Virginia Rye
Eragrostis hypnoides (Lam.)BSP. – Love Grass
Hordeum jubatum L. – Squirrel-tail Grass
Leersia Oryzoides (L.)Sw. – Rice Cutgrass
Leersia virginica Willd. – White Grass
Muhlenbergia frondosa f.*commutata* (Scribner)Fern. – Muhly Grass
Panicum clandestinum L. – Deer Tongue Grass or Corn Grass

- Panicum dichotomiflorum* Michaux – Spreading Witch-grass
Panicum virgatum L. – Switchgrass
Phalaris arundinacea L. – Reed Canary Grass
Phragmites australis (Cav.) Steudel – Common Reed
Setaria faberi Herrm. – Giant Foxtail
Setaria glauca (L.) Beauv. – Yellow Foxtail
Spartina pectinata Link – Freshwater (prairie) Cordgrass
- Hydrocharitaceae: Frog's-bit Family**
Elodea nuttallii (Planchon) St. John – Waterweed; Elodea
- Iridaceae: Iris Family**
Iris pseudacorus L. – Yellow Flag
Iris virginica L. – Southern Blue Flag
- Juncaceae: Rush Family**
Juncus dudleyi Wieg – Dudley's Rush
- Juglandaceae: Walnut Family**
Carya cordiformis (Wang) K. Koch – Bitternut Hickory
Carya laciniosa Michx. G. Don – Shellbark Hickory
Carya ovata (Miller) K. Koch – Shagbark Hickory
Juglans nigra L. – Black Walnut
- Labiatae: Mint Family**
Glechoma hederacea – Ground Ivy; Gilt-over-the-ground; Creeping Charlie
Leonurus cardiaca L. – Motherwort
Lycopus americanus Muhl. – Water-Horehound
Lycopus virginicus L. – Bugleweed
Mentha arvensis L. – Wild Mint
Monarda fistulosa L. – Wild Bergamont
Nepeta cataria L. – Catnip; Catmint
Physostegia virginiana (L.) Benth. – False Dragonhead; Obedient Plant
Prunella vulgaris L. – Self-heal; Heal-all
Scutellaria galericulata – Marsh Skullcap
Scutellaria lateriflora L. – Mad-dog Skullcap
Stachys hispida Pursh. – Hedge Nettle sp.
Stachys tenuifolia Willd. – Hedge Nettle sp.
Teucrium canadense L. – Wood-Sage, Germander
- Lauraceae: Laurel Family**
Lindera benzoin (L.) Blume – Spicebush
- Leguminosae: Pea Family**
Apios americana Medicus – Groundnut; Wild-bean; Indian-potato
Coronilla varia L. – Crown Vetch
Lathyrus sylvestris L. – Perennial or Everlasting Pea
Lotus corniculata L. – Birdfoot Trefoil
Medicago lupulina L. – Black Medick
Melilotus alba Medicus – White Sweet-Clover
Melilotus officinalis L. – Yellow Sweet-Clover
Trifolium pratense L. – Red Clover
- Lemnaceae: Duckweed Family**
Lemna minor L. – Lesser Duckweed
Lemna trisulca L. – Star Duckweed
Spirodela polyrhiza (L.) Schleiden – Greater Duckweed

Liliaceae: Lily Family

- Asparagus officinalis* L. – Garden Asparagus
Erythronium americana Ker – Trout-Lily, Adder's-Tongue; Dog
tooth-violet
Lilium michiganense Farw. – Michigan Lily
Smilacina stellata (L.)Desf. – Starry False Solomon-Seal
Trillium grandiflorum (Michuax) Salisb – Common Trillium

Lythraceae: Loosestrife Family

- Ammannia robusta* Heer&Regel – Ammannia
Lythrum alatum Pursh – Winged Lythrum; Wing-angled Loosestrife
Lythrum salicaria L. – Purple Loosestrife

Malvaceae: Mallow Family

- Abutilon theophrasti* Medicus – Velvet Leaf
Hibiscus trionum L. – Flower-of-an-hour

Menispermaceae: Moonseed Family

- Menispermum canadense* L. – Moonseed

Moraceae: Mulberry Family

- Morus alba* L. – Russian Mulberry or White Mulberry
Morus rubra L. – Red Mulberry

Nymphaeaceae: Water-lily Family

- Nuphar variegata* Durand – Spatterdock; Yellow Pondlily
Nymphaea odorata Arlon – Sweet-scented White Water Lily; Water
Nymph

Oleaceae: Olive Family

- Fraxinus pennsylvanica* var. *subintegerrima* (Vahl)Fern. – Green
Ash or Red Ash
Fraxinus americana L. – White Ash

Onagraceae: Evening Primrose Family

- Oenothera biennis* L. – Common Evening Primrose

Osmundaceae: Royal Fern Family

- Osmunda regalis* L. – Royal Fern

Oxalidaceae: Oxalis or Wood-sorrel Family

- Oxalis fontana* Bunge – Wood-Sorrel

Penthoraceae: Ditch Stonecrop Family

- Penthorum sedoides* L. – Ditch Stonecrop

Plantaginaceae: Plantain Family

- Plantago major* L. – Common Plantain
Plantago rugelii Decne. – Broadleaf Plantain; Rugel's Plantain

Polemoniaceae: Phlox Family

- Phlox divaricata* L. – Wild Blue Phlox

Polygonaceae: Smartweed Family

- Polygonum amphibium* L. var. *emersum* Michaux – Marsh or Water
Smart weed
Polygonum hydropiperoides Michaux – Mild Water-Pepper
Polygonum lapathifolium L. – Nodding Smartweed; Willowweed
Polygonum pennsylvanicum L. – Pinkweed; Bigseed Smartweed
Polygonum scandens L. – False Buck-wheat; Black-bindweed
Polygonum virginianum L. – Jumpseed
Rumex altissimus Wood – Dock sp.
Rumex crispus L. – Curly Dock or Sour Dock

Polypodiaceae: Fern Family

Dryopteris spinulosa (O.F.Mull.)Watt – Spinulose Woodfern, or
Shield Fern

Matteuccia struthiopteris (L.) Todaro – Ostrich Fern

Onoclea sensibilis L. – Sensitive Fern

Thelypteris palustris Schott – Marsh Fern

Pontederiaceae: Pickerel-weed Family

Heteranthera dubia (Jacq.)MacM. f. *terrestris* (Farw.)Vict. – Water
Star-Grass

Pontederia cordata L. – Pickerelweed

Portulacaceae: Purslane Family

Claytonia virginica L. – Spring Beauty

Portulaca oleracea L. – Common Purslane; Pusley

Potamogetonaceae: Pondweed Family

Potamogeton crispus L. – Curly Muck-weed; Pondweed

Potamogeton nodosus Poiret – Longleaf Pondweed

Potamogeton pectinatus L. – Sago Pondweed

Primulaceae: Primrose Family

Lysimachia ciliata L. – Fringed Loosestife

Lysimachia nummularia L. – Moneywort

Ranunculaceae: Buttercup / Crowfoot Family

Anemone canadensis L. – Canada Anemone

Ranunculus acris L. – Tall or Common Buttercup

Ranunculus flabellaris Raf. – Yellow Water Buttercup; Yellow
Water Crowfoot

Ranunculus sceleratus L. – Cursed Crowfoot

Thalictrum dasycarpum Fisch. & Ave-Lall. – Purple Meadow-Rue

Thalictrum dioicum L. – Early Meadow-Rue

Rosaceae: Rose Family

Crataegus sp. – Hawthornes

Guem canadense Jacq. – Avens sp.

Guem laciniatum Murray – Avens

Prunus virginiana L. – Choke Cherry

Rosa blanda Aiton – Wild Rose

Rubus occidentalis L. – Black Raspberry

Spiraea alba Duroi – Meadowsweet

Rubiaceae: Madder Family

Cephalanthus occidentalis L. – Buttonbush

Galium aparine L. – Cleavers ; Goosegrass

Galium obtusum Bigelow – Bluntleaf Bedstraw

Rutaceae: Rue Family

Zanthoxylum americanum Miller – Prickly-Ash

Salicaceae: Willow Family

Populus deltoides Marsh – Cottonwood

Populus tremuloides Michaux – Quaking Aspen

Salix discolor Muhl – Pussy Willow

Salix exigua Nutt. – Sandbar Willow

Salix nigra Marsh –Black Willow

Salix petiolaris J.E.Smith – Slender or Meadow Willow

Scrophulariaceae: Snapdragon Family

Lindernia dubia var. *anagallidea* (Michaux) Cooperr. – False
Pimpernel

- Mimulus ringens* L. – Square-stemmed Monkey-flower
Penstemon digitalis Sims – Foxglove Beard-tongue
Verbascum blattaria L. – Moth Mullein
Verbascum thapsus L. – Common Mullein; Flannel Plant
Veronica anagallis-aquatica – Water Speedwell
- Simaroubaceae: Quassia Family**
Ailanthus altissima (Miller) Swingle – Tree-of-Heaven
- Solanaceae: Nightshade Family**
Solanum dulcamara L. – Bittersweet; Nightshade
- Sparganiaceae: Bur-reed Family**
Sparganium eurycarpum Engelm. – Giant Bur-reed
- Staphyleaceae: Bladdernut Family**
Staphylea trifolia L. – American Bladdernut
- Tiliaceae: Linden Family**
Tilia americana L. – Basswood, Linden
- Typhaceae**
Typha angustifolia L. – Narrow-leaved Cattail
Typha latifolia L. – Broad-leaved or Common Cattail
- Ulmaceae: Elm Family**
Celtis occidentalis L. – American Hackberry
Ulmus americana L. – American or White Elm
- Umbelliferae: Carrot or Parsley Family**
Daucus carota L. – Queen Anne's Lace; Wild Carrot
Pastinaca sativa L. – Wild Parsnip
Sanicula gregaria Bickn. – Black Snakeroot
Sium suave Walter – Water Parsnip
Torilis japonica (Houtt.)DC – Hedge Parsley
- Urticaceae: Nettle Family**
Boehmeria cylindrica L. – False Nettle
Laportea canadensis L. – Wood Nettle
Pilea pumila L., A. Gray – Clearweed; Richweed
- Verbenaceae: Vervain Family**
Phyla lanceolata Michaux – Frog-Fruit
Verbena hastata L. – Blue Vervain
Verbena urticifolia L. – White Vervain
- Violaceae: Violet Family**
Viola sororia Willd. – Common Blue Violet
Viola pubescens Aiton – Yellow Violet
- Vitaceae: Grape Family**
Parthenocissus quinquefolia (L.)Planchon – Virginia Creeper;
 Woodbine
Vitis riparia Michaux – Riverbank Grape

Fish Found or Expected to Occur in the Rivers that Flow into the Shiawassee National Wildlife Refuge

Species

Alewife
 Bass, largemouth
 Bass, rock
 Bass, smallmouth
 Bass, white
 Bluegill
 Bowfin
 Buffalo, bigmouth
 Bullhead, black
 Bullhead, yellow
 Carp, common
 Catfish, channel
 Chub, creek
 Chub, hornyhead
 Chub, river
 Crappie, black
 Crappie, white
 Dace, finescale
 Dace, northern redbellied
 Darter, blackside
 Darter, channel (MIT)
 Darter, Iowa
 Darter, Johnny
 Darter, river (MIT)
 Drum, freshwater
 Gar, longnose
 Goldfish
 Hogsucker, northern
 Lamprey, sea
 Lamprey, silver
 Lapomis sp. (Hybrids)
 Minnow, bluntnose
 Minnow, brassy
 Minnow, fathead
 Mudminnow, central
 Perch, log

Species

Perch, pirate
 Perch, trout
 Perch, yellow
 Pike, northern
 Quillback
 Redhorse, golden
 Redhorse, shorthead
 Redhorse, silver
 Salmon, chinook
 Salmon, coho
 Shad, gizzard
 Shiner, blacknose
 Shiner, common, plus hybrids
 Shiner, emerald
 Shiner, golden
 Shiner, mimic
 Shiner, sand
 Shiner, spotfin
 Shiner, spottail
 Shiner, striped
 Silversides, brook
 Smelt, rainbow
 Stickleback, brook
 Stonecat
 Stoneroller
 Sturgeon, lake (MIT)
 Sucker, white
 Sunfish, green
 Sunfish, longear
 Sunfish, pumpkinseed
 Trout, brown
 Trout, lake
 Trout, rainbow
 Walleye

Species (Bold indicates species that are abundant or common on the refuge for at least part of the year)	Nested on refuge recently Y=Yes	Status On Refuge				Potential Benefit by Habitat Objectives (Habitat used regularly for food, nestings, or cover) * indicates the species is found in habitat as result of best management practices where buffer strips and ditches develop a beneficial plant structure										Status In Region and State
		Spring	Summer	Fall	Winter	1	2	3	4	5	6	7	8	9	10	
Birds With Special Regional Status and Present in Numbers That Make a Significant Contribution to the Local Population																
Rare/Declining Concerns																
Least bittern	Y	r	o	r				f,c	f,n,c				f,n,c	f,n,c	f,n,c	R3,SMC,ST
Canada goose (SIBP)	Y	a	c	a	a			f,c	f,n,c			f,c	f,n,c	f,n,c	f,n,c	R3
Northern pintail		u		n					f,c			f,c	f,c	c		SMC
Lesser scaup		u		u					f,c				f,c	f,c		SMC
Bald eagle	Y	u	u	n	u	n,c	n,c	f,c	f				f,c	f,n,c	f,n,c	R3,T,ST
Northern harrier		u	o	u	u								f,c			SMC,SSC
Common tern		u		n					f				f,c	f,c	f,c	R3,SMC,ST
Black tern		r	o	r					f,c				f,c			R3,SMC,SS

Species (Bold indicates species that are abundant or common on the refuge for at least part of the year)	Nesting ? Y=Yes	Status on Refuge (See top of table for codes)				Potential Benefit f=food, n=nesting, c=cover; *see top of table for explanation										Status In Region and State (See top for codes)
		Sp	S	Fall	W	Unfragmented	Multi-story Forest	Green Tree Reservoir	Deep Water Pools	Moist Soil Units	Emergent Marsh	Grasslands	Croplands	Converted Croplands	Riverine	

Red-headed woodpecker	Y	u	u	u		f	f					*f,c	*f,c		f,n,c	SMC
Northern flicker	Y	c	c	c	r	f,n,c	f,n,c					*f,n,c	*f,c		f,n,c	SMC
Wood thrush	Y	u	u	u		f,n,c	f							f,n,c	f,n,c	R3,SMC
Bobolink	Y	o	o	u								f,n,c		f,n,c		R3,SMC
Eastern meadowlark		o	r	r								f,n,c		f,c		R3,SMC
Chestnut-sided warbler		u	u	u		f,n,c										SMC

Recreational/Economic Value Concerns

Wood duck	Y	c	c	c		n	n	f,c		f,c	f,n,c		f,c	f,c	f,n,c	R3
American black duck		c	u	c	c			f,c	c	f,c	f,c	f,c	f,c	f,c	f,c	R3
Mallard	Y	a	c	a	c			f,c	c	f,n,c	f,n,c	f,n,c	f,n,c	f,n,c	f,n,c	R3
Blue-winged teal	Y	c	u	c				f,c		f,n,c	f,n,c	f,n,c	f,c	f,n,c	c	R3
Canvasback		o	o	o					f,c		f,c		f,c	f,c	f,c	R3

Nuisance Concerns

Double-crested cormorant		c		c					f,c		f,c			f,c	f,c	R3
Canada goose (Urban giants)	Y	a	c	a	a			f,c	f,c	f,n,c	n,c	f,c	f,c	f,n,c	f,n,c	R3

State Concerns

Caspian tern		u	u	u					f		f,c				f,c	ST
Black-crowned night heron		u	u	u				f,c			f,c				f,c	SSC
Cooper's hawk		o	r	o	r	n	n			f	f,c	f,c	f,c	f,c	f,c	SSC
Common moorhen	Y	u	u	u					f,n,c	f,c	f,n,c			f,c	f,c	SSC

Prothonotary warbler	Y	u	u	u	r	r	f,n,c	f,n,c	f,n,c						f,n,c	f,n,c	SSC	
Wilson's phalarope		r				o			f,c	f,c					f,c	f	SSC	
Birds with Special Regional Status, But Rare on the Refuge																		
American bittern		r	r	r	r				f,c	f,c					f,n,c	f,n,c	R3,SMC,SS C	
Northern goshawk					r	r	f,c	f,c	f					*f,c	f,c	c	R3,SMC,SS C	
Red-shouldered hawk		r	r	r	r		f,n,c	f,n,c	f	f				*f,c	f,c	f,n,c	R3,SMC,ST	
Peregrine falcon									f,c	f,c				f,c	f,c	c	R3,E,SE	
Upland sandpiper		r	r	r	r				f,c	f,c				f,c	f,c	f	R3,SMC	
American woodcock		r	r	r	r		f,c	f,c						f,c	f,c	f,c	R3	
Short-eared owl						r			f,c	f,c				f,c	f,c		R3,SMC,SE	
Olive-sided flycatcher		r	r	r	r												R3,SMC	
Sedge wren	Y	r	r	r	r				f,n,c	f,n,c					f,n,c	f,n,c	R3,SMC	
Veery		r	r	r	r		f,n,c	f,n,c							f,n,c	f,n,c	R3,SMC	
Blue-winged warbler		r	r	r	r		f,n,c	f,n,c	f,n,c						f,n,c	f,n,c	R3,SMC	
Golden-winged warbler		r	r	r	r		f,n,c	f,n,c	f,n,c						f,n,c	f,n,c	R3,SMC	
Cerulean warbler		r	r	r	r		f,n,c	f,n,c							f,n,c	f,n,c	R3,SMC,SS C	
Kirtland's warbler		r	r	r	r				f,c	f,c				f,c	f,c		R3,E,SE	
Field sparrow	Y	r	r	r	r									f,n,c	f,n,c		R3,SMC	
Osprey		r	r	r	r				f	f					f	f,c	ST	
Merlin					r				f,c	f,c				f,c	f,c	f,c	ST	
Forster's tern					r				f	f					f,c	f,c	SSC	
Yellow-headed blackbird	Y	r	r	r	r										f,n,c	f,n,c	SSC	
Birds Currently Not on Regional Lists																		
Pied-billed grebe	Y	u	u	u	u				f,c						f,n,c	f,n,c		

Species (Bold indicates species that are abundant or common on the refuge for at least part of the year)	Nesting ? Y=Yes	Status on Refuge (See top of table for codes)				Potential Benefit f=food, n=nesting, c=cover; *see top of table for explanation										Status In Region and State- (See top for codes)
		Sp	S	Fall	W	d	Multi-story Forest	Green Tree Reservoir	Deep Water Pools	Moist Soil Units	Emergent Marsh	Grasslands	Croplands	Converted Croplands	Rivertine	
Black-billed cuckoo	Y	o	o	o								f,c	f,c		f,n,c	
Yellow-billed cuckoo	Y	o	o	o								f,c	f,c		f,n,c	
Eastern screech-owl	Y	u	u	u	u					f	f,c	*f,c	*f,c	f	f,n,c	
Great horned owl	Y	u	u	u	u	f,n,c	f,n,c			f		*f	*f		f,n,c	
Barred owl	Y	u	u	u	u	f,n,c	f,n,c			f		*f	*f	f	f,n,c	
Common nighthawk		o	o	o						f	f	f,c	f,c	f	f	
Chimney swift		o	o	o						f	f	f	f	f	f,n,c	
Ruby-throated hummingbird		u	o	o						f	f	f	f	f	f,n,c	
Belted kingfisher	Y	u	u	u			f								f,n,c	
Red-bellied woodpecker	Y	c	c	c	c	f,n,c	f,n,c								f,n,c	
Downy woodpecker	Y	c	c	c	c	f,n,c	f,n,c				*f				f,n,c	
Hairy woodpecker	Y	u	u	u	u	f,n,c	f,n,c								f,n,c	
Eastern wood pewee	Y	c	c	u		f,n,c	f,n,c		f		*f				f,n,c	
Alder flycatcher						f,n,c	f,n,c			f,n,c	f,n,c	*f	*f		f,n,c	
Willow flycatcher	Y	u	u	o		f,n,c	f,n,c			f,n,c	f,n,c	*f,n,c	*f,n,c		f,n,c	
Least flycatcher	Y	u	u	o						f,n,c	f,n,c	*f,n,c	*f,n,c		f,n,c	
Eastern phoebe	Y	u	u	u						f,n,c	f,n,c	*f,n,c	*f,n,c		f,n,c	
Great crested flycatcher	Y	c	c	u		f,n,c	f,n,c			f	f	f	f		f,n,c	
Eastern kingbird	Y	u	u	u						f,n,c	f,n,c	f,n,c	*f,n,c			
Horned lark	Y	c	c	c	c					f,n,c	f,n,c	f,n,c	*f,n,c	f,n,c		

Tree swallow	Y	a	c	a						f,n,c	f,n,c	f,n,c	f	f,n,c
Northern rough-winged swallow	Y	c	u	c						f,c	f,c	f,c	*f,n	f,n,c
Bank swallow		c	u	c						f,c	f,c	f,c	*f,c	f,n,c
Cliff swallow										f,c	f,c	f,c	*f,n,c	f,n,c
Barn swallow	Y	c	c	c						f,c	f,c	f,c	*f,n,c	f,n,c
Blue jay	Y	c	c	c	c			f,n,c			f	f	f	f,n,c
American crow	Y	c	c	c	c			f,n,c		f,c	f	f,c	f,c	f,n,c
Black-capped chickadee	Y	a	a	a	a			f,n,c			f	f	f	f,n,c
Tufted titmouse	Y	c	c	c	c			f,n,c						f,n,c
White-breasted nuthatch	Y	c	c	c	c			f,n,c						f,n,c
Brown creeper	Y	c	u	u	u			f,n,c						f,n,c
House wren	Y	c	c	c	c			f,n,c					*f,n,c	f,n,c
Marsh wren	Y	c	c	c	c					f,n,c				f,n,c
Golden-crowned kinglet		u		u				f,c						f,c
Ruby-crowned kinglet		u		u				f,c						f,c
Blue-gray gnatcatcher	Y	u	u	o				f,n,c						f,n,c
Eastern bluebird	Y	u	o	u				f,n,c					*f,n,c	
Gray-cheeked thrush		o		o										
Swainson's thrush		u		u				f,c						f,c
Hermit thrush		u		u				f,c						f,c
American robin	Y	a	a	a	r			f,n,c			f		*f,n,c	f,n,c
Gray catbird	Y	c	c	c						f,c			*f,n,c	f,n,c
Brown thrasher	Y	o	o	o						f,c			*f,n,c	f,n,c
Cedar waxwing	Y	u	u	u	u								*f,n,c	f,n,c
Northern shrike					o									
European starling	Y	c	c	c	c			f,c					*n,c	n,c

Species (Bold indicates species that are abundant or common on the refuge for at least part of the year)	Nesting ? Y=Yes	Status on Refuge (See top of table for codes)				Potential Benefit f=food, n=nesting, c=cover; *see top of table for explanation										Status in Region and State. (See top for codes)
		Sp	S	Fall	W	Ultragrasslands	Multi-story Forest	Green Tree Reservoir	Deep Water Pools	Moist Soil Units	Emergent Marsh	Grasslands	Croplands	Converted Croplands	Riverine	

Yellow-throated vireo	Y	o	o	r												f,n,c	
Warbling vireo	Y	u	u	u					f,c							f,n,c	
Red-eyed vireo	Y	u	u	u												f,n,c	
Tennessee warbler		u		u												f,c	
Nashville warbler		u		u					f,c							f,c	
Yellow warbler	Y	c	c	c					f,n,c							f,n,c	
Magnolia warbler		u		u					f,c							f,c	
Cape May warbler		u		u					f,c							f,c	
Black-throated blue warbler		u		u					f,c							f,c	
Blackburnian warbler		u		u					f,c							f,c	
Palm warbler		u		u					f,c							f,c	
Bay-breasted warbler		u		u					f,c							f,c	
Blackpoll warbler		o		o													
Black-and-white warbler		u		u					f,n,c							f,n,c	
American redstart	Y	u	u	u					f,n,c							f,n,c	
Ovenbird	Y	u	u	u					f,n,c								
Northern waterthrush		u		u					f,n,c							f,n,c	
Mourning warbler		o		o													
Common yellowthroat	Y	c	c	c					f,n,c							f,n,c	
Hooded warbler									f,n,c							f,n,c	

Wilson's warbler												f,c									f,c
Canada warbler												f,c									f,n,c
Scarlet tanager	Y											f,n,c									f,c
Northern cardinal	Y										c										f,n,c
Rose-breasted grosbeak	Y																				f,n,c
Indigo bunting	Y																				f,n,c
Rufus-sided towhee																					
American tree sparrow																					f,c
Chipping sparrow	Y																				
Vesper sparrow	Y																				
Savannah sparrow	Y																				f,n,c
Fox sparrow																					
Song sparrow	Y																				f,n,c
Lincoln's sparrow																					
Swamp sparrow	Y																				f,c
White-crowned sparrow																					f,n,c
White-throated sparrow																					f,c
Dark-eyed junco																					f,c
Lapland longspur																					f,c
Snow bunting																					f,c
Red-winged blackbird	Y																				f,n,c
Rusty blackbird																					f,c
Common grackle	Y																				f,n,c
Brown-headed cowbird	Y																				f,n,c
Northern oriole	Y																				f,n,c
American goldfinch	Y																				f,n,c

Species <small>(Bold indicates species that are abundant or common on the refuge for at least part of the year)</small>	Nesting? Y=Yes	Status on Refuge <small>(See top of table for codes)</small>				Potential Benefit <small>f=food, n=nesting, c=cover; * see top of table for explanation</small>										Status In Region and State <small>(See top for codes)</small>
		Sp	S	Fall	W	Upragmante	Multi-story Forest	Green Tree Reservoir	Deep Water Pools	Moist Soil Units	Emergent Marsh	Grasslands	Croplands	Converted Croplands	Riverine	

House sparrow		u	u	u	u		f,n,c		f,c		f,c	f,n,c		f,n,c		f,n,c		f,n,c
Horned grebe		r		r					f,c					f,c				f,c
American white pelican		r	r						f,c					f,c				f,c
Cattle egret		r	r							f,c				f,c				f,c
Greater white-fronted goose				r					c					f,c				f,c
Greater scaup		r	r						f,c					f,c				f,c
Red-breasted merganser		r	r						f,c					f,c				f,c
Broad-winged hawk		r	r	r			f,n,c		f			f	f,c	f,c				f,n,c
Golden eagle		r	r	r	r							I	I	I				
Ruffed grouse		r	r	r	r		f,n,c											
Wild turkey							f,n,c							f,n,c				
Sandhill crane		r	r	r	r				f,c					f,c				
American golden plover									f,c					f,c				f
American avocet		r	r	r	r				f,c					f,c				f
Hudsonian godwit		r	r	r	r				f,c					f,c				f
Marbled godwit		r							f,c					f,c				f
Red knot				r					f,c					f,c				f
Sanderling			r	r					f,c					f,c				f
Red-necked phalarope		r	r	r	r				f,c					f,c				f

Birds Currently Not on Regional Lists And Rare on the Refuge

Species (Bold indicates species that are abundant or common on the refuge for at least part of the year)	Nesting ?		Status on Refuge (See top of table for codes)				Potential Benefit f=food, n=nesting, c=cover; *see top of table for explanation										Status in Region and State (See top for codes)
	Y=Yes	?	Sp	S	Fall	W	Unfragmented	Multi-story Forest	Green Tree Reservoir	Deep Water Pools	Moist Soil Units	Emergent Marsh	Grasslands	Croplands	Converted Croplands	Riverine	
Ross' goose											f,c	f,c		f,c	f,c		
Black-necked stilt											f,c	f,c		f,c	f,c	f	
Willet											f,c	f,c		f,c	f,c	f	
Glaucous gull										f,c		f,c		f,c		f,c	
Great black-backed gull										f,c		f,c		f,c		f,c	
Acadian flycatcher																	
Carolina wren																	f,n,c
Yellow-breasted chat																	
Dickcissel	Y										f,c			f,c			f,n,c

**Shiawassee National Wildlife Refuge
Wildlife Species**

Mammals

Virginia Opossum – *Didelphis virginiana*
Northern Short-tailed Shrew – *Blarina brevicauda*
Star-nosed Mole – *Condylura cristata*
Big Brown Bat – *Eptesicus fuscus*
Little Brown Bat – *Myotis lucifugus*
Coyote – *Canis latrans*
Red Fox – *Vulpes vulpes*
Raccoon – *Procyon lotor*
Long-tailed Weasel – *Mustela frenata*
Least Weasel – *Mustela nivalis*
Mink – *Mustela vison*
Striped Skunk – *Mephitis mephitis*
River Otter – *Lutra canadensis*
White-tailed Deer – *Odocoileus virginianus*
Southern Flying Squirrel – *Glaucomys volans*
Woodchuck – *Marmota monax*
Gray Squirrel (Black Morph) – *Sciurus carolinensis*
Fox Squirrel – *Sciurus niger*
Eastern Chipmunk – *Tamias striatus*
Red Squirrel – *Tamiasciurus hudsonicus*
Beaver – *Castor canadensis*
White-footed Mouse – *Peromyscus leucopus*
Deer Mouse – *Peromyscus maniculatus*
Meadow Vole – *Microtus pennsylvanicus*
Muskrat – *Ondatra zibethicus*
Meadow Jumping Mouse – *Zapus hudsonius*
Eastern Cottontail – *Sylvialagus floridanus*

Reptiles

Blanding's Turtle – *Emydoidea blandingii*
Common Map Turtle – *Graptemys geographica*
Midland Painted Turtle – *Chrysemys picta marginata*
Snapping Turtle – *Chelydra serpentina serpentina*
Eastern Spiny Softshell Turtle – *Trionyx spiniferus spiniferus*
Eastern Garter Snake – *Thamnophis sirtalis sirtalis*
Butler's Garter Snake – *Thamnophis butleri*
Eastern Fox Snake – *Elaphe vulpina glouvi*
Eastern Milk Snake – *Lampropeltis triangulum triangulum*

Amphibians

Red-backed Salamander – *Plethodon cinereus*
Blue-spotted Salamander – *Ambystoma laterale* *Hallowell*
American Toad – *Bufo americanus* *Holbrook*
Northern Spring Peeper – *Hyla crucifer crucifer*

Gray Treefrog – *Hyla versicolor/chrysoscelis*
Western Chorus Frog – *Pseudacris triseriata triseriata*
Green Frog – *Rana clamitans melanota*
Wood Frog – *Rana sylvatica*
Northern Leopard Frog – *Rana pipiens*

Invertebrates

No formal, complete survey of Refuge invertebrates exists, so the following is an incomplete listing representing only those species documented.

Damselflies

(*Calopterygidae*):

American Rubyspot – *Hetaerina americana*

Dragonflies

Darners (*Aeshnidae*):

Lance-tailed Darner – *Aeshna constricta*

Common Green Darner – *Anax junius*

Clubtails (*Compidae*):

Midland Clubtail – *Gomphus fraternus*

Emeralds (*Corduliidae*):

Common Baskettail – *Epiheca cynosura*

Skimmers (*Libellulidae*)

Calico Pendant – *Celithemis elisa*

Halloween Pendant – *Celithemis eponina*

Eastern Pondhawk – *Erythemis simplicicollis*

Dot-tailed Whiteface – *Luecorrhinia intacta*

Widow Skimmer – *Libellula luctuosa*

Common Whitetail – *Libellula /Plathemis lydia*

Twelve-spotted Skimmer – *Libellula pulchella*

Blue Dasher – *Pachydiplax longipennis*

Wandering Glider – *Pantala flavescens*

Eastern Amberwing – *Perithemis tenera*

Ruby Meadowfly – *Sympetrum rubicundulum*

Yellow-legged Meadowfly – *Sympetrum vicinum*

Carolina Saddlebags – *Tramea carolina**

Black Saddlebags – *Tramea lacerata*

Butterflies

Papilionidae:

Black Swallowtail – *Papilio polyxenes asterius*

Tiger Swallowtail – *Papilio glaucus*

Giant Swallowtail – *Papilio cresphontes*

Pieridae:

Cabbage White – *Pieris rapae*

Clouded Sulfur – *Colias philodice eriphyle*

Lycaenidae:

Bronze Copper – *Lycaena hyllus*

Acadian Hairstreak – *Satyrrium acadia*

* Identification tentative, based on current state odonata list.

Banded Hairstreak – *Saytyrium calanus*
Eastern Tailed Blue – *Everes comyntas*
Spring Azure – *Celastrina ladon*

Nymphalidae:

American Snout – *Libytheana carinenta*
Great Spangled Fritillary – *Speyeria cybele*
Pearl Crescent – *Phyciodes tharos*
Question Mark – *Polygonia interrogationis*
Eastern Comma – *Polygonia comma*
Gray Comma – *Polygonia progne*
Milbert's Tortoise Shell – *Nymphalis milberti*
Mourning Cloak – *Nymphalis antiopa*
Baltimore – *Euphydryas phaeton*
American Painted Lady – *Vanessa virginiensis*
Painted Lady – *Vanessa cardui*
Red Admiral – *Vanessa atalanta rubria*
Buckeye – *Junonia coenia*
Red-spotted Purple – *Limenitis arthemis astyanax*
Viceroy – *Limenitis archippus*
Hackberry Emperor – *Asterocampa celtis*
Northern Pearly Eye – *Enodia anthedon*
Little Wood Satyr – *Megisto cymela*
Common Wood Nymph – *Cerlyonis pegala*
Monarch – *Danaus plexippus*

Hesperiidae:

Juvenal's Duskywing – *Erynnis juvenalis*
Silver-spotted Skipper – *Epargyreus clarus*
Common Sooty Wing – *Pholisora cattullus*
Least Skipper – *Ancyloxypha numitor*
European Skipper – *Thymelicus lineola*
Yellow-patched Skipper – *Polites peckius*
Little Glassy Wing – *Pompeius verna*

Moths

Sphingidae:

Modest Sphinx – *Pachysphinx modesta*
Pandorus Sphinx – *Eumorpha pandorus*
White-lined Sphinx – *Hyles lineata*
Lettered Sphinx – *Deidamia inscripta*

Saturniidae:

Polyphemus Moth – *Antheraea polyphemus*
Cecropia Moth – *Hyalophora cecropia*

Arctiidae:

LeConte's Haploa – *Haploa lecontei*
Isabella tiger Moth – *Pyrrharctia isabella*
Salt Marsh Moth – *Estigmene acrea*
Fall Webworm Moth – *Hyphantria cunea*
Yellow Bear Moth – *Spilosoma dubia*

Virgin Tiger Moth – *Grammia virgo*
Delicate Cynia – *Cynia tenera*
Oregon Cynia – *Cynia oregonensis*
Milkweed Tussock Moth – *Euchaetes egle*
Virginia Ctenucha – *Ctenucha virginica*
Yellow-collared Scape Moth – *Cisseps fulvicollis*

Noctuidae:

Old Man Dart – *Agrotis vetusta*
Ipsilon Dart – *Agrotis ipsilon*
Dingy Cutworm Moth – *Feltia jaculifera*
Master's Dart – *Feltia herilis*
Rubbed Dart – *Euxoa detersa*
Clandestine Dart – *Spaelotis clandestina*
Catocaline Dart – *Cryptocala acadiensis*
Armyworm Moth – *Pseudaletia unipuncta*
Northern Burdock Borer – *Papaipema arctivorens*
Copper Underwing – *Amphipyra pyramidoides*
Pearly Wood-nymph – *Eudryas unio*
Eight-spotted Forester – *Alypia octomaculata*
Common Looper Moth – *Autographa precatationis*
Celery Looper Moth – *Anagrapha falcifera*
Forage Looper Moth – *Caenurgina erechtea*
The Herald – *Scoliopteryx libatrix*
Maple Zale – *Zale galbanata*
Maple Looper Moth – *Parallelia bistriaris*
Darling Underwing – *Calocala cara*
Green Cloverworm Moth – *Plathypena scabra*
Spotted Grass Moth – *Rivula propinqualis*
Yellowish Zanclognatha – *Zanclognatha ochreipennis*
Wavy-lined Zanclognatha – *Zanclognatha ochreipennis*

Geometridae:

Lesser Maple Spanworm Moth – *Itame pustularia*
Porcelain Gray – *Protoboarmia porcelaria*
Linden Looper Moth – *Erannis tiliaria*
False Crocus Geometer – *Xanthotype urticaria*
Crocus Geometer – *Xanthotype sospeta*
Pale Beauty – *Campaea perlata*
Elm Spanworm Moth – *Ennomos magnaria*
Common Metarranthis – *Metarranthis angularia*
White Slant Line – *Tetracis cachexiata*
Large Maple Spanworm Moth – *Prochoerodes transversata*
Horned Spanworm Moth – *Nematocampa limbata*
Wavy-lined Emerald – *Synchlora aerata albolineata*
Chickweed Geometer – *Haematopsis grataria*
Large Lace-border – *Scopula limboundata f. relevata*
Soft-lined Wave – *Scopula inductata*
Lesser Grapevine Looper Moth – *Eulithis diversilineata*
Barberry Geometer – *Coryphista meadii*
White-banded Toothed Carpet – *Epirrhoe alternata*
The Beggar – *Eubaphe mendica*

Three-patched Bigwing – *Heterophleps refusaria*

Three-spotted Phillip – *Heterophleps triguttaria*

Pterophoridae:

Plume Moth – *Platyptillia carduidactyla*

Plume Moth – *Emmelina monodactyla*

Pyraliadae:

European Corn Borer Moth – *Ostrinia nubilalis*

Tortricidae:

Oblique-banded Leafroller Moth – *Choristoneura rosaceana*

Sparganothis Fruitworm Moth – *Sparganothis sulfureana*



MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

July 7, 2003

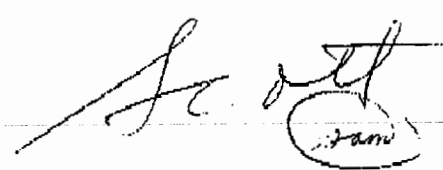
TO: Tim Reis, Management Unit Supervisor
Barb Lercel, Project Manager

FROM: Scott Whitcomb, Public Lands Specialist, Wildlife Division

SUBJECT: **SHPO CLEARANCE**
Shiawassee River SGA, Saginaw County

We have received a letter from the State Historic Preservation Officer (SHPO) and tribal representatives (THPO) indicating that "no historic properties are affected" by your proposal for routine maintenance at the Shiawassee River SGA in Saginaw County. (See attachment for area description.) Therefore, you may commence with this work project. I will send you a copy of the SHPO clearance letter so that you can review specific details.

Please contact me if the scope of work changes in any way, or if artifacts or bones are discovered. Thank you.



SW/sam
Attachment
cc: Eric Sink
Steve Beyer



ANNIFER GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

DR. WILLIAM ANDERSON
DIRECTOR

June 30, 2003

MR H JOHN DOBROVOLNY
U S FISH AND WILDLIFE SERVICES
BISHOP HENRY WHIPPLE FEDERAL BLDG
1 FEDERAL DRIVE
FT SNELLING MN 55111

RE: ER-910387.03.SHIAWASSEE RIVER

Shiawassee River State Game Area-Pittman-Robertson Projects,
Routine Maintenance; Sections 2, 3, 4, 5, 9, 10, 11, 13, 14, 16, 17, 21,
22, 23, 24, 25, 26, 27, 28, 29, 32, 33 and 34, Swan Creek, James,
Spaulding and St. Charles Twps., Saginaw County (FWS)

Dear Mr. Dobrovolny:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertakings at the locations noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that no historic properties are affected within the area of potential effects of these undertakings.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. In all cases, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences the Fish and Wildlife Service's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of the Fish and Wildlife Service's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected".

The State Historic Preservation Office is not the office of record for these undertakings. You are therefore asked to maintain a copy of this letter with your environmental review record for these undertakings. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Alexandra Raven, Environmental Review Specialist, at (517) 335-2721 or by email at ER@michigan.gov. Please reference our project number in all communication with this office regarding these undertakings. Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

MMP:JRH:cm

Copy: Scott Whitcomb, DNR



2003 SHIAWASSEE RIVER STATE GAME AREA DEER HUNT INFORMATION (989) 865-6211

The Shiawassee River State Game Area (SRSGA) and the Shiawassee National Wildlife Refuge (SNWR) deer hunts will be handled separately. For information on the SNWR hunts please contact the refuge at 6975 Mower Road, Saginaw, MI 48601, (989) 777-5930. You may apply for both state and federal pre-registered hunts. **NEW FOR 2003** – September two-day youth Firearm Deer Hunt will be held on SRSGA by permit only – see back page.

PRE-REGISTERED DRAWINGS

Applicants will apply by submitting cards to the St. Charles DNR Field Office. There is no fee to apply. Cards must be postmarked by **SEPTEMBER 10, 2003**. Cards postmarked after the deadline or filled out incorrectly will not be entered in the drawing. You do not need return postage on the card; this card will not be returned to you.

Instructions for Preregistered Hunt Applications

1. Applicants may apply **once** and may choose only **ONE** (1) hunt. Hunt choice code numbers for State hunts are listed below.
2. Hunters must mail a card (at least 3"x5", but not larger than 4"x6", not a piece of paper) to **DNR Field Office, 225 E. Spruce St., St. Charles, MI 48655-1309** with following information on one side of the card:
 - Name
 - Address
 - Driver's License Number, or Sportcard Number, or Hunter Safety Number
 - Hunt Choice Code Number

If applying as partners you must mail cards together in one envelope (see #3 below).
3. Hunters may apply with a "partner" (maximum of two people in one party) in which case they will both receive a permit or neither will receive a permit. "Partners" must apply for the same hunt choice code number. For hunters who wish to apply as partners each hunter must fill out a card and the cards must be mailed together in one envelope.
4. **Hunters who are successful for antlerless permits will be notified with instructions on how to purchase a Deer Management Unit 173 Public Land Antlerless Deer license using the Retail Licensing system.**
6. Only successful applicants will be notified. They will be notified by October 14, 2003.

STATE PRE-REGISTERED HUNTS SHIAWASSEE RIVER STATE GAME AREA

HUNT CHOICE CODE NUMBER	DATES	TYPE	HUNT AREA	NUMBER HUNTERS	2002 APPLICANTS	HARVEST PERMITS*
101	Oct. 25 – Oct. 31	Archery	A	150	207	State Regulations
102	Nov. 01 - Nov. 07	Archery	A	150	234	State Regulations
103	Nov. 08 - Nov. 14	Archery	A	150	194	State Regulations
104	Nov. 15 - Nov. 19	Shotgun	B	100	431	State Regulations
105	Nov. 20 - Nov. 24	Shotgun	B	100	225	State Reg. & 50% Bonus
106	Nov. 25 - Nov. 30	Shotgun	B	100	174	State Reg. & 50% Bonus
107	Dec. 12 - Dec. 16	Muzzleloader	A	100	375	State Regs. & All Bonus
108	Dec. 17 - Dec. 21	Muzzleloader	A	100	512	State Regs. & All Bonus

Hunt Areas: Area **A** – Entire area, except state wildlife refuge. Area **B** – A Areas & 53-54.

*Antlerless allotments are subject to change.

Printed by Authority of PA 451 of 1994
Total number of copies printed: 5,000 Cost per copy: \$0.027 Total cost: \$221.50

YOUTH FIREARM DEER HUNT

30 permits will be issued from the St. Charles Field Office **in person only**. Adults can pick up a permit for a youth with correct information. No mail-in requests will be accepted. Permits are first come, first served. Permits will be available beginning September 2 at 7:30 am. Youths 12-16 years of age are eligible to take 1 deer during this special two-day season. Youths 12 and 13 are restricted to archery-only hunting. Youths must be accompanied by an adult 18 years or older. An adult accompanying a youth cannot possess or carry a firearm or bow and does not need a deer hunting license. Must wear Hunter Orange.

LOCAL ARCHERY HUNTS

NOTE: You may apply for 1 pre-registered hunt, but you may also obtain a permit for and hunt during any local archery periods in addition to the pre-registered hunt for which you are selected. There will not be any local Archery drawings for the Shiawassee River State Game Area. You can pick up unlimited permits for three (3) hunt periods: October 1-24, December 1-11 and December 22 -January 1. Hunters may obtain these permits from the St. Charles Field Office in person or by mail (include name, driver's license or sportcard number, date of birth, address and hunt period selection from periods listed below). If requesting them by mail, you may mail for it at any time, we will send you the permit on the first day of the pick up date below. **Telephone permit requests will not be accepted.**

Archers may hunt the entire game area, except state wildlife refuge (refer to state game area map).

Permits may be picked up as follows:

FOR HUNT PERIOD

October 1-24

December 1-11

December 22 – January 1

PICK UP PERMITS ON THESE DATES

September 22 - October 24

November 19 - December 11

December 15 - December 30

GENERAL INFORMATION

- SCOUTING:** January 2 – September 30, 2003 **only**
- FEES:** \$13.00 for Waterfowl Area Use Annual (code 138) or \$4.00 for Waterfowl Area Use Daily (code 137) is required for all deer hunts, in addition to a deer hunting license.
- FIREARMS:** Same as statewide regulations except the possession and use of buckshot is prohibited on Shiawassee River State Game Area.
- PERMITS:** You must carry your issued permit with you during your hunt period.
- PERMIT RETURNS:** Permits must be returned **within 48 hours** after last day of hunt period. Failure to return permits on time will result in ineligibility for future permits. Deer hunters having any outstanding permits for any of the 2003 hunts will not be issued any deer permits in 2004.
- TREE STANDS:** Must be portable and can be placed on the **first day** of your hunt period and can remain until the last day of your hunt period. Stands must have name and address on them, which can be seen from the ground.
- DEER CHECK:** Hunters are encouraged to bring deer to a DNR check station to assist in our collection of bio-data and TB head testing, to improve our deer management program.
- BAITING:** No baiting is allowed on the Shiawassee River State Game Area.
- BUTTON BUCKS:** Hunters are encouraged to carefully look at antlerless deer before shooting to minimize the chance of harvesting a button buck or young male. Allowing button bucks to survive will increase the buck to doe sex ratio on this area.

Equal Rights for Natural Resource Users

The Michigan Department of Natural Resources (MDNR) provides equal opportunities for employment and access to Michigan's natural resources. Both State and Federal laws prohibit discrimination on the basis of race, color, national origin, religion, disability, age, sex, height, weight or marital status under the Civil Rights Acts of 1964 as amended (MI PA 453 and MI PA 220, Title V of the Rehabilitation Act of 1973 as amended, and the Americans with Disabilities Act). If you believe that you have been discriminated against in any program, activity, or facility, or if you desire additional information, please write:

HUMAN RESOURCES
MICHIGAN DEPARTMENT OF NATURAL RESOURCES
PO BOX 30028
LANSING MI 48909-7528

Or → MICHIGAN DEPARTMENT OF CIVIL RIGHTS
STATE OF MICHIGAN PLAZA BUILDING
1200 6TH STREET
DETROIT MI 48226

Or → OFFICE FOR DIVERSITY AND CIVIL RIGHTS
US FISH AND WILDLIFE SERVICE
4040 NORTH FAIRFAX DRIVE
ARLINGTON VA 22203

For information or assistance on this publication, contact the MICHIGAN DEPARTMENT OF NATURAL RESOURCES, WILDLIFE, PO BOX 30444, LANSING, MI 48909. TTY: Michigan Relay Center 1-800-649-3777.

This publication is available in alternative formats upon request.

GAME AREA FACILITY INVENTORY SUMMARY

DISTRICT SBMU		STATE GAME AREA						Shiawassee River State Game Area	
COUNTY Saginaw		TOWN 10 N		RANGE 03E		COMPT.#			
	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #		
FACILITY	2	3	4	9	10	11		TOTAL	
Water Control Structures	1	1				1			
Dikes (Sites)	2	1		1	2	2			
Dikes (Miles)	3	2		1.5	3	1.5			
Level Ditching									
Vehicle Bridges		1							
Foot Bridges						1			
Culverts	1	1		1	2				
2-Track Rds. (Public) (in miles)									
2-Track Rds. (Work Rds.)		0.3							
Foot Trails									
Parking Lots			1	2	5	1			
Miles of Boundary to be Posted	1.5	1	1.5	2	1	2			
Routed Signs			2						
Other Information Signs	3	1	1	1	4				
Gates		1	1		1				
Barricades									
Other--Boat Launches			1						
Other--Accessible Deer Blind					1				

GAME AREA FACILITY INVENTORY SUMMARY

DISTRICT	SBMU	STATE GAME AREA				Shiawassee River State Game Area			
COUNTY	Saginaw	TOWN 11N			RANGE	03E	COMPT.#		
	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #		
FACILITY	13	14	16	17	21	22	23	TOTAL	
Water Control Structures		1	3		3		7		
Dikes (Sites)	1	2	1		2		3		
Dikes (Miles)	0.8	1.75	1.5		1.25		5.3		
Level Ditching									
Vehicle Bridges									
Foot Bridges	1	1					3		
Culverts	1	1			3	1	8		
2-Track Rds. (Public) (in miles)									
2-Track Rds. (Work Rds.)		0.7			0.5		2.5		
Foot Trails									
Parking Lots		1	1		2	3			
Miles of Boundary to be Posted	1	3	1.8	0.3	2	2			
Routed Signs					1				
Other Information Signs	5	1			2		13		
Gates	2	1	1		1	2			
Barricades									
Other--Boat Launch		1							
Other--Accessible Deer Blind						1			
Other--Accessible Duck Blind						1			

GAME AREA FACILITY INVENTORY SUMMARY

DISTRICT	SBMU	STATE GAME AREA						Shiawassee River State Game Area
COUNTY	Saginaw	TOWN	11N	RANGE	03E	COMPT.#		
	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	
FACILITY	24	25	26	27	28	29	32	TOTAL
Water Control Structures	1	1	7	9		1		
Dikes (Sites)	2	1	12	7		2		
Dikes (Miles)	2.25	1	4.5	6.5		0.8		
Level Ditching								
Vehicle Bridges	1							
Foot Bridges			1	2				
Culverts	1		3	7	2			
2-Track Rds. (Public) (in miles)								
2-Track Rds. (Work Rds.)		0.3	0.5	1	0.5		0.4	
Foot Trails								
Parking Lots					4			1
Miles of Boundary to be Posted	0.5	1	0.5	0.25	2	1.5	1.2	
Routed Signs					1			
Other Information Signs	14		13	16	2	1		
Gates				2	1			1
Barricades								
Other--Accessible Blind					1			

GAME AREA FACILITY INVENTORY SUMMARY

DISTRICT	SBMU	STATE GAME AREA			Shiawassee River State Game Area			
COUNTY	Saginaw	TOWN	11N	RANGE	03E	COMPT.#		
	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	
FACILITY	33	34	35					TOTAL
Water Control Structures		3	4					
Dikes (Sites)		1	2					
Dikes (Miles)		1.3	4.1					
Level Ditching								
Vehicle Bridges		1						
Foot Bridges			3					
Culverts		1	4					
2-Track Rds. (Public) (in miles)								
2-Track Rds. (Work Rds.)		1.3	0.4					
Foot Trails								
Parking Lots								
Miles of Boundary to be Posted	0.8		1					
Routed Signs								
Other Information Signs			18					
Gates								
Barricades								

GAME AREA FACILITY INVENTORY SUMMARY

DISTRICT SBMU		STATE GAME AREA Shiawassee River State Game Area							
COUNTY	Saginaw	TOWN	11N	RANGE			04E	COMPT.#	
	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #	SEC. #		
FACILITY	19							TOTAL	
Water Control Structures								43	
Dikes (Sites)								44	
Dikes (Miles)								42.05	
Level Ditching									
Vehicle Bridges								3	
Foot Bridges								12	
Culverts								37	
2-Track Rds. (Public) (in miles)									
2-Track Rds. (Work Rds.)								8.4	
Foot Trails									
Parking Lots								21	
Miles of Boundary to be Posted	0.75							28.6	
Routed Signs								4	
Other Information Signs	1							96	
Gates								14	
Barricades									
Other--Boat Launch								2	
Other--Accessible Deer Blind								3	
Other--Accessible Duck Blind								1	

3.112 Shiawassee deer management unit, deer hunting regulations.

Sec. 3.112. A person hunting deer in the Shiawassee deer management unit shall comply with all existing laws and rules regarding the taking of deer including section 13.9 of this order. In addition:

(1) A person shall not hunt deer in the Shiawassee deer management unit without a Shiawassee deer hunting permit.

(2) A person hunting deer within the Shiawassee deer management unit shall comply with all rules and regulations printed on their Shiawassee deer hunting permit.

History: Eff. Mar. 31, 1989; Am. 14, 1989, Eff. Sept. 1, 1989; Am. 13, 1990, Eff. Sept. 1, 1990; Am. 11, 1991, Eff. Sept. 1, 1991.

3.113 Shiawassee deer hunting permits, application process; drawings; unlawful acts.

Sec. 3.113. (1) Shiawassee deer hunting permits will be issued to persons chosen in random drawings from applicants for each hunting period. Permits shall not be transferable to other hunters.

(2) Applicants for local drawings must apply in person at the St. Charles field office of the department of natural resources at the prescribed time and date. Any permits leftover after the drawings may be issued on a first-come, first-served basis at the St. Charles field office of the department of natural resources or by a designated agent of the department. Any licensed deer hunter with a valid kill tag for the current deer hunting season may apply for a permit.

(3) Applications for preregistered hunts in the Shiawassee deer management unit will be in accordance with instructions provided by the department. It shall be unlawful to apply more than once or for more than 1 preregistered deer hunt.

(4) Applications for preregistered deer hunts must be submitted in accordance with instructions no later than September 24.

History: Eff. Mar. 31, 1989; Am. 14, 1989, Eff. Sept. 1, 1989; Am. 13, 1990, Eff. Sept. 1, 1990; Am. 11, 1991, Eff. Sept. 1, 1991; Am. 6, 1995, Eff. Sept. 1, 1995; Am. 9, 1998, Eff. Sept. 1, 1998.

3.114 Repealed. Am. 11, 1991, Eff. Sept. 1, 1991.

Publisher's note: The repealed section pertained to Shiawassee river state game area, bow and arrow only deer hunt, open season, and permits.

3.115 Repealed. Am. 11, 1991, Eff. Sept. 1, 1991.

Publisher's note: The repealed section pertained to Shiawassee river state game area, firearm deer hunting, open season, and permits.

THE WILDLIFE CONSERVATION ACT ORDER

3.414 Managed waterfowl areas, shot size limitation; unlawful acts.

Sec. 3.414. Except as otherwise restricted in Chapter XIII, a person shall not possess or use shotshells, or loose shot with a shot size greater than BBB for the hunting and taking of waterfowl in those areas posted "State Game Area - Hunting By Permit Only" on the Nayanquing point, St. Clair flats, and Fish point wildlife areas; on all of the Pointe Mouillee and Shiawassee river state game areas; and on all of the Allegan state game area.

History: Eff. Mar. 31, 1989; Am. 17, 1993, Eff. Sept. 1, 1993; Am. 14, 1996, Eff. Sept. 1, 1996; Am. 13, 1999, Eff. Sept. 1, 1999; Am. 15, 2000, Eff. Sept. 1, 2000; Am. 11, 2002, Eff. Sept. 1, 2002.

THE WILDLIFE CONSERVATION ACT ORDER

3.418 Goose management units, harvest quotas; department's wildlife chief to close season.

Sec. 3.418. (1) The following goose management units, described in sections 12.701 to 12.705 of this order, shall be open to goose hunting until the open seasons stipulated in section 3.415 of this order expire, or until the wildlife division chief determines that the following listed quota of Canada geese has been harvested:

- (a) Saginaw county goose management unit - quota of 2,000 Canada geese.
- (b) Allegan county goose management unit - quota of 1,400 Canada geese.
- (c) Muskegon wastewater goose management unit - quota of 450 Canada geese.
- (d) Tuscola/Huron goose management unit - quota of 750 Canada geese.

(2) When the wildlife division chief determines that the quota of Canada geese for a management unit listed in this section has been harvested, the chief shall issue an interim order to close the goose hunting season in that unit.

History: Eff. Mar. 31, 1989; Am. 16, 1990, Eff. Sept. 1, 1990; Am. 14, 1991, Eff. Sept. 1, 1991; Am. 10, 1992, Eff. Sept. 1, 1992; Am. 14, 1996, Eff. Sept. 1, 1996; Am. 6, 1997, Eff. Sept. 1, 1997; Am. 13, 1998, Eff. Sept. 1, 1998; Am. 13, 1999, Eff. Sept. 1, 1999; Am. 15, 2000, Eff. Sept. 1, 2000; Am. 11, 2002, Eff. Sept. 1, 2002.

THE WILDLIFE CONSERVATION ACT ORDER

3.419 Managed waterfowl areas, unlawful acts; fees authorized by state law; designation of areas.

Sec. 3.419. As provided by section 43525 of part 435, hunting and fishing licensing, Act No. 451 of the Public Acts of 1994, as amended, being section 324.43525 of the Michigan Compiled Laws, a person shall not hunt waterfowl in an area designated by the commission as a managed waterfowl area without an annual or daily managed waterfowl area permit. The following state game and wildlife areas, within the boundaries posted "State Game Area - Hunting by Permit Only" are designated as managed waterfowl areas:

- (1) Allegan state game area (Highbanks and Fennville farm units) - Allegan county.
- (2) Fish Point wildlife area - Tuscola county.
- (3) Nayanquing Point wildlife area - Bay county.
- (4) Pointe Mouillee state game area (Long pond and Nelson units) - Monroe county.
- (5) Shiawassee river state game area - Saginaw county.
- (6) St. Clair flats wildlife area (Harsens Island unit) - St. Clair county.

History: Eff. Mar. 31, 1989; Am. 16, 1990, Eff. Sept. 1, 1990; Am. 6, 1997, Eff. Sept. 1, 1997.

THE WILDLIFE CONSERVATION ACT ORDER

3.601 Special management areas, trapping regulations.

Sec. 3.601. The following trapping regulations shall be in effect for the management areas listed:

- (1) Shiawassee river state game area - Trapping only by permit obtained at the department St. Charles field office.
- (2) Shiawassee national wildlife refuge - Trapping only by permit obtained from the refuge manager.
- (3) Muskegon state game area - Trapping only by permit obtained at the department Muskegon state game area headquarters.
- (4) Poel Island waterfowl refuge within the Grand Haven state game area - Trapping only by permit obtained at the department Muskegon state game area headquarters.

History: Eff. Mar. 31, 1989; Am. 9, 1989, Eff. Sept. 1, 1989; Am. 15, 1993, Eff. Sept. 1, 1993.

THE WILDLIFE CONSERVATION ACT ORDER

3.606 Muskrat, mink, and raccoon trapping, open seasons; closed areas.

Sec. 3.606. (1) Except as otherwise provided in this section, the open season for taking muskrat and mink by trapping shall be October 25 to January 31 in zone 1, November 1 to January 31 in zone 2, and November 10 to January 31 in zone 3. The trapping season for raccoon shall be October 15 to January 31 in zones 1 and 2, and November 1 to January 31 in zone 3.

(2) Except as provided in subsection (3), the open seasons for taking muskrat, mink and raccoon by trapping on managed wetlands shall be as follows:

Area	Season
Nayanquing point wildlife area	December 1 to January 31
Crow Island state game area	December 1 to January 31
Shiawassee river state game area	December 1 to March 31 except units A1 to A11 shall have the same season dates as provided in subsection (1) for zone 3
Fish point wildlife area	December 1 to January 31
Grand Haven state game area	November 10 to January 31
Rose lake wildlife research area	November 10 to January 31
Allegan state game area	Day after Allegan goose management area goose season closes to January 31
St. John's marsh wildlife area	Day after waterfowl season closes to January 31
Pte. Mouillee state game area	Day after waterfowl season closes to January 31
St. Clair flats wildlife area	Day after waterfowl season closes to January 31 and March 15 to April 15
Maple river state game area	November 10 to January 31

(3) Managed wetlands or portions of managed wetlands shall be closed, as posted.

History: Eff. Mar. 31, 1989; Am. 9, 1989, Eff. Sept. 1, 1989; Am. 10, 1990, Eff. Sept. 1, 1990; Am. 4, 1992, Eff. Sept. 1, 1992; Am. 9, 1993, Eff. Sept. 1, 1993; Am. 14, 1996, Eff. Sept. 1, 1996; Am. 7, 1997, Eff. Sept. 1, 1997.

THE WILDLIFE CONSERVATION ACT ORDER

12.73a "Deer management unit 173 (Shiawassee flats)" defined.

Sec. 12.73a. "Deer management unit 173 (Shiawassee flats)" means that area of Saginaw county bounded by a line beginning at the junction of highways M-13 and M-46 in Saginaw, then southerly on highway M-13 to west Verne road, westerly on west Verne road to Bueche road, southerly on Bueche road to Fergus road, westerly on Fergus road to highway M-52, northerly on highway M-52 to Swan Creek road, easterly on Swan Creek road to Center road, northerly on Center road to highway M-46, easterly on highway M-46 to the point of beginning.

History: Am. 8, 2001, Eff. June 1, 2001.

12.73b "Deer management unit 273 (Shiawassee deer management)" defined.

Sec. 12.73b. "Deer management unit 273 (Shiawassee deer management)" means the posted lands of the Shiawassee river state game area and the Shiawassee national wildlife refuge.

History: Am. 8, 2001, Eff. June 1, 2001.

12.701 "Saginaw county goose management unit" defined.

Sec. 12.701. "Saginaw county goose management unit" means that area of Saginaw county enclosed by highway M-46 on the north; highway M-52 on the west; highway M-57 on the south; and highway M-13 on the east.

History: Eff. Mar. 31, 1989; Am. 12, 1991, Eff. Aug. 31, 1991.

Chapter XIII -- Managed State Game and Wildlife Areas

13.1 Managed state game areas and wildlife areas listed.

Sec. 13.1. The managed state game areas and wildlife areas are the Allegan state game area (Highbanks unit, Fennville farm, Ottawa marsh, and Crooked lake marsh) - Allegan county; Crow Island state game area (east and west units) - Saginaw and Bay counties; Fish Point wildlife area - Tuscola county; Grand Haven state game area - Ottawa county; Lapeer state game area - Lapeer county; Maple river state game area (wetlands wildlife management units near highway US-27) - Gratiot county; Munuscong wildlife area - Chippewa county; Muskegon state game area - Muskegon county; Nayanquing Point wildlife area - Bay county; Pointe Mouillee state game area - Wayne and Monroe counties; Portage marsh - Delta county; Shiawassee river state game area - Saginaw county; St. Clair flats wildlife area (Harsens Island unit, Dickinson Island unit and St. John's marsh unit) - St. Clair county; Sturgeon river sloughs wildlife area and Baraga plains wildlife area - Houghton and Baraga counties, and Wigwam Bay wildlife area (east unit) - Arenac county.

History: Eff. Mar. 31, 1989; Am. 16, 1990, Eff. Sept. 1, 1990; Am. 14, 1996, Eff. Sept. 1, 1996.

13.2 Unlawful acts.

Sec. 13.2. A person shall not do any of the following on any managed state game or wildlife area listed in section 13.1:

- (1) Enter any lands or waters posted "Wildlife Refuge - Do Not Enter" without proper written permission of the area manager.
- (2) Construct a shooting pit or permanent blind, except as authorized by subsection 13.11(4).
- (3) Hunt in or occupy any hunting zone, area, post, or blind, other than designated on the permit issued to the person by the department, or hunt beyond such distance as may be specified for that blind or post.
- (4) Hunt or shoot from any dike, trail, safety zone, or retrieving zone posted against such use.
- (5) Hunt in designated retriever dog zones or areas without a retrieving-type dog with an individual or party.
- (6) Leave the area without returning their hunting permit and submitting all game taken for examination, unless directed to do otherwise by a posted sign or by instructions printed on their permit to hunt. Check-in times will be posted on area signs, indicated on the hunting map for each area, or on the hunting permit issued.
- (7) Trap on any area posted "State Game Area - Hunting by Permit Only" or "Wildlife Refuge - Do Not Enter" in zones 2 and 3 without a permit from the district wildlife supervisor or their representative.
- (8) Use dogs for hunting or retrieving in areas posted against such use.
- (9) It shall be unlawful to take an animal over bait except trapping for furbearing animals. For the purposes of this regulation, "bait" means a substance composed of grain, fruit, vegetables, or other food placed to lure or entice animals. This does not apply to standing farm crops under normal agricultural practices, or other natural growing grains, fruits, or vegetables.
- (10) Possess or fire from a shotgun more than 15 shells or 3 times the daily duck bag limit in any hunting zones posted at the area headquarters "Hunting Zone Shell Limit," as designated by the area manager.
- (11) Possess or fire from a shotgun during the duck season shells with shot size greater than no. 1 in any hunting zones posted at the area headquarters "Hunting Zone Shot Size Limit," as designated by the area manager.

History: Eff. Mar. 31, 1989; Am. 16, 1990, Eff. Sept. 1, 1990; Am. 14, 1996, Eff. Sept. 1, 1996; Am. 9, 1998, Eff. Sept. 1, 1998; Am. 13, 1999, Eff. Sept. 1, 1999; Am. 15, 2000, Eff. Sept. 1, 2000.

13.3 Fish Point wildlife area; Nayanquing Point wildlife area; Pointe Mouillee state game area; Shiawassee river state game area; St. Clair flats wildlife area (Harsens Island unit); additional rules.

Sec. 13.3. On those portions of the Fish Point wildlife area, Nayanquing Point wildlife area, Pointe Mouillee state game area, Shiawassee river state game area, and St. Clair flats wildlife area (Harsens Island unit) posted "State Game Area - Hunting By Permit Only," the following rules shall apply:

- (1) A person shall not take an animal except in the location(s) and within the time period specified on the hunter's permit.
- (2) No person may possess or fire from a shotgun more than 25 shot shells during any hunting period, except as otherwise

THE WILDLIFE CONSERVATION ACT ORDER

specifically provided in this order.

(3) Hunting of any animal is prohibited from September 1 to the opening of the general waterfowl season unless authorized by the director.

(4) Persons issued hunting permits are restricted to the lawful taking of waterfowl and small game except those permits issued specifically for bow and arrow or firearm deer hunting.

(5) Hunting shall be by reservation only on those days and units designated and published by the area manager. The area manager shall determine the number of reserved hunting permits to be issued. Applicants may not apply for more permits than authorized per hunter. The hunting reservation is not transferable from the original applicant to any other person.

(6) To hunt together as a party in a party permit area, all members of a group must register together prior to the drawing, except that a single hunter not participating in the drawing may join a party of 2 or 3 if that hunter's completed registration card is filed in the check station at the time of the drawing and the maximum party size is not exceeded. Party members must hunt together in their assigned permit area.

(7) During a day designated and published by the area manager as "Youth Day(s)," hunting parties made up of at least 1 youth, 12 to 16 years old, accompanied by 1 or 2 parents, guardians, or other persons authorized by the parent or guardian who is 17 years of age or older, with appropriate licenses and stamps, shall be given first priority for hunting permits.

History: Eff. Mar. 31, 1989; Am. 16, 1990, Eff. Sept. 1, 1990; Am. 14, 1991, Eff. Sept. 1, 1991; Am. 17, 1993, Eff. Sept. 1, 1993; Am. 6, 1997, Eff. Sept. 1, 1997; Am. 13, 1998, Eff. Sept. 1, 1998.

13.4 Repealed, Am. 11, 2002, Eff. Sept. 1, 2002

Publisher's note: The repealed section pertained to additional rules at the Crow island state game area.

13.5 Repealed, Am. 11, 2002, Eff. Sept. 1, 2002

Publisher's note: The repealed section pertained to additional rules at the Maple river state game area.

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13.9 Shiawassee river state game area; rules.

Sec. 13.9. The following rules are established on those portions of the Shiawassee river state game area, Saginaw county, posted "State Game Area - Hunting by Permit Only" being all or portions of sections 13 to 16, 21 to 29, 32 to 35, T11N R3E; sections 2 to 4, 9 to 11, T10N R3E; and sections 11, 12, 14, 19, T11N, R4E:

(1) Canada goose hunting during the regular goose season will be permitted during morning and afternoon hours on weekends, but during weekdays shall be restricted to morning hours only.

(2) During the firearm deer season, a person hunting deer under a valid permit may use any gauge of shotgun but shall use only single ball or rifle slug loads.

(3) Persons issued a hunting permit for deer shall return that permit to the check station immediately upon completion of the hunting period for which it was valid or upon termination of deer hunting, whichever occurs first.

(4) Permits are only valid for the hunting zone for which they are issued.

(5) It shall be unlawful to camp or attempt to camp on designated parking areas or on any lands posted "State Game Area - Hunting by Permit Only" from October 1 to January 1.

(6) A person shall not take or attempt to take an animal in the Shiawassee river state game area at any time without a permit issued by the St. Charles field office of the department of natural resources except for spring turkey hunting and the early goose season.

History: Eff. Mar. 31, 1989; Am. 13, 1990, Eff. Sept. 1, 1990; Am. 16, 1990, Eff. Sept. 1, 1990; Am. 6, 1997, Eff. Sept. 1, 1997; Am. 13, 1998, Eff. Sept. 1, 1998; Am. 13, 1999, Eff. Sept. 1, 1999; Am. 15, 2000, Eff. Sept. 1, 2000.

Chapter III - State Game and Wildlife Areas

3.1 Managed state game areas and wildlife areas, prohibited conduct.

Order 3.1. A person shall not do any of the following on the managed state game areas and wildlife areas designated in section 13.1 of the wildlife conservation act order:

- (1) Construct a shooting pit or permanent blind.
- (2) Occupy any hunting zone, area, post, or blind, other than designated on the permit issued to them by the department.
- (3) Park outside of designated parking areas or on areas posted against such use.
- (4) Have on their person, or carry into the area posted "State Game Area -Hunting by Permit Only," any metal or glass beverage container commonly used to contain juices, soft drinks, or an alcoholic beverage, but excluding "thermos type bottles" during the period September 1 through January 1.
- (5) Camp or attempt to camp on designated parking areas or on any lands posted "State Game Area - Hunting by Permit Only" during the period October 1 to the end of the migratory bird season, excluding fish point WA, Tuscola county, unless authorized by the director.
- (6) Operate or use an amphibious or all-terrain vehicle or any other motor-driven vehicle in any area posted "State Game Area - Hunting by Permit Only," or any area posted against such use, except for vehicles authorized by the department.
- (7) Fish in any area posted against such use.
- (8) Operate a motorboat at other than a safe, no-wake speed, or in any area posted against such use, in those managed hunting areas listed below and posted "State Game Area - Hunting by Permit Only":
 - (a) Fish point WA
 - (b) Nayanquing point WA
 - (c) Pointe Mouillee SGA
 - (d) Shiawassee river SGA
 - (e) The Harsens island unit of the St. Clair flats WA

History: Iss. Sept. 17, 1993

LAND USE ORDERS OF THE DIRECTOR

3.7 Shiawassee river state game area, Saginaw county, prohibited conduct.

Order 3.7. A person shall not do any of the following on the lands and public waters of the Shiawassee river SGA, Saginaw county:

- (1) Enter, use, or occupy the area between the hours of 11:00 p.m. and 4:00 a.m., unless permitted by posted notice or special use permit.
- (2) Possess or consume an alcoholic beverage.
- (3) Build or use any ground fire of any kind.

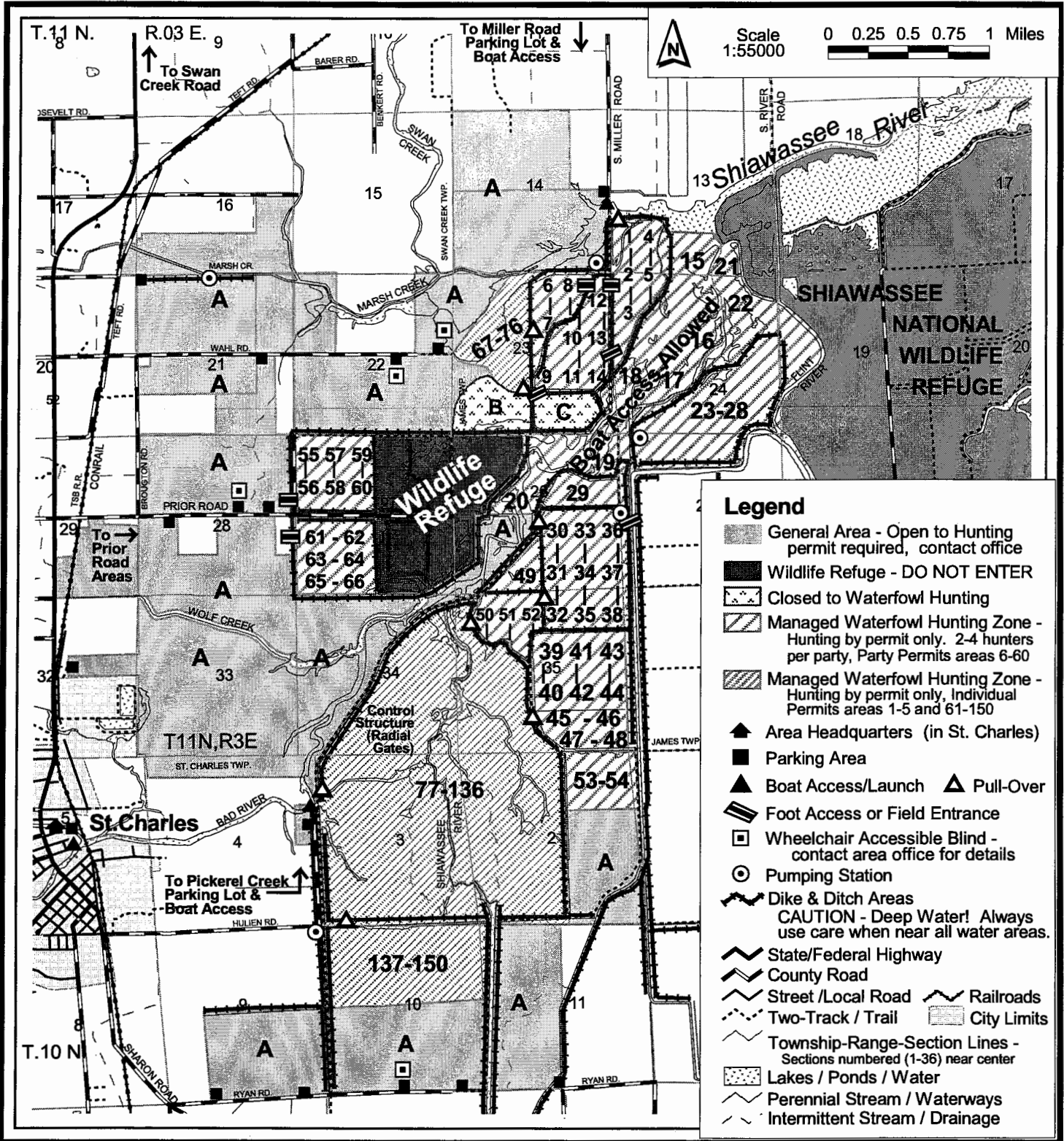


State of Michigan

MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

SHIAWASSEE RIVER STATE GAME AREA

SAGINAW COUNTY, MICHIGAN



Portions of this area designated Watchable Wildlife viewing areas.

For more information on this and other areas, contact DNR offices or visit on the internet at: <http://www.michigan.gov/dnr>

Hunter Monies Made This Area Possible



SHIAWASSEE RIVER STATE GAME AREA SPECIAL USE AND HUNTING RULES

(All other applicable State Land Use rules and regulations apply, unless modified by the text below. To review the standard "State Land Rules for State Lands Other than State Parks and Recreation Areas" (IC 2598, rev. 6/29/2000), see the back of most State Game/Wildlife Area maps (except those with Special Use and Hunting Rules); the maps, rules and regulations plus additional details, and more information on this and other areas are available at DNR Offices or on the internet at: <http://www.michigan.gov/dnr>)

REGARDING WATERFOWL HUNTING:

- Reservations by mail are required to hunt during the first weekend of regular waterfowl season. Contact your local DNR office between August 1 to 28 for information. St. Charles Field Office is at: 225 East Spruce, St. Charles, Michigan 48655, and phone: (989) 865-6211.
- On all other dates the check station is open from 4:30 a.m. to 5:00 p.m. to check game and issue hunting permits.
Drawings will be held each day at 5:00 a.m. and 11:00 a.m.
- Parties of 2 to 4 hunters may choose all areas and individuals may choose areas 1-5, 61-66, or 67-150.
Parties of 2 or 3 may register one absentee member with that hunter's license.
- Only hunters not participating in the drawing may join an individual or party after the drawing. Registered hunters that passed or forfeited their draw will be considered as having participated in the drawing, and may not join another party. Parties may add hunters after the draw up to the maximum of three. After the draw, parties are not allowed to split and take separate zones.
- Waterfowl morning permits will be issued until 10:00 a.m. and afternoon permits will be issued until 4:00 p.m.
Small game and deer permits will be issued during check station hours.
- On any day that you have participated in a morning drawing and are issued a hunting permit, you may not participate in the afternoon drawing, but may be issued an unused permit. If participated in the morning draw, you may not add on to a party that went through the afternoon drawing.
- Parties must hunt at their chosen post or strip, and leave only to retrieve downed game. Permit holders must carry a valid permit on person during hunt (must show to DNR personnel if asked). Permit holders must return their permits to the designated location within two hours after their hunt. All game taken must be reported and/or presented for examination.
- During the regular waterfowl season, each hunter is limited to 25 shells. During goose-only season, each hunter is limited to 15 shells. It is unlawful to possess or use shot shells loaded with any material other than steel or any other state and federally approved non-toxic shot; BBB is the largest shot size permitted.
- Canada goose hunting is permitted during morning and afternoon hunts on weekends, but during weekdays is restricted to morning hours only during the regular waterfowl season.
- A \$4.00 daily or \$13.00 seasonal managed waterfowl area permit is required to hunt waterfowl on the area.

REGARDING DEER HUNTING:

- Deer hunting is by permit only. From Oct. 1 to the end of waterfowl season, archery and muzzle-loading deer hunting is permitted on the entire area except the state wildlife refuge. Firearm deer hunting is permitted in the "A" areas/zones and 53-54 only. The entire game area, except the state wildlife refuge, is open from the end of waterfowl season to the end of deer season. For permit information, contact the office between Aug. 15 and Sept. 5.
- Can erect tree stands on the first day of hunt and can leave up until the end of hunt. Make sure stands are correctly labeled as required.
- Scouting is allowed from January 2 through September 30.
- A \$4.00 daily or \$13.00 seasonal permit is required to hunt deer on the area.
- You must carry your permit with you during your hunt period. Permit must be returned within 48 hours after the last day of the hunt period.
- Buckshot is prohibited. Baiting is prohibited.

REGARDING SMALL GAME HUNTING: Small game hunting is permitted only in "A" areas from September 15 until the end of the waterfowl season. All hunting is by permit only. Special permits will be issued for raccoon and coyote hunting during evening hours. The area is closed to small game hunting November 15-30 and during the muzzleloader season.

REGARDING TRAPPING: Trapping of furbearers is by permit only. Information may be obtained by contacting St. Charles Field Office.

THESE ACTIVITIES ARE PROHIBITED:

- Hunting or shooting from any dike, road or trail, safety zone, buffer zone, or retriever zone (such as near Refuge, with exception of woodchuck hunting – contact St. Charles Field Office for clarification).
- Constructing a shooting pit or permanent blind. Portable blinds are permitted, but must be removed at end of each hunt.
No screw-in steps. Make sure all stands or blinds are correctly labeled as required.
- Using an amphibious vehicle, all-terrain vehicle or any other motor driven vehicle while in the managed hunting area.
Outboard motors are permitted, but they must operate at safe, no-wake speeds.
- Trapping, except under written permit - for information contact the office. Camping during April 1 to Dec. 31.
- Taking cans or glass bottles into the game area and permit zones. Fires are also prohibited.
- Parking outside of designated parking areas. See map for parking lot locations, or contact the office for information.
- Entering the game area during the waterfowl season, except by permit.
- Hunting without possessing and carrying on your person, a valid special hunting permit issued by the St. Charles Field Office (except for turkey hunters). If you have questions about permits or about your need for one, call the office (info. provided above).
- The area is closed from 11:00 p.m. until 4:00 a.m.
- May not enter the State Wildlife Refuge from September 1 through January 1 without written authorization from the St. Charles Field Office.
- Other Rules and Regulations for the State Game Area may be posted in the area; look for additional signs or notices to insure you have a safe hunt. If you have any questions on your proposed activities, contact the St. Charles Field Office.

CAUTION: Use care near all open water areas; some of these areas may contain deep water, depending on season and recent rainfall.

BE A SAFE HUNTER - A safe hunter obeys laws governing hunting and boating, is alert to any conditions hazardous to personal safety of the hunter and others.

(Rev. 7/2003)

Equal Rights for Natural Resources Users

The Michigan Department of Natural Resources (MDNR) provides equal opportunities for employment and access to Michigan's natural resources. Both State and Federal laws prohibit discrimination on the basis of race, color, national origin, religion, disability, age, sex, height, weight or marital status under the Civil Rights Acts of 1964 as amended (MI PA 453 and MI PA 220, Title V of the Rehabilitation Act of 1973 as amended, and the Americans with Disabilities Act). If you believe that you have been discriminated against in any program, activity, or facility, or if you desire additional information, please write the MDNR, Human Resources, P.O. Box 30028, Lansing, MI 48909-7528, or the Michigan Department of Civil Rights, State of Michigan Plaza Building, 1200 6th Street, Detroit, MI 48226, or the Office for Diversity and Civil Rights, U.S. Fish and Wildlife Service, 4040 North Fairfax Drive, Arlington, VA 22203.

For information or assistance on this publication, or for information about other State land areas, contact: MDNR, Wildlife Division, P.O. Box 30444, Lansing, MI 48909-7944, -or- through the internet at "<http://www.michigan.gov/dnr>". TTY (teletype): Michigan Relay Center 1-800-649-3777. This publication is available in alternative formats upon request.

Village of
St. Charles, Michigan

Michigan Department of Natural Resources
Wildlife Division

**SITE SPECIFIC AGREEMENT
(Waterfowl Observatory)**

The Village of St. Charles proposed constructing a Waterfowl Observatory on a portion of the Shiawassee River State Game Area, an area managed by the Wildlife Division of the Michigan Department of Natural Resources (MDNR). In furtherance of the parties' mutual interests in wildlife habitat and education, the parties hereto have executed this Agreement for the development of the St. Charles Waterfowl Observatory.

I. SCOPE OF THE AGREEMENT

A. The MDNR - Wildlife Division agrees:

1. To work with the Village of St. Charles preparing development plans and specifications for the Waterfowl Observatory.

The construction site is located in Section 5; T10N, R3E; Latitude 43° 21', Longitude 84° 05', all being property of the State of Michigan for the use and benefit of the Department of Natural Resources. A further, more particular description of the area to be developed is set forth in the St. Charles Waterfowl Observatory development plans.

2. To inspect the structure and reissue a use permit at least once a year to determine if operation (e.g., structure soundness, appearance, maintenance, stocking, and quality of life for enclosed birds) is in accordance with the St. Charles Waterfowl Observatory development plans, this Agreement, and the On-Site MDNR - Wildlife Manager.

3. To provide the Village of St. Charles a written request for removal of the Waterfowl Observatory if the MDNR - Wildlife Division is unsatisfied with program performance (e.g., inappropriate maintenance, appearance, stocking, quality of life for enclosed birds, public visitation).

B. The Village of St. Charles agrees:

1. To provide a long-term management plan for the St. Charles Waterfowl Observatory for consideration and approval by the MDNR - Wildlife Division.
2. To provide all of the funding necessary to complete construction in accordance with the St. Charles Waterfowl Observatory development plans and this Agreement.
3. To construct all physical works and other aids necessary to implement the terms and conditions of the St. Charles Waterfowl Observatory development plans and this Agreement.
4. To provide the Wildlife Division with a dated letter of completion upon inspection and approval of the completed St. Charles Waterfowl Observatory.
5. To provide at its expense routine rehabilitation, annual operation, and maintenance necessary to maintain the continuing viability and functioning of the developments made pursuant to the St. Charles Waterfowl Observatory development plans and this Agreement.
6. At its expense, to continue to administer and manage the St. Charles Waterfowl Observatory for a minimum of ten years.

7. At its expense, to remove the St. Charles Waterfowl Observatory and return the site to its appearance before the construction of said Waterfowl Observatory. Removal may come at the request of the MDNR - Wildlife Division (see I.A-3 and C-4) and must be approved by the MDNR - Wildlife Division.

C. The MDNR - Wildlife Division and the Village of St. Charles mutually agree:

1. To consider any substantial changes in the development plans as the implementation of the St. Charles Waterfowl Observatory development plans progresses.
2. To cooperate in providing appropriate wording on educational signs about wetland/waterfowl ecology and a sign for recognition of groups/agencies who contribute significantly to the project.
3. To cooperate in a final inspection prior to acceptance of the project as set forth in the St. Charles Waterfowl Observatory development plans and this Agreement.
4. Every ten years, to evaluate the operation plans of the St. Charles Waterfowl Observatory and its contribution to the community. In the event the MDNR - Wildlife Division is not satisfied with the Village of St. Charles' performance regarding the St. Charles Waterfowl Observatory, they can request the structure be removed.

II. EXECUTION OF AGREEMENT

IN WITNESS WHEREOF, the parties hereto have executed this Site Specific Agreement as the date and year written below.

VILLAGE OF ST. CHARLES

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WILDLIFE DIVISION

BY: Thomas W. Baird

BY: Richard Elder
Supervisor, Farm Urban/Wetlands Sec.
Wildlife Division

TITLE: Village Manager

TITLE: _____

DATE: 7/12/89

DATE: July 12, 1989

7/11/89

SRSGA Master Plan Public Meeting—Summary of Comments

May 12, 2001, 10:00 AM

Hartley Outdoor Center, St. Charles

Barbara Lercel, Wildlife Biologist

- Leave South Prior as corn. Do not want permanent blinds, have to provide cover for hunting (possibly sorghum). If South Prior is converted, it will take away individual hunting zones (flooded crop zones).
- Concentrate on the Flooded Woods to improve moist soil areas. One comment was that the Flooded Woods was flooded too soon in the fall.
- More acceptance to convert the Triangles Unit to moist soil. If do convert, plant cover strips for hunting zones.
- Request to post foot, paddle, and motor accessible areas in the check station.
- Post kill chart once a week on Tuesday.
- Trapper commented that coon trapping should be allowed during the regular season (i.e., during the duck hunting season). Would like to see a written trapping plan.
- Recommendation to follow previous Master Plan (i.e., would like to see few changes from previous plan) and include NAWCA commitments.
- SFCHA would like to construct a low level dike in zones 53-54 to increase flooding and water control over that impoundment. They would fund project if necessary.
- There were comments that access needs to be improved in the flooded woods. Also, control of purple loosestrife and willow needs to be more intense. Would like to see bulldozed openings in the purple loosestrife spread out more.
- 10 individuals attending (majority of them SFCHA members).

Other written comments received outside of the Public Meeting:

- Enjoy opportunity to archery deer hunt outside of pre-registered hunts.
- One individual had the following comments: opposition to open archery hunting periods, give free doe permits to hunters that apply for hunts, open hunts only increase buck harvest and sex ratios are very skewed towards does, there should be no buck harvest before pre-registered hunts begin, reduce doe population and increase bucks. This individual offered the following suggestions: mandatory deer check in, more developed survey form, no open hunting, change hunt dates, yearly changes in buck and doe harvests, doe permits given by St. Charles field to the hunters that will take does, quality deer management, field officers in field contacting hunters, and use Federal lands management system.
- Ban waterfowl hunting from the rear of the fields (back side). If don't ban, require hunters to set their decoys at least 100-200' away from another parties' set.

Appendix 15. Summary and Response to Public Comments from Open House and Comment Period

Public Open House, August 25, 2003 at the Bay City State Recreation Area's Visitors Center

One individual attended representing the Shiawassee Flats Citizens and Hunters Association.

COMMENTS

The individual felt that the Strategic Plan was deliberately ambiguous and wanted stronger wording that the primary objective of the SRSGA was for waterfowl management. He also felt that maintaining SRSGA as a managed waterfowl area should be listed in the objectives. Outside of the diked areas, his group was agreeable to management for species other than waterfowl. While the individual understood that this is a Strategic Plan, he would still like to see cover maps and management specifics to reiterate the commitment for a managed waterfowl area.

RESPONSES

The author felt that the plan sufficiently emphasized the area's importance for waterfowl management and the Cooperative Agreement with the U. S. Fish and Wildlife Service clearly stated the primary objective for the Shiawassee Flats Wildlife Management Area was for migratory waterfowl and related hunting opportunities (see I. Introduction: History of the Area and Historical Land Use, II. Management Goals and Objectives: Wildlife Restoration and Management and Wildlife Related Recreational Activities, and Appendix 2). A Wildlife Related Recreational Activities objective was added that addressed maintaining SRSGA as a managed waterfowl area. Cover maps and detailed management practice schedules will be made available when completed. The Wildlife Biologist will continue to work closely with stakeholder groups to communicate management plans.

30-day Comment Period Following Public Open House

Two written responses were received within the 30-day period. One response was from an individual and the other the President of the Wolverine Sportsmen's Club.

COMMENTS

The individual's comments included criticism that the Strategic Plan does not address the riparian rights of property owners relating to the operation of the radial gates structure. Another comment was that the plan didn't address the log jam in the flooded woods that is causing siltation of the old channel and creation of new channels through the impoundment. The other primary concern voiced was that the fields that are flooded for waterfowl hunting in the fall should remain dry to meet flood control objectives.

RESPONSES

The author believes that operation of the radial gates does not impact riparian property owners' rights. There are alternatives currently being investigated to improve water flow into the river system when the radial gates are closed. This is especially important during

low water/low river flow periods. The log jam in the flooded woods that is referred to is creating new channels. The author views this as an evolving river system. Methods to remove the log jam were identified in the past, however high costs and poor equipment access were identified as barriers. Management of farmed impoundments (i.e., planting, flooding in fall, draining in winter) and flooded woods is consistent with the Saginaw Valley Flood Control Plan (see I. Introduction: Management Area History and Historical Land Use) and is acceptable under Michigan's floodplain laws and regulations. The system of dikes, ditches and pumps reduces the extent of the floodplain until water levels reach 589 feet above sea level (i.e., the highest level of all dikes) as designated in the Flood Control Plan. It is important to note that the author has discussed all of these issues in person with the individual.

COMMENTS

The President of the Wolverine Sportsmen's Club provided extensive written comments. The primary concerns expressed that the author thought relevant to the content and purpose of the Strategic Plan are listed here. The individual does not feel that there is equal solicitation for public input. One comment regarding the operation of the radial gates was similar to the one above and included concerns over flood management when the gates were closed. There was also concern that the practice of flooding the flooded woods in the fall was killing trees. There were concerns noted on the deer management in DMU 173. For example, the individual feels that the aerial surveys are inaccurate, as are the population estimates, that there is a liberal amount of antlerless permits, and that population goals are too low. A comment was made that there are inconsistencies on access to the area for the public (e.g., ORV access and other unauthorized access). Concern over the above-mentioned log jam in the flooded woods and the siltation it is causing was noted. The individual questioned maintenance of roads on the area. He would also like to see more public meetings. The author feels that the individual had disagreement with one of the primary objectives of the SRSGA being management for waterfowl and waterfowl hunting opportunities.

RESPONSES

Because the number of comments was extensive, a written response will be prepared and sent to the individual addressing all comments. While all comments were noted and considered, the author did not feel that many of the comments directly pertained to the SRSGA Strategic Plan and its long-term objectives, but more to the day-to-day management of the area. Responses to the comments noted above follow:

Regarding public input, please see IV. Public Input. Input for this Strategic Plan was solicited from the public as a whole through the Public Open House and 30-day comment period. Local stakeholder groups were contacted directly and provided a copy of the draft plan for their interested members to comment.

Regarding operation of the radial gates and concerns over flood management, please see the response above to the other individual that commented during the 30-day period.

Regarding management of the flooded woods and tree death, please see III. Management Activities: Water Management. The flooded woods is impounded with water between September and December, after each growing season. Cover types in the flooded woods will be monitored to determine if management activities are adversely affecting native floodplain forest species.

Regarding deer management in DMU 173, efforts have been made to improve the aerial survey and its accuracy (e.g., GPS transects and consistent survey crew). The winter survey is currently the best available population estimator. The antlerless quotas are determined with staff from the SNWR and input from the SFAC. While no specific population goals are identified in the strategic plan, antlerless quotas are set based on population goals previously agreed upon by the above parties. An ideal forum to discuss re-evaluation of those goals is through the SFAC Deer Committee.

Regarding ORV access and other unauthorized access, ORV use is prohibited on SRSGA. An objective listed under the Facilities Management and Maintenance Objectives is to "Control unauthorized vehicle traffic". Special Use Permits will continue to be issued for locally approved activities that fall outside of the area's rules and regulations (see II. Management Goals and Objectives: Regulation of Non-Wildlife Related Recreational Opportunities).

Regarding the log jam in the flooded woods, please see the response above to the other individual that commented during the 30-day period. Management activities identified on SRSGA that will assist in decreasing the amount of sedimentation in the river system include increasing width of filter strips, gradually dewatering fields and impoundments, leaving 200' of uncut forest along riverine corridors, and continuing restrictions on fall plowing (see Facilities Management and Maintenance Objectives).

Regarding road maintenance, one of the Facilities Management and Maintenance objectives is to "Provide access to the area through well maintained dikes, roads, and parking areas". Many of the roads that enter the area are County roads and are maintained by Saginaw County.

Regarding desire for more public meetings, the Shiawassee Flats Advisory Council and Shiawassee Flats Citizens and Hunters Association both hold an annual public meeting for comments regarding management at SRSGA and SNWR. In addition, these groups meet monthly throughout most of the year, with staff from SRSGA attending. This is an ideal forum to discuss day-to-day management of the area.

As stated in I. Introduction: History of the Area, the Cooperative Agreement between the U.S. Fish and Wildlife Service and the MDNR for the Shiawassee Flats Wildlife Management Area identified waterfowl management (including refuge and hunting opportunities) as the primary objective. Development of the Saginaw County Goose Management Unit and designation of the area as a Managed Waterfowl Area further illustrated the area's importance for waterfowl management and hunting.

COMMENTS

A verbal comment was also submitted by FMFMD personnel during the 30-day period. The request made was to include a paragraph under Land Management that discussed a Wild Fire Plan and what degree of fire suppression was needed. The importance of documentation of access areas was also noted.

RESPONSE

A subheading was added under Land Management titled Wild Fire Plan. It recognizes the need for such a plan and the identification of areas for fire suppression and access to those areas. With assistance from FMFMD personnel, such a plan will be written and included as an addendum to the SRSGA Strategic Plan in the future.