

Strategic Management Plan for:

ALLEGAN STATE GAME AREA
Allegan County, Michigan



Michigan Department of Natural Resources
Wildlife Division
Southwest Management Unit
Allegan State Game Area Field Office

ALLEGAN STATE GAME AREA STRATEGIC PLAN
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to the public.

I. INTRODUCTION

1. Purpose of the Plan

This plan is intended to provide overall management direction for the Allegan State Game Area (ASGA) and to assure the legal obligations for wildlife restoration and management are fulfilled. This plan will guide the management activities necessary to achieve the desired future conditions set forth in this plan. Obligations from the funding sources used to acquire and manage this area require that ASGA be maintained for the purposes of managing wildlife populations, habitats, and associated recreational hunting and trapping. Other related activities and uses of the area that complement or do not conflict with wildlife management have been considered and incorporated where appropriate. Although public input was encouraged and considered in developing this plan, given the requirements for the area this is not necessarily a consensus document.

2. Project Location and Boundary

ASGA is located entirely within Allegan County in southwest Michigan (Figure 1). The game area currently consists of approximately 50,000 acres, but further acquisitions anticipated within the project planning boundary. This boundary incorporates those lands important to the ability of the game area to function for its intended purpose. New acquisitions will occur within the project planning boundary when there are willing sellers and available funds.

ASGA is within an hour's drive of many metropolitan areas, consequently the area is readily accessible to well over one million people. Located within the Kalamazoo and Black River watersheds, it is 35 miles from Grand Rapids, 30 miles from Kalamazoo, 40 miles from Benton Harbor, and 15 miles from Holland. The Game Area is served by Highway I-196 from Grand Rapids to Benton Harbor, US-131 from Grand Rapids and Kalamazoo, via M-222 and M-89, and M-40 from Holland. ASGA is the largest state game area in Michigan and is an important component of the public land system in southwestern Michigan designed to provide for wildlife habitat and the associated recreation of hunting and trapping.

3. Area Description

a) Environmental Conditions and Biotic Inventory

ASGA is included within Albert's (1995) Allegan Subsection of Michigan's Southern Lower Peninsula Section regional ecosystem. The game area spans two sub-subsections, the Southern Lake Michigan Lake Plain and the Berrien Springs (Figure 2). Albert (1995) separates ecosystem sections primarily based on long-term climate conditions. At the subsection level physiography, major land forms, are used to determine boundaries. At the sub-subsection level soil types are combined with physiographic characteristics to determine boundaries.

The Allegan Subsection consists of a narrow band of dunes and flat lake plane along Lake Michigan and both end and ground moraine farther inland (Albert 1995). The

majority of the game area is contained in the Southern Lake Michigan Lake Plain Sub-subsection. The game area occupies that portion of this sub-subsection that contains primarily lacustrine deposits to the west with both fine-textured end and ground moraines that have been reworked by water (Albert 1995) to the east. The resultant topography is primarily flat grading to some rolling hills from west to east. The game area does not encompass any of the Lake Michigan shoreline or related sand dunes.

Historically this area contained beech-sugar maple forests on richer, poorer drained soils transitioning to oak-hickory forest, oak savanna, white oak-white pine forests and barrens on progressively well drained sandy soils. The most extreme portions of barrens supported inclusions of dry sand prairie. Coastal plain marshes, wet prairies and lowland swamps formed in broad depressions on both the flat sand lake plain and the ground moraine (Albert 1995).

The Berrien Springs Sub-subsection consists entirely of end and ground moraine dominated by rolling hills and higher elevations than the sub-subsection to the west. Unlike the lakeplain, the soils in the moraines of this sub-subsection contain loam. Most are moderately well drained or well drained sandy loam, loam and silt-loam. These moraines were typically dominated by beech-sugar maple forests with swamp hardwoods, tamarack, wetland shrubs and bogs in kettle depressions (Albert 1995). Only a small portion of the game area occurs in this sub-subsection including the far eastern portions of the Goose Lake and South Eastern Areas and the Kalamazoo River Bottomlands Unit. Also included are a series of dams in the Kalamazoo River from the Otsego to the city of Plainwell.

The actions of humans on ecological processes have had a major impact on the vegetative communities in this area. Before European settlement, Native Americans made extensive use of fire to clear areas for habitation and to flush game. The frequency of fires on the landscape was dramatically increased over naturally started fires. As a result, this area became a shifting mosaic of plant communities along a successional cycle of open grasslands and dry sand prairies, barrens, savannas and closed canopy forests. Before European settlement, circa 1800, the area was dominated by the more open communities of grasslands, barrens and savannas because of the high fire frequency from Native American activities (Figure 3).

Conversely, since European settlement, fire frequencies have been greatly reduced, even below historical levels, through active fire suppression programs. As a result, most of the grasslands, barrens and savannas were allowed to transition to closed canopy forested communities. European settlement also brought agriculture to the area. The poorly drained lakeplain areas were heavily ditched, tilled and drained to allow for cropping in the relatively richer soils. Currently, the landscape is dominated by agriculture on poorly drained soils and oak/hickory forests on the well drained droughty soils. Few remnant open communities of grasslands, barrens and savannas remain.

ASGA has been the subject of other ecoregional planning efforts because of its size, position on the landscape and its relative wealth of native biodiversity. Most notably of these efforts have been by The Nature Conservancy (TNC) (Legge 2000), and efforts in

ecosystem planning are ongoing within MDNR. Objectives from these planning efforts are incorporated into this plan (Table 1) and likewise future county-wide and ecoregional planning efforts for both public and private lands will incorporate objectives from this planning effort.

Table 1. Management Direction from an Ecoregional Perspective.

Community Type	Benefiting Species	Recreational Opportunities
Upland white oak/white pine forest	Forest interior birds, deer, squirrels, turkey, raptors, snakes	Deer, turkey and squirrel hunters, birders, hikers, sightseers
Riverine floodplain	Forest interior birds, raccoon, deer, turkey, raptors, waterfowl, wetland birds, furbearers, turtles, sport fish, non-game fish, frogs, wetland invertebrates, snakes	Deer, turkey and waterfowl hunters, trappers, birders, boaters/canoists, fishermen
Oak savanna/dry sand prairie	Endangered and threatened Lepidoptera, turkey, deer, grassland birds, squirrels	Deer and turkey hunters, hikers, sightseers
Coastal plain marsh/lake plain prairie	Endangered and threatened plants, frogs, salamanders, turkey, deer, raccoon	Deer and turkey hunters, hikers
Grassland	Grassland birds, Canada geese, ducks, raptors, rabbits, pheasants, shorebirds	Waterfowl, rabbit and pheasant hunters, birders, sightseers

Owing to its size and diversity of plant communities, ASGA hosts a diversity of animal species. Surveys are continuously conducted to expand abundance and distribution information. Animal species currently known from the game area are listed in Appendix B-F. Data is incomplete on invertebrate species, however, some important species are known from the area. One of the largest remaining populations in Michigan of the federally endangered Karner blue butterfly is found on the area. The Mitchell's satyr butterfly, also federally endangered, has not been recently documented on the area, however, ASGA is within its historic range. State threatened insect species occurring on the area include the Ottoe skipper, Persius duskywing, dusted skipper, frosted elfin, and

b) Cultural History and Current Cultural Context

The prehistoric record contains almost no information on a human presence in the area before 3000 B.C. There are very few archeological sites from this period, which may suggest little prehistoric human use of Allegan County. By 1600 A.D., however, Native American representation in the area included Miami, Potawatomi and Ottawa tribes (Larry Massey pers. comm.). With the arrival of Europeans, these tribes were relegated to scattered lands in the area by the early 1800s. All of the remaining lands were then surrendered from 1823 through 1827; however, some Potawatomi descendents still reside in the area.

European settlement of west Michigan began in the early 1800s. The early settlers were attracted to the area by furs, trapping and trading with local tribes. During this period government surveys of lands under the GLO began. Significant land clearing and settlement by Europeans, however, did not begin until the mid 1800s.

With the extensive logging that occurred from the mid- 1800s to the early 1900's, settlers moved into what is not the game area and attempted to farm the sandy, highly erodible soils. Corn, wheat, oats, and potatoes were popular crops. Many of these settlers, however, could not subsist farming these soils (Johnson, 1880). Acute economic and social problems developed, and relief costs were high. Provision of schools, roads, and other governmental services placed a heavy drain on county and local government units.

The Game Area and surrounding private lands are rich in archaeological and historical sites of both State and local significance (Appendix G). Numerous sites on state land have been documented to date and more are being added each year (Baldwin 1976; Brown and Houdek 1976). In pre-European settlement times, the Kalamazoo River acted as a corridor for Native American movements across southwest Michigan. Several traditional encampment areas have been documented along this route. With logging and early settlement, the river again acted as the primary facilitator of transportation. Locations of a number of river boat landings and settlements are known along the River.

Small communities were established and then abandoned throughout the Game Area. In compliance with the National Historic Preservation Act and as responsible stewards of the state's natural history, game area activities are coordinated with the State Historic Preservation Officer (SHPO) and interested tribes through their Tribal Historic Preservation Officer (THPO). Sites with significant archaeological or historical value are and will continue to be protected. To protect the integrity of these sites, actual locations are not detailed in this plan.

Currently, Allegan County is decidedly rural in character. Rural communities tend to focus around and within public school districts. The Game Area lies within the Allegan, Douglas, Hamilton, Fennville, Plainwell, Otsego and Bloomingdale Districts. Several small towns are included within these districts, including Pearl, Bravo, East Saugatuck, South Monterey, Merson, Pullman, Chicora, Dunningville, Monterey, and New Richmond. Although these communities have individual identities, owing to their rural setting there is also a sense of cohesion. The Game Area contributes to each community's identity in different ways.

According to the Allegan County Comprehensive Growth Plan (Allegan County Planning Commission 1999) human population increased 12% from 1990 to 1998. This growth rate was second only to Ottawa County (19%) in the Southwest Region. The population is projected to grow an estimated 33% in Allegan County from 1990 to 2020 compared to an estimated statewide increase of 12%. Consequently, Allegan County will be among the fastest growing counties in the state.

The plan also noted that the amount of land used for agriculture in the county decreased from 51% in 1978 to 38% in 1996. During the same period, the amount of land in

residential use went from being about equal to the amount of land in recreational use to well exceeding the amount of land in recreational use. Following a similar trend, the amount of land in a forested condition decreased by 30% from 1978 to 1996. These changes in human population density and land use are changing the county from agricultural based to residential based with increasingly fragmented wildlife habitats.

c) Establishment of Area and Land Acquisition History

In 1935, the U.S. Department of Agriculture (USDA) initiated the Allegan Land Utilization Project. Under this project, USDA purchased unprofitable farms allowing the owners to move to areas with soils better suited for farming. Eventually, approximately 35,000 acres of the sandy, west-central portion of Allegan County was acquired by this program. These lands were then managed by the USDA Soil Conservation Service (SCS, now the Natural Resources Conservation Service) with a goal of establishing vegetation that would reduce wind erosion. The SCS operated from a facility within a plant materials nursery on Swan Creek where they maintained an office, packing shed, oil house, garage, workshop, two pump houses and a residence. These buildings have since been dismantled.

In 1940, the management of the area, along with improvements, camp buildings and equipment, was given to the state's Department of Conservation (now Department of Natural Resources). This was accomplished through a 50 year lease with three optional 15-year renewals. The USDA then appointed the US Forest Service as lease custodian, releasing SCS from their responsibilities except for the nursery. The SCS subsequently gave the nursery to the State in 1948.

Land exchanges with the US Forest Service transferred ownership of the area to the state during 1950 and 1951. In return for the Allegan County lands, state lands were given to the US Forest Service in the Manistee National Forest (now the Huron-Manistee National Forest). Most of the formerly federal acreage was dedicated as the Allegan State Forest and management continued by the Forestry Division. The remainder was designated as the Swan Creek Experiment Station, a research unit of the Game Division. In 1949, the Game Division also began acquiring the Fennville State Game Area (now the Fennville Farm Unit of ASGA) using federal funds from grants through the Pittman-Robertson Wildlife Restoration Act.

In 1964 the then 32,522 acre Allegan State Forest, 6,915 acre Swan Creek Wildlife Experiment Station and 3,450 acre Fennville Game Area were combined and rededicated as ASGA. As part of this action, the Conservation Commission (now the Natural Resources Commission) dedicated the newly formed game area to the Wildlife Division. As a state game area, the purpose of ASGA became more focused to provide for wildlife habitat, wildlife populations and the associated recreation of hunting and trapping. As stipulated in the dedication memo the other multiple uses of the area could continue provided monies were made available from the state's general fund to support those activities.

Under the administration of the Wildlife Division, land acquisitions have continued within the project boundary of ASGA. Priority has been given to those remaining privately

owned in-holdings to consolidate land ownership. Parcels bordering existing state ownership have also been prioritized for acquisition. Acquisitions have occurred on a willing buyer/willing seller basis. Funding for acquisitions by the Wildlife Division derive mainly from the sale of hunting licenses and federal monies from Pittman-Robertson Wildlife Restoration Act grants. These funds also provide for the management and maintenance of the area and its facilities.

d) Legislation, Policies and Legal Agreements

Due to its unique origins, ASGA supports a variety of recreational activities that are not normally allowed on state game areas. Wildlife Division inherited these recreational uses of the area from the previous administration of a large portion of the area as a state forest. Wildlife Division has accommodated these uses whenever possible, however, general funds have never been allocated to support these activities. The activities the Wildlife Division can support and administer are constrained by our mission, legislative authority and specific requirements of funding sources. Therefore, some novel solutions have been applied to maintain some of these uses.

In 1970 the state deeded 320 acres on Silver Creek in Sections 2 and 11, T3N R14W, and 114 acres on Littlejohn Lake in Section 31, T2N R13W to Allegan County with the stipulation these lands would be used to provide public camping opportunities. The Allegan County Parks Commission now manages these areas as campgrounds and picnic areas. An indemnification was added to the deed so that should the county ever fail to maintain these areas for camping, ownership of the lands would revert to the state.

A portion of the West Michigan Snowmobile Trail remains on ASGA. The administration of the trail has been given over to the West Michigan Snowmobile Council. The Wildlife Division has entered into a lease agreement that allows all trail maintenance to be conducted by the association. This agreement allows the trail to remain without Wildlife Division having to administer or maintain the trail. The trail can exist because it was established when the area was a state forest on lands that were acquired as state forest. Therefore, neither hunter license fees nor associated federal funds were used to acquire the trail nor are they used for trail administration and maintenance. A similar agreement has been implemented to maintain a cross country ski trail. Similarly, the Department has signed a 25-year lease with Allegan County Parks for management of over 50 miles of horse trails located on non-Pittman-Roberson purchased lands included in the Game Area. This trail system – called the Allegan County Equestrian Trail System, or ETS – is maintained by Allegan County Parks through “bridle fees” collected from trail users and volunteers.

The U.S. Government retains gas and oil rights through deed restrictions on much of the Game Area including all lands acquired under the Allegan Land Utilization Project. The Bureau of Land Management (BLM), United States Department of Interior, administers the Federal mineral rights from the Milwaukee District Office. The Federal Mineral Ownership (FMO) ranges from 75% to 100%, depending on the individual parcel. A FMO

map is currently being developed by the BLM, and a copy will be on file at the Game Area Headquarters when it is completed.

In 1986 two sites on ASGA were added to the Michigan Natural Areas Registry. The Oak Savanna (160 acres) and Crooked Lake (186 acres) Natural Areas are currently co-managed by the Michigan Department of Natural Resources and the Nature Conservancy to promote the preservation of these important Natural Areas. These agreements are on file at the Game Area Office.

Presently, the Allegan County Parks and Recreation Commission operates both Pine Point and Ely Lake Campgrounds under a Memorandum of Understanding between Allegan County and the Department of Natural Resources.

4. Public Use of the Area

ASGA is always open to public use with the exception of certain refuges on the managed waterfowl units. Outdoor recreation is encouraged as it leads to an appreciation of the area and fosters a conservation ethic. Activities that are compatible with or do not conflict with the intended use of the area are generally permitted. Activities that negatively impact habitat or wildlife, however, cannot be allowed. Consequently, use of the area by motorized vehicles, including bicycles, is not allowed except those roads open to public traffic. ORV and bicycle use can cause considerable damage to habitats and leads to excessive soil erosion. New trail development and use of the area by organized groups is also not allowed as this concentrates human activity that can negatively impact habitats and wildlife.

Hunting is the most dominant and important use of the Game Area. Over 40,000 hunter-days are spent on the Game Area each year, with waterfowl hunting accounting for over 20,000 hunter-days, small game hunting over 10,000 hunter-days, archery deer hunting over 5,000 hunter-days, firearm deer hunting over 5,000 hunter-days, and turkey hunting over 2,000 hunter-days. Trapping accounts for less than 1 percent of the combined hunting activity.

There are opportunities for fishing cold-water, cool-water, and warm-water species on and adjacent to the game area. The streams and rivers in and around ASGA support greater opportunities for cold-water fishing than most areas of southern Michigan. They range from resident brook and brown trout fishing in Swan, Bear and Mann Creeks to migrating steelhead and salmon fishing in the Black and Kalamazoo Rivers. The ponds, lakes and some streams support a popular fishery for warm-water species including bluegill, bass, and crappie. Northern pike, suckers and catfish are targeted on the Black and Kalamazoo Rivers. Fishing is a prominent activity on the Game Area, surpassing small game hunting in the number of user days expended.

Recreational camping, an activity not normally permitted on state game areas, is a popular activity at the designated, county operated campgrounds. Over 10,000 camper nights are spent annually at Ely Lake and Pine Point Campgrounds. Additionally, camping throughout the game area is allowed during certain hunting seasons. There are

a variety of restrictions on this type of camping, but it is allowed to promote hunter access to the area. This additional opportunity amounts to over 1,000 camper nights each year.

Additionally, users commonly use the Game Area for boating, canoeing, hiking, wildlife viewing, sight-seeing, target practice, wild-food gathering, swimming, snowmobiling, cross-country skiing, horseback riding, bicycling, and many other miscellaneous uses. Many of these activities are restricted to designated trails during designated portions of the year.

5. Commercial Use of the Area

In general, commercial use of state game areas is not allowed. Some commercial activities are permitted provided they are incidental to and compatible with management activities undertaken to meet wildlife management objectives.

a) Farming

MDNR uses a number of sharecropping agreements with local farmers to efficiently plant food and cover crops for wildlife. These are no-cost agreements where the farmers are required to leave a certain share of the crops standing for wildlife. Shares are determined following guidelines provided by Michigan State University Cooperative Extension Service. Most sharecropping occurs at the Fennville Farm Unit to provide food and cover for migrating waterfowl. Corn is the main row crop planted with wheat, rye, oats, and barley being planted for green graze and small grain yield. Grass hay is also sharecropped at the Farm Unit to provide additional green graze and cover for waterfowl. MDNR benefits from these agreements by not having to provide and maintain the equipment required for this type of farming.

b) Timber

Timber cutting is an important forest management tool used at most state game areas. Timber harvests are a type of treatment used in forest stands. These treatments are used for a variety of reasons including forest regeneration, stand type conversion, removal of undesired species, control of forest pests or pathogens, to provide for forest health and to achieve other habitat management goals. Whenever feasible and compatible with wildlife management objectives commercial harvest of timber is used. Commercial harvests create program income that is used to offset the costs of statewide management and maintenance programs. Commercial harvest contracts are awarded through a department timber sale process that includes an oral auction to maximize income.

Timber sale revenues are deposited into specific accounts based upon the funding source use to acquire the lands where stands to be treated occur. Money is annually budgeted from these accounts to support statewide activities the funds were established for according to state and federal laws and regulations. Timber sale revenue is neither directly available to nor earmarked for use at the game area where it was earned. This

process ensures that timber sales are only conducted for the purposes of achieving wildlife management goals and not used as a method of supporting other game area activities.

c) Minerals

ASGA has few commercially viable mineral resources other than sand. Typically, the mining of sand is not compatible with the intended use of the area and does not occur. Should any future projects be in compatible with wildlife management goals, sand mining would occur according to the department's mineral leasing policies.

d) Gas and Oil

As previously noted, a large portion of the game area was originally acquired by the federal government. Under the land exchange that transferred ownership of these lands to the state, the federal government retained oil and gas rights to most of these lands. Consequently, authority to develop oil and gas resources rests with the BLM. The BLM is currently leasing two active (producing) oil wells on ASGA,. These wells, located in Section 14, Heath Township, are administered under federal lease BLM-A-01851 and assignments. There are no other BLM leases that are currently valid.

Future leases to lands where BLM administers the gas and oil rights will be administered under a Cooperative Agreement (CA) currently being developed by the BLM, MDNR Wildlife Division and Michigan Department of Environmental Quality (MDEQ) Geology Division. The intent of the CA is to promote timely, efficient, and effective compliance with the statutory and regulatory responsibilities of both MDNR Wildlife Division and BLM. The CA will address how parcels will be classified for lease and what, if any, surface development can be allowed to produce the lease. Monitoring, compliance, and enforcement responsibilities will also be detailed in the CA. When completed, the CA will be on file at ASGA Headquarters.

MDNR holds the oil and gas rights on the remainder of ASGA lands. Historically, the oil and gas resources at ASGA have not been sufficient to be economically viable for extraction. Between the late 1940s and mid-1960s, 117 wells on state property were drilled, plugged and abandoned; 95 were dry holes. Future development leases on these lands, if any, will be conducted in accordance to MDNR Procedure #2306. Additionally, no surface development is allowed on those parcels with a federal interest derived from the use of PR funds.

6. Facilities and Infrastructure

Facilities and infrastructure are constructed and maintained for the purposes of achieving management objectives and to properly administer the area. In addition, infrastructure is developed and maintained to provide or restrict types of public access for compatible uses of the area.

The Wildlife Division maintains a complex of six buildings at ASGA Headquarters and four at the Fennville Farm Unit complex. These ten buildings include two office/check

stations, seven equipment/cold storage buildings, and a conference building. Additional buildings are occasionally acquired as the State purchases land to complement the Game Area. Most of these buildings are subsequently removed. FMFMD maintains a building within the headquarters complex to enhance local fire protection. PRB maintains a building complex adjacent to Calkins (Lake Allegan) Dam to construct and service water access sites.

ASGA contains nearly 200 miles of roads and trails. These complement the approximately 100 miles of state highways and county roads that border the game area. Roads and trails that are owned and maintained as part of ASGA include 21 miles of roads open to vehicles, one mile of seasonally open to vehicles, 97 miles of work trails only open to vehicle use by ASGA personnel, 12 miles of work trail open to public use, a 24 mile cross-country ski trail (open for use beginning January 1 each year), a 22 mile hiking trail and a 33 mile snowmobile trail. As previously noted, ASGA staff does not maintain the hiking trail, ski trail and snowmobile trail.

The Echo Point shooting Range in section 24 of T2N-R14W is administered and maintained by ASGA staff. This shooting range off Monroe Road receives continual use throughout most of the year. This location has traditionally been used as a range beginning in the late 1800s.

MDNR strives to make outdoor recreational activities as accessible as possible to persons with disabilities. Because of the generally level terrain and firm, well-drained soils, many area facilities are already user friendly. Both the Game Area Headquarters and the Fennville Farm Unit Headquarters meet Accessibility Guidelines prescribed in the Americans with Disabilities Act (ADA) of 1990. All future upgrades to other facilities will incorporate accessibility features that meet ADA guidelines.

A supplementary list of facilities and infrastructure located on the Game Area can be found in Table 2.

Table 2. Parking Lots, Barriers, and Control Structures.

Type	Amount	Locations
<i>Managed Area Maintained</i>		
Parking Lots	23	Farm Unit
Barriers	1	119th Ave
Water Control Structures	12	3 - Farm Unit, 3- Highbanks Unit, 1- Pine Point, 1- Burton Flooding, 1- CSX RR Flooding, 1-Adams Flooding, 1- Bravo Unit, 1- Swan Creek
<i>Game Area Maintained (Forest Unit)</i>		
Parking Lots	11	Goose Lk., Swan Ck., Tubes, HQ, Ski, Hiking, Gun Range, Snowmobile Staging,
Water Control Structures	3	Ely Lk. Flooding, Crooked Lk., Main Ottawa
Launches	8	Haufman, Pipeline, M89, Echo Pt., Trowbridge, Pine Pt., Ely Lk., Little Tom Lk
Campgrounds	2	Pine Point, Ely Lake (maintained by County Parks and Rec.)
Managed Hunts	6	Highbanks and Bravo Units
Gates	99	
RR Ties	49	
Guardrails	35	
Stumps	153	
Dropped Trees	54	
Rocks	3	
<i>Parks & Rec. Maintained</i>		
Launches	3	Hacklander, Allegan Dam, Pine Ck.
Parking Lots	2	Fire, Parks & Rec.

II. MANAGEMENT GOALS AND OBJECTIVES

1. Management Goal

The overall goal for ASGA is the responsible management the area's wildlife resources. MDNR has adopted an ecosystem management approach to managing the state's natural resources. This plan outlines how the ecosystem management approach will achieve the goal for the area. Key to this approach is to manage habitats on the game area as components of their respective ecosystems to provide for healthy, functioning ecosystems. This is accomplished by managing habitats to support appropriate plant communities and enabling appropriate ecological processes necessary for overall ecosystem health. As a result, these habitats will provide for healthy wildlife populations. Wildlife populations will be managed within these habitats at levels suitable for habitat health and to provide for associated recreation of hunting and trapping in the case of game species and non-consumptive recreation for other species. Other recreational opportunities will be provided and maintained when they help foster a greater appreciation for the area and conservation of wildlife and are compatible with or do not conflict with the ecosystem management goal for the area.

2. Management Objectives

a) Desired Wildlife Community

The game area occurs in two ecosystem sub-sections. Within these subsections there are five major plant community types and associated wildlife species that are the focus of management in this plan. These communities range from prairie with no large trees through savanna and mixed successional stage forest to closed canopy mature forest. The objective is to encompass a continuum of communities with the vegetation spanning the full range of the definition for each community type. The current status of each type is included in Table 3 and the future desired conditions of each type are included in Table 4. Once the desired percentages of the game area for each type are met then the focus will be to maintain these types at that level. Inherent in this management is that the necessary ecological processes to manage these communities along this continuum will be restored and maintained as needed.

Wetland Wildlife

Wetlands vary from seasonally inundated depressions, lakes, river basins, bogs, marshes, fens to impounded wetlands. Wetlands are maintained to benefit a number of plant and animal species that have an affinity for this type. Plant species include buttonbush, willow, smartweed, water milfoil, various sedges and rushes and pondweed. Animal species include Canada Goose, Wood Duck, muskrat, snapping turtle, Great Blue Heron, Osprey, various shorebirds and green frogs. In addition to providing for resident wildlife, these wetlands also provide food and refuge for migrating waterfowl. This function is integrated with compatible functions on the Fennville Farm Unit to manage for migratory waterfowl ASGA. Wetlands provide recreational opportunities for hunters, anglers, birders and sightseers.

Grassland Wildlife

The term grassland has been used to collectively describe both natural communities such as prairies and savannas and human created communities such as hay fields. At ASGA, grasslands can be found on the Forest Unit expressed as oak savannas and oak openings and on the Fennville Farm Unit expressed as open mixed-grasses and crop shared hay fields .

The Forest Unit grasslands are a combination of native and non-native grasses and forbs. Objectives for the Forest Unit grasslands include providing brood habitat for turkeys and grouse, sunning areas for snakes and feeding areas for butterflies and other insects. These grasslands also provide limited nesting habitat for forest dwelling wildlife.

The Farm Unit grasslands contain a mix of native and non-native grass species, some planted for hay. In addition, much of the Farm Unit has been converted to row crops and cereal grains. Planted row crops and cereal grains mimic the vertical structure of grasslands and provide additional habitat for some grassland species of wildlife. The primary objective of the Farm Unit grasslands include providing food and refuge for migratory and winter resident waterfowl that use the Farm Unit each year. A secondary objective is to provide habitat for grassland species, e.g., Ring-necked Pheasant, Canada Goose, Mallard, cottontail rabbit, Upland Sandpiper, Bobolink, Henslow's Sparrow, Sedge Wren, Northern Harrier and Grasshopper Sparrow. The Farm Unit also provides recreational opportunities for hunters, wildlife observers, photographers, and sightseers. Due to the severe decline in numbers of grassland birds throughout the Midwest, maintaining unfragmented high quality grassland is important for maintaining these species.

Mixed Successional State Forest Wildlife

Successional Forest is maintained through practices such as timber harvest and prescribed fire. Objectives for this type include maintaining all ages of forest which are divided into early, mid, and late successional stages. The species of trees and soil types will determine the length of time before management practices are implemented. During the late stages of succession a temporarily closed canopy condition will occur.

Successional Forest Objectives also include maintaining a mix of oak species on oak sites and maintaining oak and white pine on the oak/pine sites. A host of woody and herbaceous plant species also occur naturally within these forest types and will also be maintained. These forest types contain inclusions of other types such as aspen, tulip poplar and herbaceous openings.

Successional Forest is maintained to benefit a number of plant and animal species that have an affinity for these types. Plant species include flowering dogwood and serviceberry. Animal species include Wild Turkey, gray squirrel, whitetail deer, Chestnut-sided Warbler, Indigo Bunting, Ruffed Grouse and Blue-winged Warbler. These plant and animal associations, in turn, provide recreational opportunities for hunters, birders, hikers and mushroom and berry pickers.

Oak Savanna Wildlife

Oak Savanna found on the Game Area is supported on deep sand soils that are excessively well drained and nutrient poor. These are commonly referred to as barrens. The plant community supported by these soils is currently dominated by poorly stocked, very slow-growing black and white oak and white and jack pine. Sassafras dominates the shrub/understory layer and Pennsylvania sedge makes up much of the ground cover. Small natural openings, usually called oak openings, are interspersed throughout this type.

Dry sand prairies are found in association with oak/pine barrens and represent the driest and most extreme of the savanna conditions. Decades of fire suppression have allowed woody species, especially oak and pine, to invade these once open, herbaceous areas converting them into forests.

Oak Savanna is maintained to benefit a number of plant and animal species that have an affinity for these types. Other than oaks and pines, plant species include lupine, big and little bluestem, American Colombo, bird's foot violet, and sand coreopsis. Animal species include Wild Turkey, Red-headed Woodpecker, Eastern Bluebird, Baltimore Oriole, fox squirrel, eastern box turtle, Karner blue butterfly, frosted elfin, persius duskywing, and ottoe skipper. These plant and animal associations provide recreational opportunities for hunters, hikers, birders and sightseers.

Closed Canopy Mature Forest Wildlife

Closed canopy mature forest (potential old growth) includes both upland and lowland types at ASGA. Current old growth stands approximate the structure, composition and function of native forest, therefore, closed canopy forest is not restricted to a single forest type but includes representation from most types included at ASGA.

Closed canopy mature forest is maintained at ASGA to further biological diversity and biological integrity. Retaining unique forest stands furthers this objective. Closed canopy forest is also maintained to provide habitat for species attracted to interior forest conditions. These include gray squirrels, southern flying squirrels, raccoons, Black-and-white Warbler, Worm-eating Warbler, Prothonotary Warbler, Pileated Woodpecker, Wood Duck and Barred Owl. Closed canopy forest conditions provide recreational opportunities for hunters, birders, hikers, and mushroom pickers.

Table 3. Current Status of habitat toward Future Desired Conditions

Habitat Type	Maintenance Stage	Restoration Stage
Wetland	100%	0%
Grassland	48%	52%
Successional Forest	55%	45%
Oak Savanna	32%	68%
Closed Canopy Mature Forest	89%	11%

Table 4. Future Desired Condition of Habitat Structure

Habitat Type	Percent of Game Area
Wetland	9%
Grassland	16%
Successional Forest	41%
Oak Savanna	16%
Closed Canopy Mature Forest	18%
TOTAL	100%

Endangered, Threatened and Special Concern Wildlife

The game area is host to a number of state and federally listed threatened, endangered and species of special concern including most prominently the Karner blue butterfly. Game area portions identified as essential habitat for this insect, primarily oak savanna, will be managed for butterfly habitat (Appendix H). Habitat for other listed species will also be enhanced and protected. Several unique plant communities have been identified that will be maintained including coastal plain marshes that support Atlantic coastal disjunct plant species and a mature oak-pine forest characteristic of those historically present in Allegan County.

Objectives for this group are to follow the objectives detailed in the recovery plans for the respective species. For species where plans are not available, management will follow direction from the Wildlife Division Endangered Species Office, Natural Heritage Program and the best available scientific information for the species and its corresponding habitat.

b) Objectives for Public Use

Providing for public use is an important component of ASGA management. Hunting and trapping are part of the intended use of the area. Other wildlife-related use of the area that is compatible with or enhances the intended use of the area is also encouraged and supported where appropriate. Unfortunately, the demands for non-wildlife related outdoor activities at ASGA continue to grow and in many cases these activities are not compatible with the intended use of the area. Activities that damage wildlife habitat or interfere with

habitat management, negatively impact wildlife populations or interfere with population management or activities that interfere with hunting and trapping are not allowed on state game areas.

Due to the unique origins of ASGA, some public uses are maintained that are not normally allowed on state game areas. Legal and regulatory requirements, however, prevent the wildlife division from administering or supporting these activities with monies derived from the sale of hunting licenses or PR grants. In addition, these activities cannot occur on those parcels that have been added to the game area that were purchased with hunting license or PR grant funds. Without other funding sources available, WD has partnered with local governments and private groups to maintain these historically allowed activities.

Water Access Sites

Given the amount of waterways within the game area, a number of water access sites have been developed and will continue to be maintained. The primary objective of these sites is to provide access to waterways for waterfowl hunting and fishing. In addition, these sites provide convenient access for recreational canoeing and boating. ASGA staff will continue to maintain access sites at Lake Allegan (Echo Point and Lake Allegan West), Swan Creek Pond, Kalamazoo River (Pine Creek Mouth, Trowbridge, M-89, Pipeline Landing, Main Ottawa Landing, and Hoffman Landing), Ely Lake, Little Tom Lake and Crooked Lake. In addition, PRB maintains the access sites at Pine Creek Impoundment and the Kalamazoo River (Calkins Dam, New Richmond and Hacklander Landing).

Managed Hunting Area

The Managed Hunting Area includes the Fennville Farm Unit, Ottawa Marsh, Bravo Unit, and the Highbanks Unit. The managed hunting area receives intense use from the public and therefore is managed with more restrictive rules and regulations to protect the wildlife and natural resources that are within these units. The habitat management practices within these units are similar to those of the Forest Unit. The rules and regulations vary according to each unit. Some examples include daily drawings, shooting time restrictions, shell limits and designated hunting zones. These rules and regulations will be reviewed regularly and appropriate changes will be made based on the use of the property within these units.

Special Use Areas

In 1964, administration of the State Forest Lands was assigned to the Wildlife Division. Part of this agreement was the stipulation to maintain diverse recreational uses on these lands as long as general fund monies were provided to fund the maintenance of this recreation. The Special Use Areas were identified to delineate areas where recreational activities, deemed non-compatible with wildlife preservation and recreation, would be maintained. However, general funds are no longer available for the maintenance of these areas and therefore these areas will no longer be designated for these recreational uses. An advisory committee was created in 2004 to develop and propose alternatives that

would both maintain the opportunity for the non-compatible forms of recreation but also provide a self sustaining funding mechanism for maintenance related to this recreation. The group is discussing the creation of an equestrian trail system to provide the continual opportunity for equestrian related recreation on the Game Area. Proposals from this group will be evaluated and implemented if approved.

Target Range

Objectives are to maintain the Echo Point Shooting Range on the Game Area structured by rules for designated shooting ranges. Infrastructure improvements will be made as deemed necessary to regulate use of the site and to improve safety.

III. MANAGEMENT ACTIVITIES

1. Habitat Management Techniques

Habitat management occurs on the Game Area through a process where a need for habitat change is identified in relation to Game Area goals and objectives. Various management techniques are evaluated with respect to their functionality in meeting these habitat changes. The most appropriate management technique is selected, a desired timeframe for completion is established and the technique is scheduled for implementation (Schemnitz, 1980).

To assure comprehensive and balanced review of needs across the entire Game Area, it is divided into twenty six compartments, each of which is scheduled for comprehensive review once every five years. Each compartment is divided into stands, each with an inventory of their composition and a long term vision for their contribution to their compartment and management needs. As each compartment is reviewed, short-term (within five years) management needs are identified for these stands. Appropriate management techniques are selected and scheduled.

There are several groups of plant community management techniques applied on the Game Area. They include prescribed fire, mowing and mechanical cutting, application of chemicals, plowing or other soil disturbance, water manipulation, planting and timber harvest. Volunteers are used, where available, to accomplish the more labor-intensive habitat prescriptions. Permanent and temporary staff is also used to complete various habitat efforts.

a) Prescribed fire

Prescribed fire is an important technique employed to address a number of management needs. Fire can be used to discourage woody vegetation, restructure herbaceous vegetation, reduce biomass, reduce fuel loads, and stimulate growth. Prescribed Fire is regularly used by department personnel to manage oak savanna, dry sand prairie, coastal plain marsh, oak forest, and herbaceous openings.

b) Mowing and mechanical cutting

Mechanical methods are used to discourage woody vegetation and stimulate herbaceous vegetation. Infrequent mowing is also used to stimulate shrubby growth. Mowing is employed to maintain herbaceous openings, regenerate upland brush areas, and stimulate reflushing of grass fields. Mowing is accomplished with Game Area staff or through contract.

c) Chemicals

Chemical treatments are the least used of the management techniques. Chemicals are used when no other technique will reasonably meet the desired objective. Their greatest application occurs on agricultural crops at the Fennville Farm Unit, often where they are applied by Game Area staff or sharecrop farmers. All pesticide applicators are certified with the Michigan Department of Agriculture and follow all requirements of law governing pesticide application.

d) Plowing and soil disturbance

Soil disturbance is used to replace one plant community successional condition with another. Most of this activity occurs at the Fennville Farm Unit, where agricultural crops are maintained. Limited soil disturbance is used in wooded areas to create, maintain, or expand herbaceous openings.

e) Water level manipulations

Water level manipulations are used to control the type and quality of vegetation within the impounded areas. Drawdowns of impoundments will generally be conducted in either mid-winter or mid-summer. In all cases where drawdowns are conducted, water availability to refill the basin, including time to refill, will first be assessed to insure it meets management objectives. Objectives for mid-winter drawdowns will include soil aeration to slow levels of anaerobic action during periods when the basin is filled. Mid-winter drawdowns will encourage growth of submergent aquatic plants like coontail, milfoil, and pond weeds, as well as duckweed and watermeal, once the basin is refilled in early spring. It will also be used as a means of rough fish control. Mid-summer drawdowns will be conducted to encourage growth of fruiting aquatics like smartweed and beggar tick. All drawdowns will stimulate populations of aquatic macro-invertebrates. Timing considerations will be dictated by plant community condition and change.

f) Timber Harvest

Harvesting timber is used primarily to regenerate forest cover types. Most prescriptions are accomplished through timber sale contract or some other form of contracted service. Commercial timber harvesting is the most efficient, effective, and economical means of managing forested areas to achieve stated objectives. Clearcuts will be utilized where they are the only silvicultural method of naturally regenerating a preferred species such as aspen. Clearcuts will also be used when replacing an undesirable stand with a preferred species (i.e. jack or Scotch pine to oak) or on poor-site oak. The size of

clearcuts will be determined by the objective of the site and stand size. Shelterwood/seed tree harvests will be the preferred method for regenerating most oak and oak/pine forest types, with individual selective tree removal utilized in the majority of central and lowland hardwood stands and pine plantations.

The size of harvest areas will be determined by stand size and condition. Den trees and snags will be saved within harvest areas where feasible. Fragmentation from timber harvesting, however, is not a permanent result of timber operations, as the fragmentation effect decreases with time as the forest regenerates. Also, shelterwood harvests are expected to have a less severe and much shorter fragmentation effect than clearcut operations.

Proposed timber harvests will include an initial emphasis on treating jack and red pine stands to retain them in lieu of white pine occurrence, regenerating the remaining overmature aspen areas, increasing the white pine occurrence in the overstory, and increasing emphasis on oak regeneration. The need for salvage cuts, some potentially large, resulting from fire, insect and disease damage will be taken into consideration. As a result, the total acreage proposed for timber harvests each year will vary considerably and will not be constrained by administratively set minimum or maximum targets.

2. Management of Specialized Habitats

Commonly, oak savannas are managed using prescribed fire to replace the natural wild fires and burning activities of Native Americans, which once played a major role in perpetuating the flora and fauna of the community. Considerations for managing both the community and rare species require that timing, intensity, size, and frequency of prescribed burns be monitored carefully. The Karner blue butterfly, for example, is not fire tolerant at any point in its life cycle (Appendix H). Burning activities must be carefully planned to protect a source population from which dispersing butterflies can move to recolonize burned areas. Also, while the species remains Federally Endangered, a federal permit must be obtained for any management activity which may result in take of the species. Pre-burn surveys are needed to confirm the presence and distribution of butterflies at a site and determine burn boundaries. Burning of large areas or entire oak openings is not recommended under any circumstances due to the high risk of causing local extinction of rare or unsurveyed species.

To restore degraded oak savannas, it may be necessary to use some combination of burning, cutting, soil scarification, and selective herbiciding to eliminate undesirable woody species and reduce canopy coverage. This helps to create and maintain the oak savannas that are essential to the Karner blue and other associated insect fauna.

Mowing activities, although still experimental, have been used by other states to maintain and expand openings within oak savannas. Because of restrictions on prescribed burns (proper weather conditions, control staff availability, etc.), supplemental mowing may be required to complete management objectives for the oak savannas in Allegan County. Timing, frequency, and mowing heights will be determined after careful consideration of the life cycle and biological requirements of rare species at each site.

Ideally, management for oak savannas should focus on the perpetuation of this community type and its associated plant and animal species, instead of any single species. By using a landscape approach to management of the Game Area, the colonization success and duration of habitat use by rare species will be enhanced while minimizing local extirpations.

3. Facilities Management and Maintenance

All facilities are maintained on an inspection schedule that includes weekly, monthly, annual, or five-year inspections. These inspections are conducted largely by Game Area staff but also include engineers, safety experts, species and habitat specialists, and other agency personnel. Results of inspections are consolidated by Game Area staff along with any actions taken.

4. Monitoring and Adaptive Management

Wildlife populations, habitats, recreational activities and facilities will be monitored as part of normal wildlife management activities on this area. Monitoring will include formal and informal investigations into the effectiveness of management actions. Assessments of effectiveness will provide specific information that will aid in planning and implementation of management activities on the area.

Annual wildlife surveys will be conducted for a selected number of species to evaluate the effectiveness of management for each species as well as a balanced ecosystem. Due to the diversity of threatened and endangered species in this area, management directives will be evaluated with attention placed on the needs of these species while preserving the integrity of the more common species and the overall environmental system. Habitat type mapping will be necessary in providing information that is critical in making wildlife management decisions. Hunter harvest surveys, public meetings, public contacts, phone calls, letters, etc. are examples of the sources implemented when monitoring public use.

Adaptive management involves integrating management activities with an assessment of the effectiveness of those activities through monitoring and then modifying plans to enhance the desired impacts of management on the area. Results of assessments of management approach and actions will be reviewed by agency personnel and interested stakeholders annually, and appropriate modifications to management will be included in future workplans so that continual improvement can be made toward meeting goals and objectives for this area.

IV. PUBLIC INPUT

Public input has included, but not limited to suggestions from the bi-annual meetings held since 1993, periodic meetings with user groups/interest groups, master plan meeting in 1999, periodic contact with interested individuals, focus group input, public input conveyed through state and local political and governmental entities, and advocacy groups.

The draft version of the revised master plan was made available for public viewing starting July 12, 2004 and ending August 20, 2004. Public availability was advertised in the Flashes (weekly periodical distributed without charge to homes in Allegan County) for two weeks and posted at the Allegan State Game Area Office. Copies of the plan were located at the Allegan State Game Area Office and the Plainwell Operation Service Center during this period. Also, copies of the plan were made available at the Allegan and Otsego public libraries from August 9 – 20, 2004, in response to requests received from the public.

The public meeting was held on July 27, 2004 at the Gun Plain Township Hall from 6:30 P.M. to 8:30 P.M. to discuss the draft master plan. Sara Schaefer, Tyson Edwards, John Lerg, Maria Albright and Bruce Barlow from the DNR were on hand to answer any questions regarding the master plan. A copy of the minutes from this meeting and a list of attendees is on file at the Allegan State Game Area office.

Written Comments were accepted until August 20, 2004 for easier tracking and evaluation. A total of 4 written comments were received: 2 by e-mail, 1 by US mail, and 1 by documented phone message. A majority of the comments received from the meeting and in writing were related to the operation and maintenance of the property. These comments will be addressed in the forthcoming operation and maintenance plan. The strategic level comments were reviewed and incorporated into the plan where appropriate.

V. REFERENCES

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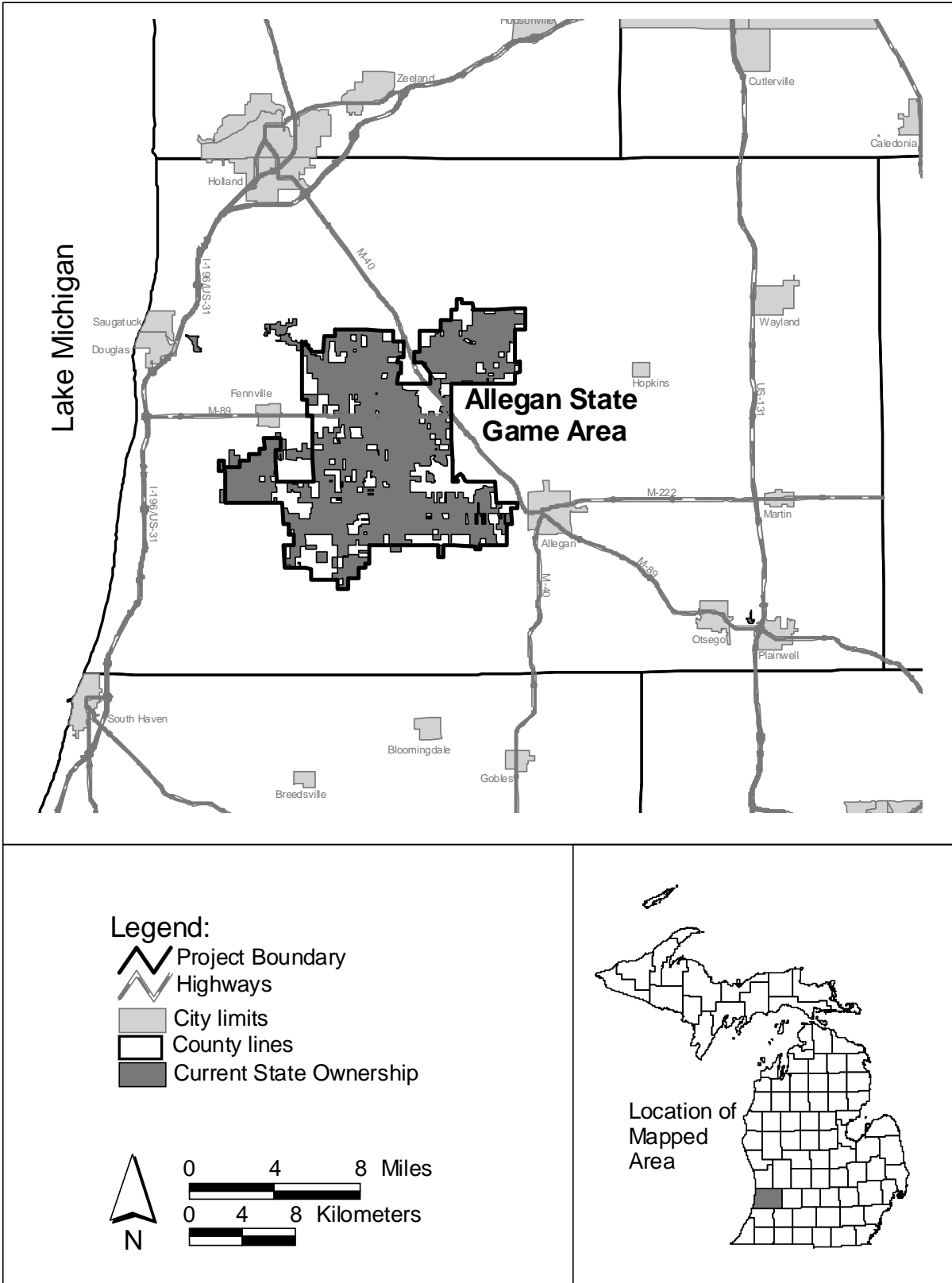


Figure 1. General location of Allegan State Game Area and project boundary.

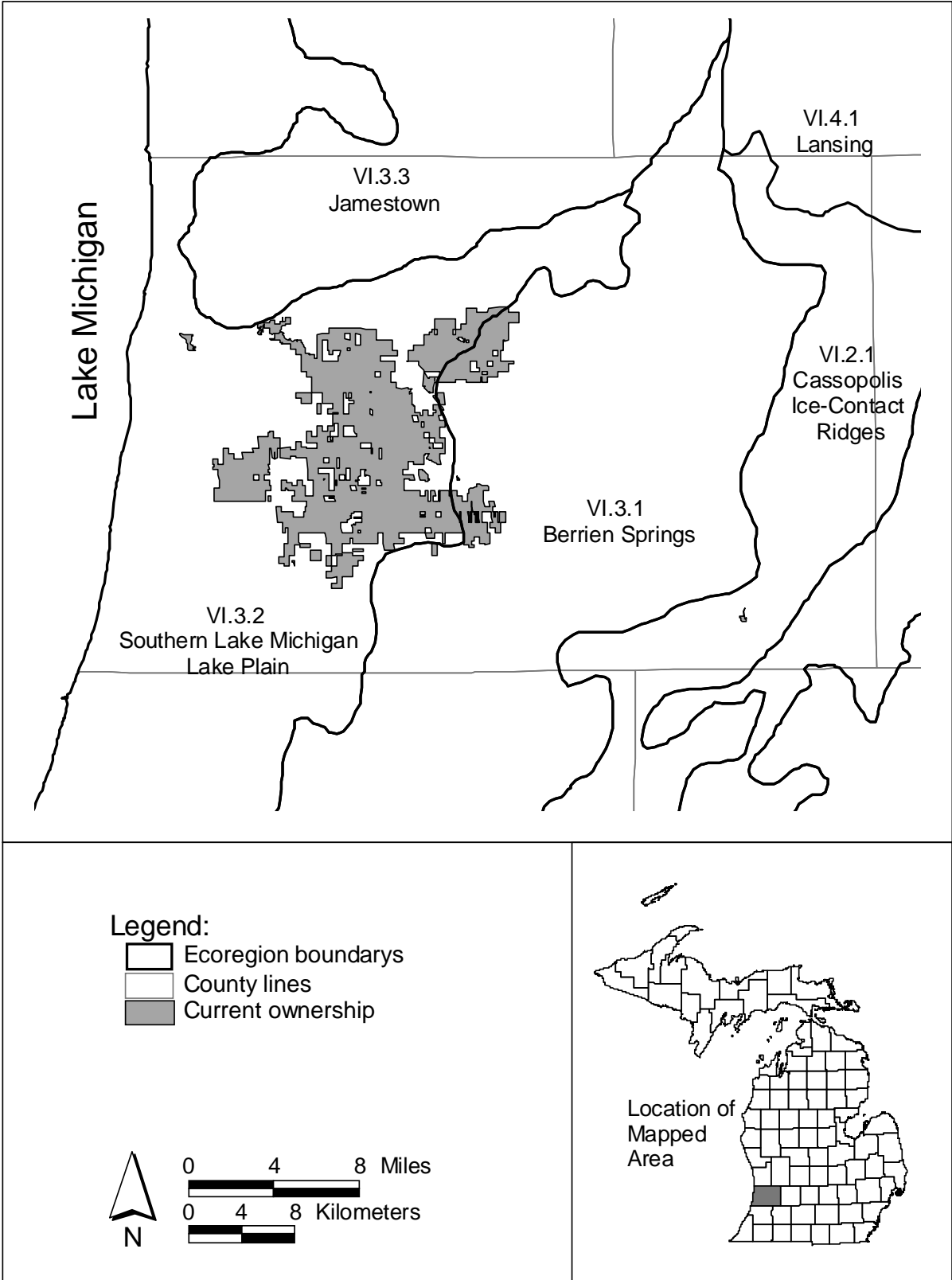
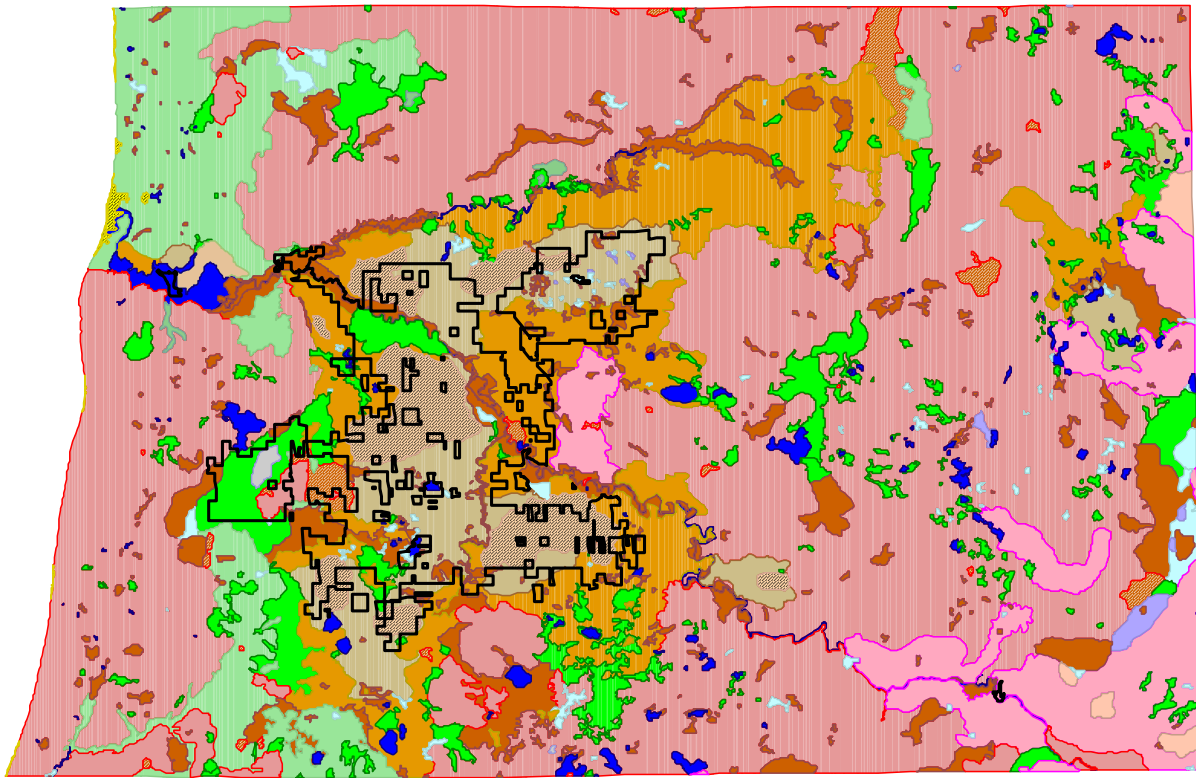


Figure 2. Ecoregions associated with Allegan State Game Area.



Legend:

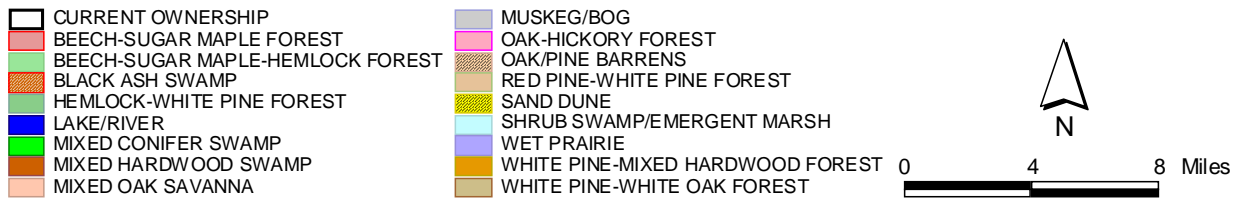


Figure 3. Pre-settlement landcover map of Alleghen County with Alleghen State Game Area superimposed.

Appendix A. Karner Blue Butterfly Habitat Conservation Plan Implementing Plan Outline – Allegan State Game Area

This outline is built around a mutual agreement within the Department of Natural Resources to perpetuate Karner blue butterfly (KBB) populations at Allegan State Game Area (Allegan SGA) as a part of accomplishment of goals and objectives specified in the KBB Recovery Plan for the Allegan Recovery Unit.

Goals:

To maintain habitat on Allegan SGA sufficient to support the minimum population structure specified in the KBB Recovery Plan for the Allegan Recovery Unit to meet recommendations for delisting.

To maintain habitat on the Allegan SGA sufficient to support existing KBB populations within stable population structures.

Objectives:

To maintain suitable habitat sufficient to support a minimum of 1 large viable metapopulation (LP) on Allegan SGA.

- To maintain at least 640 acres of suitable habitat per LP well connected by dispersal corridors.
- To maintain suitable habitat on at least a 10 square mile land base and dispersed over 2/3 of that land base.
- To document (map and quantify) the occurrence of this habitat and associated corridors in relation to the land base.
- To update this documentation annually.
- To provide KBB population estimates annually on this land base.
- To provide a prioritized list of land parcels desirable for acquisition to compliment this objective.

To maintain suitable habitat sufficient to support a minimum viable population (VP) on Allegan SGA (may substitute with a LP following above objective).

- To maintain suitable habitat well connected by dispersal corridors that is sufficient to support a minimum of 3000 second-brood butterfly adults.
- To maintain this suitable habitat dispersed on a defined land base that is larger than 2 square miles.
- To document (map and quantify) the occurrence of this habitat and associated corridors in relation to the land base.

- To update this documentation annually.
- To provide KBB population estimates annually on this land base.
- To provide a prioritized list of land parcels desirable for acquisition to compliment this objective.

To maintain existing KBB populations on Allegan SGA in stable habitat configurations.

- To conduct annual surveys to confirm existing KBB populations and to identify new KBB populations.
- To maintain habitat for existing populations to support them either as metapopulations or populations in core area or refugia configurations.
- To document (map and quantify) the occurrence of these stable habitat configurations.
- To update this documentation annually.
- To provide KBB population estimates annually.
- To provide a prioritized list of land parcels desirable for acquisition to compliment this objective.

Assignment of Responsibility

Field staff is responsible for operational planning to implement the above objectives, in-field activities needed to meet objective elements, and generation of funding and resource requests needed to meet objectives. Natural Heritage Program staff is responsible for strategic direction, program guidance and consultation, operational guidelines, and funding and resource support.

Jm15-18-04

Appendix B. Reptiles Reported from the Allegan State Game Area

Scientific Name	Common Name
<i>Apalone spinifera</i>	Eastern Spiny Softshell
<i>Chelydra serpentina</i>	Snapping Turtle
<i>Chrysemys picta</i>	Painted Turtle
<i>Clemmys guttata</i>	Spotted Turtle
<i>Coluber constrictor foxi</i>	Blue Racer
<i>Diadophis punctatus edwardsi</i>	Northern Ringneck Snake
<i>Elaphe obsoleta obsoleta</i>	Black Rat Snake
<i>Emydoidea blandingii</i>	Blanding's Turtle
<i>Eumeces fasciatus</i>	Five-lined Skink
<i>Graptemys geographica</i>	Map Turtle
<i>Heterodon platyrhinos</i>	Eastern Hognose Snake
<i>Lampropeltis triangulum triangulum</i>	Eastern Milk Snake
<i>Nerodia sipedon sipedon</i>	Northern Water Snake
<i>Opheodrys vernalis</i>	Smooth Green Snake
<i>Regina septemvittata</i>	Queen Snake
<i>Sistrurus catenatus catenatus</i>	Eastern Massasauga Rattlesnake
<i>Sternotherus odoratus</i>	Musk Turtle (Stinkpot)
<i>Storeria dekayi</i>	Brown Snake
<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake
<i>Terrapene carolina carolina</i>	Eastern Box Turtle
<i>Thamnophis butleri</i>	Butler's Garter Snake
<i>Thamnophis sauritus septentrionalis</i>	Northern Ribbon Snake
<i>Thamnophis sirtalis sirtalis</i>	Eastern Garter Snake

Appendix C. Amphibians Reported from the Allegan State Game Area

Scientific Name	Common Name
<i>Acris crepitans blanchardi</i>	Cricket Frog
<i>Ambystoma laterale</i>	Blue-spotted Salamander
<i>Ambystoma maculatum</i>	Spotted Salamander
<i>Ambystoma opacum</i>	Marbled Salamander
<i>Ambystoma tigrinum</i>	Tiger Salamander
<i>Bufo americanus</i>	American Toad
<i>Bufo woodhousii fowleri</i>	Fowler's Toad
<i>Hemidactylium scutatum</i>	Four-toed Salamander
<i>Hyla versicolor</i>	Gray Treefrog
<i>Necturus maculosus</i>	Mudpuppy
<i>Notophthalmus viridescens</i>	Eastern Newt
<i>Plethodon cinereus</i>	Red-backed Salamander
<i>Pseudacris crucifer</i>	Spring Peeper
<i>Pseudacris triseriata</i>	Western Chorus Frog
<i>Rana catesbeiana</i>	Bullfrog
<i>Rana clamitans</i>	Green Frog
<i>Rana palustris</i>	Pickerel Frog
<i>Rana pipiens</i>	Northern Leopard Frog
<i>Rana sylvatica</i>	Wood Frog

Appendix D. Fish Reported on Allegan State Game Area and Adjacent Waters

Scientific Name	Common Name
<i>Acipenser fulvescens</i>	Lake Sturgeon
<i>Alosa pseudoharengus</i>	Alewife
<i>Ambloplites rupestris</i>	Rock Bass
<i>Ameiurus melas</i>	Black Bullhead
<i>Ameiurus natalis</i>	Yellow Bullhead
<i>Ameiurus nebulosus</i>	Brown Bullhead
<i>Amia calva</i>	Bowfin
<i>Aphredoderus sayanus</i>	Pirate Perch
<i>Aplodinotus grunniens</i>	Freshwater Drum
<i>Campostoma anomalum</i>	Central Stoneroller
<i>Carassius auratus</i>	Goldfish
<i>Carpiodes cyprinus</i>	Quillback
<i>Catostomus catostomus</i>	Longnose Sucker
<i>Catostomus commersoni</i>	White Sucker
<i>Cottus bairdi</i>	Mottled Sculpin
<i>Couesius plumbeus</i>	Lake Chub
<i>Culaea inconstans</i>	Brook Stickleback
<i>Cyprinella spiloptera</i>	Spotfin Shiner
<i>Cyprinus carpio</i>	Common Carp
<i>Dorosoma cepedianum</i>	Gizzard Shad
<i>Erimyzon claviformis</i>	Western Creek Chubsucker*
<i>Erimyzon sucetta</i>	Lake Chubsucker
<i>Esox americanus vermiculatus</i>	Grass Pickerel
<i>Esox lucius</i>	Northern Pike
<i>Esox masquinongy</i>	Muskellunge
<i>Etheostoma caeruleum</i>	Rainbow Darter*
<i>Etheostoma nigrum</i>	Johnny Darter
<i>Hypentelium nigricans</i>	Northern Hog Sucker
<i>Ichthyomyzon castaneus</i>	Chestnut Lamprey*
<i>Ictalurus punctatus</i>	Channel Catfish
<i>Labidesthes sicculus</i>	Brook Silverside
<i>Lampetra appendix</i>	American Brook Lamprey
<i>Lepisosteus oculatus</i>	Spotted Gar
<i>Lepisosteus osseus</i>	Longnose Gar
<i>Lepomis cyanellus</i>	Green Sunfish
<i>Lepomis gibbosus</i>	Pumpkinseed

Scientific Name	Common Name
<i>Lepomis gulosus</i>	Warmouth
<i>Lepomis macrochirus</i>	Bluegill
<i>Lepomis peltastes</i>	Northern Longear Sunfish
<i>Lota lota</i>	Burbot
<i>Luxilus cornutus</i>	Common Shiner
<i>Micropterus dolomieu</i>	Smallmouth Bass
<i>Micropterus salmoides</i>	Largemouth Bass
<i>Minytrema melanops</i>	Spotted Sucker
<i>Morone chrysops</i>	White Bass
<i>Moxostoma anisurum</i>	Silver Redhorse
<i>Moxostoma duquesnei</i>	Black Redhorse
<i>Moxostoma erythrurum</i>	Golden Redhorse
<i>Moxostoma macrolepidotum</i>	Shorthead Redhorse
<i>Nocomis biguttatus</i>	Horneyhead Chub
<i>Notemigonus crysoleucas</i>	Golden Shiner
<i>Notropis atherinoides</i>	Emerald Shiner
<i>Notropis hudsonius</i>	Spottail Shiner
<i>Notropis stramineus</i>	Sand Shiner
<i>Notropis texanus (Ep)</i>	Weed Shiner
<i>Notropis volucellus</i>	Mimic Shiner
<i>Noturus flavus</i>	Stonecat
<i>Noturus gyrinus</i>	Tadpole Madtom
<i>Oncorhynchus kisutch</i>	Coho Salmon
<i>Oncorhynchus mykiss</i>	Rainbow Trout
<i>Oncorhynchus tshawytscha</i>	Chinook Salmon
<i>Perca flavescens</i>	Yellow Perch
<i>Percina caprodes semifasciata</i>	Northern Logperch
<i>Percina maculata</i>	Blackside Darter
<i>Petromyzon marinus</i>	Sea Lamprey
<i>Pimephales notatus</i>	Bluntnose Minnow
<i>Pomoxis annularis</i>	White Crappie*
<i>Pomoxis nigromaculatus</i>	Black Crappie
<i>Pungitius pungitius</i>	Ninespine Stickleback
<i>Pylodictis olivaris</i>	Flathead Catfish
<i>Rhinichthys obtusus</i>	Western Blacknose Dace
<i>Salmo trutta</i>	Brown Trout
<i>Salvelinus fontinalis</i>	Brook Trout

Scientific Name	Common Name
<i>Sander vitreus</i>	Walleye
<i>Semotilus atromaculatus</i>	Creek Chub
<i>Umbra limi</i>	Central Mudminnow

*Presence not confirmed

Appendix E. Birds Reported from the Allegan State Game Area

Scientific Name	Common Name
<i>Acanthis flammea</i>	Common Redpoll
<i>Acanthis hornemanni</i>	Hoary Redpoll
<i>Accipiter cooperii</i>	*Cooper's Hawk
<i>Accipiter striatus</i>	*Sharp-shinned Hawk
<i>Accipiter gentilis</i>	Northern Goshawk
<i>Actitis macularia</i>	*Spotted Sandpiper
<i>Aegolius acadicus</i>	*Northern Saw-whet Owl
<i>Agelaius phoeniceus</i>	*Red-winged Blackbird
<i>Aix sponsa</i>	*Wood Duck
<i>Ammodramus henslowii</i>	*Henslow's Sparrow
<i>Ammodramus savannarum</i>	*Grasshopper Sparrow
<i>Anas acuta</i>	Northern Pintail
<i>Anas americana</i>	American Wigeon
<i>Anas clypeata</i>	Northern Shoveler
<i>Anas crecca</i>	Green-winged Teal
<i>Anas cyanoptera</i>	Cinnamon Teal
<i>Anas discors</i>	*Blue-winged Teal
<i>Anas platyrhynchos</i>	*Mallard
<i>Anas rubripes</i>	*American Black Duck
<i>Anas strepera</i>	Gadwall
<i>Anser albifrons</i>	Greater White-fronted Goose
<i>Anthus spinoletta</i>	American Pipit
<i>Aquila chrysaetos</i>	Golden Eagle
<i>Archilochus colubris</i>	*Ruby-throated Hummingbird
<i>Ardea herodias</i>	*Great Blue Heron
<i>Asio flammeus</i>	Short-eared Owl
<i>Asio otus</i>	Long-eared Owl
<i>Aythya affinis</i>	Lesser Scaup
<i>Aythya americana</i>	Redhead
<i>Aythya collaris</i>	Ring-necked Duck
<i>Aythya marila</i>	Greater Scaup
<i>Aythya valisineria</i>	Canvasback
<i>Bartramia longicauda</i>	*Upland Sandpiper
<i>Bombycilla cedrorum</i>	*Cedar Waxwing
<i>Bonasa umbellus</i>	*Ruffed Grouse
<i>Botaurus lentiginosus</i>	*American Bittern

Scientific Name	Common Name
<i>Branta bernicla</i>	Brant
<i>Branta canadensis</i>	*Canada Goose
<i>Branta leucopsis</i>	Barnacle Goose
<i>Bubo virginianus</i>	*Great Horned Owl
<i>Bucephala albeola</i>	Bufflehead
<i>Bucephala clangula</i>	Common Goldeneye
<i>Buteo jamaicensis</i>	*Red-tailed Hawk
<i>Buteo lagopus</i>	Rough-legged Hawk
<i>Buteo lineatus</i>	*Red-shouldered Hawk
<i>Buteo platypterus</i>	*Broad-winged Hawk
<i>Buteo regalis</i>	Ferruginous Hawk
<i>Butorides striatus</i>	*Green-backed Heron
<i>Calcarius lapponicus</i>	Lapland Longspur
<i>Calidris minutilla</i>	Least Sandpiper
<i>Capella gallinago</i>	*Common Snipe
<i>Caprimulgus vociferus</i>	*Whip-poor-will
<i>Cardinalis cardinalis</i>	*Northern Cardinal
<i>Carduelis pinus</i>	Pine Siskin
<i>Carduelis tristis</i>	*American Goldfinch
<i>Carpodacus mexicanus</i>	*House Finch
<i>Carpodacus purpureus</i>	Purple Finch
<i>Casmerodius albus</i>	*Great Egret
<i>Cathartes aura</i>	*Turkey Vulture
<i>Catharus fuscescens</i>	*Veery
<i>Catharus guttatus</i>	*Hermit Thrush
<i>Catharus minimus</i>	Gray-cheeked Thrush
<i>Catharus ustulatus</i>	Swainson's Thrush
<i>Certhia americana</i>	*Brown Creeper
<i>Chaetura pelagica</i>	*Chimney Swift
<i>Charadrius vociferus</i>	*Killdeer
<i>Chen caerulescens</i>	Snow Goose
<i>Chen rossii</i>	Ross' Goose
<i>Chlidonias niger</i>	*Black Tern
<i>Chordeiles minor</i>	*Common Nighthawk
<i>Circus cyaneus</i>	*Northern Harrier
<i>Cistothorus palustris</i>	*Marsh Wren
<i>Cistothorus platensis</i>	*Sedge Wren

Scientific Name	Common Name
<i>Coccothraustes vespertinus</i>	Evening Grosbeak
<i>Coccyzus americanus</i>	*Yellow-billed Cuckoo
<i>Coccyzus erythrophthalmus</i>	*Black-billed Cuckoo
<i>Colaptes auratus</i>	*Northern Flicker
<i>Colinus virginianus</i>	*Northern Bobwhite
<i>Columba livia</i>	*Rock Dove
<i>Contopus borealis</i>	Olive-sided Flycatcher
<i>Contopus virens</i>	*Eastern Wood-Pewee
<i>Corvus brachyrhynchos</i>	*American Crow
<i>Cyanocitta cristata</i>	*Blue Jay
<i>Cygnus columbianus</i>	Tundra Swan
<i>Cygnus olor</i>	*Mute Swan
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler
<i>Dendroica castanea</i>	Bay-breasted Warbler
<i>Dendroica cerulea</i>	*Cerulean Warbler
<i>Dendroica coronata</i>	Yellow-rumped Warbler
<i>Dendroica discolor</i>	Prairie Warbler
<i>Dendroica dominica</i>	Yellow-throated warbler
<i>Dendroica fusca</i>	*Blackburnian Warbler
<i>Dendroica kirtlandii</i>	Kirtland's Warbler
<i>Dendroica magnolia</i>	Magnolia Warbler
<i>Dendroica palmarum</i>	Palm Warbler
<i>Dendroica pensylvanica</i>	*Chestnut-sided Warbler
<i>Dendroica petechia</i>	*Yellow Warbler
<i>Dendroica pinus</i>	Pine Warbler
<i>Dendroica striata</i>	Blackpoll Warbler
<i>Dendroica tigrina</i>	Cape May Warbler
<i>Dendroica virens</i>	*Black-throated Green Warbler
<i>Dolichonyx oryzivorus</i>	*Bobolink
<i>Dryocopus pileatus</i>	*Pileated Woodpecker
<i>Dumetella carolinensis</i>	*Gray Catbird
<i>Empidonax alnorum</i>	*Alder Flycatcher
<i>Empidonax flaviventris</i>	Yellow-bellied Flycatcher
<i>Empidonax minimus</i>	*Least Flycatcher
<i>Empidonax trailii</i>	*Willow Flycatcher
<i>Empidonax virescens</i>	*Acadian Flycatcher
<i>Eremophila alpestris</i>	*Horned Lark

Scientific Name	Common Name
<i>Euphagus carolinus</i>	Rusty Blackbird
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird
<i>Falco columbarius</i>	Merlin
<i>Falco peregrinus</i>	Peregrine Falcon
<i>Falco sparverius</i>	*American Kestrel
<i>Fulica americana</i>	*American Coot
<i>Gavia immer</i>	Common Loon
<i>Geothlypis trichas</i>	*Common Yellowthroat
<i>Grus canadensis</i>	Sandhill Crane
<i>Haliaeetus leucocephalus</i>	*Bald Eagle
<i>Hirundo pyrrhonota</i>	*Cliff Swallow
<i>Hirundo rustica</i>	*Barn Swallow
<i>Hylocichla mustelina</i>	*Wood Thrush
<i>Icteria virens</i>	*Yellow-breasted Chat
<i>Icterus galbula</i>	*Northern Oriole
<i>Icterus spurius</i>	*Orchard Oriole
<i>Ixobrychus exilis</i>	*Least Bittern
<i>Junco hyemalis</i>	Dark-eyed Junco
<i>Lanius excubitor</i>	Northern Shrike
<i>Lanius ludovicianus</i>	*Loggerhead Shrike
<i>Larus argentatus</i>	Herring Gull
<i>Larus delawarensis</i>	Ring-billed Gull
<i>Larus philadelphia</i>	Bonaparte's Gull
<i>Lophodytes cucullatus</i>	*Hooded Merganser
<i>Loxia curvirostra</i>	Red Crossbill
<i>Loxia leucoptera</i>	White-winged Crossbill
<i>Megacerle alcyon</i>	*Belted Kingfisher
<i>Melanerpes carolinus</i>	*Red-bellied Woodpecker
<i>Melanerpes erythrocephalus</i>	*Red-headed Woodpecker
<i>Meleagris gallopavo</i>	*Wild Turkey
<i>Melospiza georgiana</i>	*Swamp Sparrow
<i>Melospiza lincolni</i>	Lincoln's Sparrow
<i>Melospiza melodia</i>	*Song Sparrow
<i>Mergus merganser</i>	Common Merganser
<i>Mergus serrator</i>	Red-breasted Merganser
<i>Mimus polyglottos</i>	*Northern Mockingbird
<i>Mniotilta varia</i>	*Black-and-white Warbler

Scientific Name	Common Name
<i>Molothrus ater</i>	*Brown-headed Cowbird
<i>Myiarchus crinitus</i>	*Great Crested Flycatcher
<i>Nyctanassa violacea</i>	Yellow-crowned Night-Heron
<i>Nyctea scandiaca</i>	Snowy Owl
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron
<i>Oporornis agilis</i>	Connecticut Warbler
<i>Oporornis philadelphia</i>	*Mourning Warbler
<i>Otus asio</i>	*Eastern Screech Owl
<i>Oxyura jamaicensis</i>	Ruddy Duck
<i>Pandion haliaetus</i>	Osprey
<i>Parula americana</i>	Northern Parula
<i>Parus atricapillus</i>	*Black-capped Chickadee
<i>Parus bicolor</i>	*Tufted Titmouse
<i>Passer domesticus</i>	*House Sparrow
<i>Passerculus sandwichensis</i>	*Savannah Sparrow
<i>Passerella iliaca</i>	Fox Sparrow
<i>Passerina cyanea</i>	*Indigo Bunting
<i>Pelecanus erythrorhynchos</i>	American White Pelican
<i>Phalacrocorax auritus</i>	Double-crested Cormorant
<i>Phasianus colchicus</i>	*Ring-necked Pheasant
<i>Pheucticus ludovicianus</i>	*Rose-breasted Grosbeak
<i>Picoides pubescens</i>	*Downy Woodpecker
<i>Picoides villosus</i>	*Hairy Woodpecker
<i>Pinicola enucleator</i>	Pine Grosbeak
<i>Pipilo erythrophthalmus</i>	*Rufous-sided Towhee
<i>Piranga olivacea</i>	*Scarlet Tanager
<i>Plectrophenax nivalis</i>	Snow Bunting
<i>Pluvialis dominica</i>	Lesser Golden Plover
<i>Pluvialis squatarola</i>	Black-bellied Plover
<i>Podiceps auritus</i>	Horned Grebe
<i>Podilymbus podiceps</i>	*Pied-billed Grebe
<i>Polioptila caerulea</i>	*Blue-gray Gnatcatcher
<i>Pooecetes gramineus</i>	*Vesper Sparrow
<i>Porzana carolina</i>	*Sora
<i>Progne subis</i>	Purple Martin
<i>Protonotaria citrea</i>	*Prothonotary Warbler
<i>Quiscalus quiscula</i>	*Common Grackle

Scientific Name	Common Name
<i>Rallus limicola</i>	*Virginia Rail
<i>Regulus calendula</i>	Ruby-crowned Kinglet
<i>Regulus satrapa</i>	Golden-crowned Kinglet
<i>Riparia riparia</i>	*Bank Swallow
<i>Sayornis phoebe</i>	*Eastern Phoebe
<i>Scolopax minor</i>	*American Woodcock
<i>Seiurus aurocapillus</i>	*Ovenbird
<i>Seiurus motacilla</i>	*Louisiana Waterthrush
<i>Seiurus noveboracensis</i>	Northern Waterthrush
<i>Setophaga ruticilla</i>	*American Redstart
<i>Sialia sialis</i>	*Eastern Bluebird
<i>Sitta canadensis</i>	Red-breasted Nuthatch
<i>Sitta carolinensis</i>	*White-breasted Nuthatch
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker
<i>Spiza americana</i>	*Dickcissel
<i>Spizella arborea</i>	American Tree Sparrow
<i>Spizella passerina</i>	*Chipping Sparrow
<i>Spizella pusilla</i>	*Field Sparrow
<i>Stelgidopteryx serripennis</i>	*Northern Rough-winged Swallow
<i>Sterna hirundo</i>	Common Tern
<i>Strix varia</i>	*Barred Owl
<i>Sturnella magna</i>	*Eastern Meadowlark
<i>Sturnella neglecta</i>	*Western Meadowlark
<i>Sturnus vulgaris</i>	*European Starling
<i>Tachycineta bicolor</i>	*Tree Swallow
<i>Thryothorus ludovicianus</i>	*Carolina Wren
<i>Toxostoma rufum</i>	*Brown Thrasher
<i>Tringa flavipes</i>	Lesser Yellowlegs
<i>Tringa melanoleuca</i>	Greater Yellowlegs
<i>Tringa solitaria</i>	Solitary Sandpiper
<i>Troglodytes aedon</i>	*House Wren
<i>Troglodytes troglodytes</i>	Winter Wren
<i>Turdus migratorius</i>	*American Robin
<i>Tyrannus tyrannus</i>	*Eastern Kingbird
<i>Tyrannus verticalis</i>	Western Kingbird
<i>Vermivora celata</i>	Orange-crowned Warbler
<i>Vermivora chrysoptera</i>	*Golden-winged Warbler

Scientific Name	Common Name
<i>Vermivora peregrina</i>	Tennessee Warbler
<i>Vermivora pinus</i>	*Blue-winged Warbler
<i>Vermivora ruficapilla</i>	Nashville Warbler
<i>Vireo flavifrons</i>	*Yellow-Throated Vireo
<i>Vireo gilvus</i>	*Warbling Vireo
<i>Vireo olivaceus</i>	*Red-eyed Vireo
<i>Vireo philadelphicus</i>	Philadelphia Vireo
<i>Vireo solitarius</i>	*Solitary Vireo
<i>Wilsonia canadensis</i>	Canada Warbler
<i>Wilsonia citrina</i>	*Hooded Warbler
<i>Wilsonia pusilla</i>	Wilson's Warbler
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed Blackbird
<i>Zenaida macroura</i>	*Mourning Dove
<i>Zonotrichia albicollis</i>	White-throated Sparrow
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow

*Breeding at Allegan State Game Area

Appendix F. Mammals Reported from the Allegan State Game Area

Scientific Name	Common Name
<i>Blarina brevicauda</i>	Shorttail Shrew
<i>Canis latrans</i>	Coyote
<i>Castor canadensis</i>	Beaver
<i>Condylura cristata</i>	Starnose Mole
<i>Cryptotis parva</i>	Least Shrew
<i>Didelphis marsupialis</i>	Opossum
<i>Eptesicus fuscus</i>	Big Brown Bat
<i>Erethizon dorsatum</i>	Porcupine
<i>Felis rufus</i>	Bobcat
<i>Glaucomys volans</i>	Southern Flying Squirrel
<i>Lasionycteris noctivagans</i>	Silver-haired Bat
<i>Lasiurus borealis</i>	Red Bat
<i>Lasiurus cinereus</i>	Hoary Bat
<i>Lutra canadensis</i>	River Otter
<i>Marmota monax</i>	Woodchuck
<i>Mephitis mephitis</i>	Striped Skunk
<i>Microtus ochrogaster</i>	Prairie Vole
<i>Microtus pennsylvanicus</i>	Meadow Vole
<i>Microtus pinetorum</i>	Woodland Vole
<i>Mus musculus</i>	House Mouse
<i>Mustela frenata</i>	Longtail Weasel
<i>Mustela nivalis</i>	Least Weasel
<i>Mustela vison</i>	Mink
<i>Myotis keenii</i>	Keen Myotis
<i>Myotis lucifugus</i>	Little Brown Bat
<i>Nycticeius humeralis</i>	Evening Bat
<i>Odocoileus virginianus</i>	Whitetail Deer
<i>Ondatra zibethicus</i>	Muskrat
<i>Peromyscus leucopus</i>	White-footed Mouse
<i>Peromyscus maniculatus</i>	Deer Mouse
<i>Procyon lotor</i>	Raccoon
<i>Rattus norvegicus</i>	Norway Rat
<i>Scalopus aquaticus</i>	Eastern Mole
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel
<i>Sciurus niger</i>	Eastern Fox Squirrel
<i>Sorex cinereus</i>	Masked Shrew

Scientific Name	Common Name
<i>Spermophilus tridecemlineatus</i>	Thirteen-lined Ground Squirrel
<i>Sylvilagus floridanus</i>	Eastern Cottontail
<i>Synaptomys cooperi</i>	Southern Bog Lemming
<i>Tamias striatus</i>	Eastern Chipmunk
<i>Tamiasciurus hudsonicus</i>	Red Squirrel
<i>Taxidea taxus</i>	Badger
<i>Urocyon cinereoargenteus</i>	Gray Fox
<i>Vulpes vulpes</i>	Red Fox
<i>Zapus hudsonius</i>	Meadow Jumping Mouse

Appendix G. Special Plants, Animals and Plant Communities on Allegan State Game Area

Scientific Name	Common Name	US/GL	ST
<u>Plants</u>			
<i>Arabis missouriensis</i> var. <i>deamii</i>	Missouri Rock-cress	C2	SC
<i>Carex albolutescens</i>	Greenish-white Sedge		SC
<i>Carex festucacea</i>	Fescue Sedge		SC
<i>Cyperus flavescens</i>	Yellow Nut-grass		SC
<i>Echinodorus tenellus</i>	Dwarf Burhead		E
<i>Eleocharis engelmannii</i>	Engelmann's Spike-rush		SC
<i>Eleocharis melanocarpa</i>	Black-fruited Spike-rush		SC
<i>Eleocharis microcarpa</i>	Small-fruited Spike-rush		T
<i>Eleocharis tricostata</i>	Three-ribbed Spike-rush		T
<i>Fuirena squarrosa</i>	Umbrella-grass		T
<i>Gentiana puberulenta</i>	Downy Gentian		E
<i>Geum triflorum</i>	Prairie-smoke		T
<i>Hemicarpha micrantha</i>	Dwarf-bulrush		SC
<i>Hydrastis canadensis</i>	Goldenseal	3C	T
<i>Isoetes engelmannii</i>	Appalachian Quillwort		E
<i>Juncus biflorus</i>	Two-flowered Rush		SC
<i>Juncus brachycarpus</i>	Short-fruited Rush		T
<i>Juncus scirpoides</i>	Scirpus-like Rush		T
<i>Juncus vaseyi</i>	Vasey's Rush		T
<i>Panicum longifolium</i>	Long-leaved Panic-grass		T
<i>Platanthera ciliaris</i>	Orange or Yellow Fringed Orchid		T
<i>Polygala cruciata</i>	Cross-leaved Milkwort		SC
<i>Polygonum careyi</i>	Carey's Smartweed		T
<i>Potamogeton bicupulatus</i>	Waterthread Pondweed		T
<i>Psilocarya scirpoides</i>	Bald-rush		T
<i>Pycnanthemum verticillatum</i>	Whorled Mountain-mint		SC
<i>Rhexia mariana</i> var. <i>mariana</i>	Maryland Meadow-beauty		T
<i>Rhexia virginica</i>	Meadow-beauty		SC
<i>Rhynchospora macrostachya</i>	Tall Beak-rush		SC
<i>Rotala ramosior</i>	Tooth-cup		SC
<i>Scirpus hallii</i>	Hall's Bulrush	C2	E
<i>Scirpus torreyi</i>	Torrey's Bulrush		SC
<i>Scleria reticularis</i>	Netted Nut-rush		T
<i>Scleria triglomerata</i>	Tall Nut-rush		SC
<i>Sisyrinchium atlanticum</i>	Atlantic Blue-eyed-grass		T

Scientific Name	Common Name	US/GL	ST
<i>Sporobolus heterolepis</i>	Prairie Dropseed		T
<u>Animals</u>			
<i>Accipiter cooperi</i>	Cooper's Hawk		SC
<i>Accipiter gentilis</i>	Northern Goshawk	C2	SC
<i>Acipenser fulvescens</i>	Lake Sturgeon	C2	T
<i>Acris crepitans blanchardi</i>	Blanchard's Cricket Frog		SC
<i>Ambystoma opacum</i>	Marbled Salamander		T
<i>Ammodramus henslowii</i>	Henslow's Sparrow	C2	SC
<i>Botaurus lentiginosus</i>	American Bittern		SC
<i>Buteo lineatus</i>	Red-shouldered Hawk		T
<i>Circus cyaneus</i>	Northern Harrier		SC
<i>Clemmys guttata</i>	Spotted Turtle		SC
<i>Cryptotis parva</i>	Least Shrew		T
<i>Dendroica cerulea</i>	Cerulean Warbler	C2	SC
<i>Elaphe obsoleta obsoleta</i>	Black Rat Snake		SC
<i>Emydoidea blandingii</i>	Blanding's Turtle	C2	SC
<i>Haliaeetus leucocephalus</i>	Bald Eagle	E,T	T
<i>Hesperia ottoe</i>	Ottoe Skipper		T
<i>Incisalia irus</i>	Frosted Elf		T
<i>Lanius ludovicianus migrans</i>	Loggerhead Shrike	C2	E
<i>Lycaeides melissa samuelis</i>	Karner Blue	C1	T
<i>Microtus ochrogaster</i>	Prairie Vole		T
<i>Microtus pinetorum</i>	Woodland Vole		SC
<i>Notropis texanus</i>	Weed Shiner		E
<i>Oecanthus pini</i>	Pinetree Cricket		SC
<i>Protonotaria citrea</i>	Prothonotary Warbler		SC
<i>Sistrurus catenatus catenatus</i>	Massasauga	C2	SC
<i>Spiza americana</i>	Dickcissel		SC
<i>Sturnella neglecta</i>	Western Meadowlark		SC
<i>Tachysphex pechumani</i>	(a sphecid wasp)		(E)
<i>Terrapene carolina carolina</i>	Eastern Box Turtle		SC
<i>Wilsonia citrina</i>	Hooded Warbler		SC
<u>Plant Communities</u>			
	Coastal Plain Marsh	G2	S2
	Lakeplain Wet-Mesic Prairie	G1?	S1?
	Lakeplain Wet Prairie	G2	S2?
	Oak/Pine Barrens	G2?	S2
	Dry Sand Prairie	G3	S2
	Dry-Mesic Northern Forest	G4	S4

Scientific Name	Common Name	US/GL	ST
	Dry-Mesic Southern Forest	G4	S3?
	Hardwood-Conifer Swamp	G4	S3
	Mesic Southern Forest	G3?	S3

KEY

Headings

US/GL Federal Status/Global Rank

ST State Status/State Rank

Federal and State Status Codes

E Endangered

T Threatened

SC Special Concern

() Proposed

C1 E or T considered appropriate but not yet officially proposed

C2 E or T may be appropriate but more information is needed

3C Not currently being considered for listing

Global Ranks

G1 Critically imperiled globally because of extreme rarity.

G2 Imperiled globally because of rarity.

G3 Either very rare and local throughout its range or found locally.

G4 Apparently secure globally, though it may be quite rare in parts of its range, especially in the periphery.

State Ranks

S1 Critically imperiled in the state because of extreme rarity.

S2 Imperiled in state because of rarity.

S3 Rare or uncommon in state.

S4 Apparently secure in state, with many occurrences.

Appendix H. Aboriginal/Archaeological/Historical Site Categories Receiving Special Protection Status, Allegan State Game Area

Aboriginal/Archaeological/Historical Site Category

Cemeteries/Burial Grounds

School/Church/Post Office/Public Building Sites

Homesites

River Boat Landings

Sawmill/Gristmill Sites

Native People Encampment Sites

Prisoner-of-War Camps

Abandoned Village Sites

Taverns/General Stores/Business Sites

Appendix I. Provision of Roads and Trails in Allegan State Game Area

The purpose of this document is to offer rationale for provision of DNR roads and trails in the Area. These exist as either service roads and trails for authorized (DNR) use only or as DNR-maintained open roads to the public as well. The objective for roads and trails in the Area is to provide infrastructure as needed to access state lands to meet Area goals. This combined infrastructure comes about as a result of roads in the public domain maintained by the Allegan County Road Commission or Michigan Department of Transportation and roads and trails controlled and maintained by the DNR.

History

The network of roads on the Area grew out of the land-use history of the Area. The first intensive use of the land came about as the Area was originally logged in the 1800s and 1900s. Roads were built to extract the logs. The land was then sold into private ownership whereupon farming was attempted on much of it. Roads and trails were needed to access farm fields. A road and trail network grew out of these uses of the land.

Political townships were the first governmental entity to consolidate control of these roads and provide maintenance. Often, they adopted the roads that were in common use. Later, this road maintenance function was largely consolidated under the Counties. To a great degree, the Counties adopted the infrastructure the Townships had amassed. For the most part, the Counties maintain the right to provide transportation services over these road rights-of-way, but the land supporting the roads continues to be owned by the adjacent property owner.

There is a process whereby adjacent landowners can petition the Counties to abandon control of road segments to adjacent owners. The Road Commission takes the lead in reviewing the petition with the public and the affected Township and then acts on the merits of the petition. Abandonment has been more often completed on short road segments which do not provide thoroughfare, especially dead-ends, that are included entirely on the property of a single landowner.

Land in the Area first came back into public ownership in the 1930s. It was exchanged into State ownership in the 1950s. As the mission for the property took form, it became obvious that the large number of roads on the Area was no longer needed to meet Area goals. Further, trafficking on these roads and trails interfered with accomplishment of these goals in many cases.

Beginning in the 1980s and 1990s, changes to this road and trail infrastructure were initiated. Roads segments were allowed to grow in and convert back to forest. Segments were closed to public use and barricaded. Petitions were made to the Allegan County Road Commission to abandon selected segments to the State. Many of these were subsequently closed to the public. Maps produced by the DNR were changed to reflect those roads that remained open for public use.

These changes resulted in improvements in our ability to reach goals and objectives set for the Area. Generally, habitat conditions were improved, and better control on the Area

reduced incidences of unwanted activity like refuse dumping, habitat damage by ORVs, and clandestine illegal activity. However, these changes also restricted activities of many recreationists and prompted concern regarding balance as actions to change the roads and trails infrastructure went forward. This expression of concern resulted in the development of guidelines that are used in decisions to develop or change the status of roads and trails.

Guidelines

The following guidelines are considered in actions to develop or change the status of roads and trails on the Area.

- All actions are considered on a case-by-case basis. The merits of the action are tied directly to the conditions surrounding the segment in question.
- Decisions to consider development or status change to a segment are shared with the public at a public meeting. This action is intended to facilitate public comment on the action.
- Result of decision, including timeframe for implementing change, is shared with the public at a public meeting. Rationale for action will be shared with the public to the extent that it is not contrary to other legal mandates. (For example, endangered species location information will not be shared as a part of this process.)
- Actions will be considered with respect to their result in furthering the goals and objectives of the Area in compliance with all applicable regulations and restrictions.
- Actions will be considered with respect to an Area goal of providing vehicle access within ½ mile of all points on the Area except for tracts identified and managed for remoteness.
- Segments considered for status as open to the public will be maintained, at least seasonally, in a condition to support conventional 2-wheel-drive vehicle use.
- Segments may be closed seasonally to protect disturbance-sensitive species or unique natural communities.
- Segments involving wetlands and other unique natural communities will be reviewed both with regard to potential damage and potential harm to community function.
- Segment status change will be reviewed with regard to anticipated potential damage to site. Demonstrated damage need not occur in order for this consideration to be valid (an example would be the potential routing of trail up a steep incline).
- Consideration will be given to the potential for a change to force excessive traffic onto remaining roads and trails.

- Consideration will be given to the potential for a change to result in increased traffic onto adjacent private lands or otherwise sensitive sites.

Appendix J. Series of Allegan State Game Area maps distributed to the public.