

South Branch Suamico Wetland Restoration

Chapter 1 Sustaining Habitat for Wildlife

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RESOURCE HISTORY Arrival to Allotment (1830's to roughly 1900)

During this period the Reservation hosted abundant fish and waterfowl resources, forest and wetland birds, amphibians, reptiles and mammals. Game species included waterfowl, deer, rabbit, grouse, bear, muskrat, and squirrel. Game fish included Brook Trout, sucker, Northern Pike, bass, Sturgeon, and Walleye. In fact, the current Reservation area in Wisconsin was chosen by the Oneida leaders in part because of the abundant wildlife, fish populations, and habitat diversity. The splendor of what the Reservation had looked like when the Oneida people first arrived has been well documented in stories and written literature. At the time of migration the area was largely forested and fish populations in Duck Creek and its tributaries were very high.

Land Conversion and Habitat Degradation (1900 to 1980's)

During this period, much of the Reservation's land was purchased by non-tribal groups and individuals, who cleared, and developed the land for agriculture. Most of the Reservation lands were sold off or lost through tax foreclosure. Land use practices and infrastructure development transformed both the vegetative cover and surface water quality on the Reservation. Trees were cut and land was cleared, major portions of the wetlands were drained and converted to agriculture, and streams and waterways were ditched and straightened. Along with the clearing and ditching came runoff pollution to streams; industrial development pollution, siltation and environmental degradation. Wetlands disappeared, populations of fish, waterfowl, and other game species plummeted, and streams lost their ability to flow throughout the year, which negatively affected future fish production. The fish populations that remained were contaminated and unfit for human consumption.



This time frame also included damming of streams and a loss of fish populations that require passage for spawning. Some of the land clearing, ditching and tiling was promoted and paid for by the federal government during the Works Progress Administration (WPA) programs of the 1930's. The land conversion period also resulted in waterfowl and forest animal species decline. It did include the introduction of Ring-necked Pheasants and cottontail rabbit numbers increased. Black bears were no longer present by the end of this period. When the Oneida Tribe began to buy back its land, the territory was nothing like it had been when the Reservation was established in the 1830's. Gone were the pristine waterways and wetlands, the forests, and the abundance of wildlife and fish.

The Buyback Period/Back to The Land (1980's to the present)

This era might be termed the resettlement period for Oneida community members. It is also a time when decisions on the future of the local natural environment are being made. Not only are Oneida Tribal members moving back to the land of their ancestors, but former wetlands and forested areas are being restored to a more natural condition. Since initiating the land buy-back program, the Oneida Nation has responded to the community's expressed desire to bring back as much of the original environment and wildlife abundance as possible. Toward that end, the Tribe has sponsored stream monitoring, wetland and surface water restorations, buffering of waterways, removal of dams, removal of flood prone and environmentally significant lands from agricultural production, wildlife monitoring, and protection and restoration of wetland and upland forests. Thousands of acres of formerly pastured and cropped lands are now being managed as natural communities. These efforts are resulting in increases in many forms of plant and animal life, cleaner surface and groundwater and opportunities for Tribal members to hike, hunt, fish and view wildlife in extensive areas here on the Reservation. By connecting blocks of undeveloped lands, corridors are being established that provide for viable populations of many species, both plant and animal. These corridors are most often associated with natural stream watersheds. Much of the emphasis in land purchase and management has been in protecting Reservation environments and expanding opportunities for community members to hunt, fish, and recreate.



RESOURCE DESCRIPTION

The current land management practices are paying off; the Reservation is becoming a green space in a sea of surrounding development. The forests are growing, creeks are again supporting game fish, deer and wild turkeys are abundant, large numbers of waterfowl are using Tribal lands for breeding and staging, and many forest, prairie, and marsh breeding bird species are found in abundance. A large percentage of forest, marsh, and grassland/prairie bird species that are relatively common here are considered threatened or endangered nationally and/or within Wisconsin. As the Tribe purchases more and more Reservation lands, there is an increasing opportunity for the Oneida people to impact local land management. Through restoration and management efforts, the waters are less polluted, the streams are flowing more naturally, and the forest, wetland, and upland habitats are functioning at a higher level. Increases in the populations of many native species, both plant and animal, have taken place.

Oneida can continue to foster diversity to improve the quantity and quality of habitat types on the Reservation. Forest re-establishment has been an identified priority over the past 20 years, yet some forest cutting practices are required to enhance environmental diversity on the Reservation and improve forest health. Habitat changes over time naturally modify the cover density and species composition in a given area. If a large portion of the Reservation's forest cover is made up of mature trees, species that require dense cover, feed on the ground, or feed in edge habitats will be largely eliminated. Forest bird surveys recorded that semi-open forests (those containing mature trees but with openings allowing for an understory to develop) contained a third more bird species and number abundance than did closed for- est communities. Some initial attempts have been made to maintain prairie habitats through burning and some wetland restoration projects have water control structures to manipulate water levels that can alter associated vegetative communities. Specific management practices will also be required to maintain appropriate habitats for medicinal plants, game, and preferred species.

As the Tribe moves from protection and restoration toward management of natural communities, the change will not alter the Reservation's environment in the short term (5-10 years) but it will make a fundamental difference in what species live here, their

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numbers, and what the environment will look like in the long term (Seven Generations). To make a fundamental change in land management, land managers need to reflect on management history and direction from the community. What should the management priorities be? Should managers be attempting to produce the most deer, wild turkeys, waterfowl, and pheasants possible, or should they be managing habitats as ecosystems, attempting to maintain homes for as many native species as possible over the short and long term. Since all species are of equal value, each species has a purpose and each is essential for the system to function as the creator intended. This management technique dictates maintaining diverse successional stages of uplands and lowlands, forests and prairies, wetlands and rivers, as well as lake plant communities.

Education is important in making the switch from managing each species individually to a broader approach of managing ecosystems for all species. Disturbance for forest or grassland health is often necessary to mimic natural conditions. Examples of disturbance include selective cutting of young trees and removal of woody cover. This is useful in habitat management, but the public often associates such disturbance with negative impacts. Such modifications are needed, however, because the natural events that traditionally have modified habitats (fires, fluctuations in predator, game species numbers, and pests) are often controlled and prevented. A mature forest is not the ultimate goal for all communities with trees. Clear-cutting may be appropriate at times to manage a community. Although often perceived negatively, a short-term loss of trees can provide for long-term environmental stability and diversity. Likewise, the burning of a prairie is not acceptable for some, nor is the plowing of lands that were in the Federal Conservation Reserve Program (CRP) for a number of years. However, some removal of plant materials may be needed to promote early successional stages, which are most beneficial to surface dwelling species.



When sunlight can penetrate to the ground it grows plants, buds, flowers, and seeds that are available for a variety of surface dwelling animals (deer, small mammals, rabbits, etc.) to use as food and cover. We need to maintain flexibility in our management techniques and philosophies in order to ensure a vibrant future of diversity on the Oneida Reservation.

Game Species

Game species populations are highly important to the Oneida Nation. The Conservation Department and the Environmental Resource Board review the Oneida Hunting, Fishing and Trapping laws annually to make necessary additions, improvements, and amendments in consultation with the Oneida hunting community. Sales of sportsman's licenses for hunting and the harvest rates for deer and turkey have remained strong and consistent over the past decade.

In 2010, 92 deer were harvested during the Firearm season, including 49 antlerless and 43 antlered deer. Thirty deer were harvested during the muzzleloader season. One hundred and sixteen turkeys were harvested during the Spring Turkey Season out of the 260 turkey permits issued. Three geese were harvested during the goose season. In 2008, 500 pheasants were released on Oneida Nation properties. Pheasant stocking was consistent from 2003–2008, when 300–800 birds were stocked each season.









Figure 1.3 Harvest Rate of Spring Turkeys Per Year





Birds

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> In 2007, 40 circular forest songbird plots were established and surveyed in seven Oneida Reservation forests. These forests ranged from semi-open wooded wetlands to rich mesic mature forest communities. Results included 60 breeding bird species. In the closed, relatively dry forest, the most often recorded species was the Eastern Wood-Pewee followed by the Ovenbird, Red-eyed Vireo, and Great Crested Flycatcher.

The semi-open (seasonally wet) forest communities were 33% more productive than were the dry mature woodlands. In those communities the Mourning Warbler was most often recorded followed by the Rose-breasted Grosbeak, Great Crested Flycatcher, Veery, House Wren, and Common Yellowthroat.

In summer 2008, 46 circular plots were established and surveyed for grassland birds. These plots were established in CRP, fallow, and reforestation parcels on the Res- ervation. Surveys recorded 35 breeding bird species with Clay-colored Sparrow, Red-winged Blackbird, Eastern Meadowlark, Savannah Sparrow and Bobolink being the most frequently recorded. The forest bird plots were re-surveyed in 2010; the grass-land plots are scheduled for surveys in 2011.



"Where the Waterbirds Nest" on Oneida Reservation

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Figure 1.5 Nesting Locations on the Oneida Reservation



Figure 1.6 Grassland and Forest Birds Monitoring Plots



The results of these surveys may be surprising to some. One would think that the most birds would be recorded in the most mature, tallest, most diverse forests. However, there were far more individuals and bird species in the regenerating and wet forests with openings and several layers of vegetation than there were in the mature upland forests. Why? Each of the layers (grasses, shrubs, forbs, small trees) in the regenerating and wet forests, provide food, cover, and breeding habitat for a variety of species. The mature forests only provide one community type. Mature forests with a high degree of crown closure allow little light to penetrate to the forest floor. These forests have little understory and provide little food or cover. The bird species present in mature forests are largely confined to the canopy, high above the ground. In regenerating and wet forests with various layers, many more species and individuals can find food and homes.

The breeding bird survey results indicate that the Oneida Reservation provides habitats for a rich variety of forest, grassland, and wetland dependent species, as well as, species that require edge and specialized communities. Many of the species recorded are in decline throughout much or other parts of their ranges. A majority are neo-tropical migrants (those that spend their winters in Central and South America). Many Oneida land parcels, which haven't been found appropriate for farming or housing development, have been left fallow, put into CRP, or reforested. Since 1998, 546 acres have been planted to forest. These uses result in grassland bird habitat for several years. Overtime these vegetative communities gradually change to shrubs and trees, eliminating their value for grassland birds. Habitat manipulation will be required on Oneida grasslands to maintain habitats for a diversity of rare and desired grassland bird species.

Clay-colored Sparrow	In decline in many parts of its shrinking range.
Eastern Meadowlark	On top 20 Watch List species for North American birds at risk.
Savannah Sparrow	In decline in many areas due to agricultural practices.
Bobolink	Species on top 20 Watch List for North American breeding birds.
Sedge Wren	Species is one of concern due to its dependence upon vulnerable habitat.

Table 1.1 Status of Rare Grassland Birds Found in Oneida



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Vesper Sparrow	Declines throughout range due to agricultural practices.
Field Sparrow	Species on the top 20 Watch List for North American species in decline.
Willow Flycatcher	On Audubon's Watch List for species at risk.
Eastern Towhee	Bird is considered in decline throughout its range.
Grasshopper Sparrow	On top 20 Watch List for North American species at risk.
Northern Harrier	Considered in decline throughout its range in North America.



Amphibians and Reptiles

Reptiles and amphibians living on the Oneida Reservation are vulnerable to disturbance, pollution, and habitat fragmentation. Most native amphibians (frogs and salamanders) are dependent upon ephemeral/vernal ponds that retain water until early August, spend their winters hibernating, and most spend their summers in extremely small areas. Amphibians are susceptible to pollution and changes in acidity due to their breathing through their skin. If conditions cause them to die out of an area they will not likely repopulate naturally.

Reptiles (snakes and turtles) were some of the first species studied in Oneida due to their known vulnerability and threatened status nationally and within Wisconsin. A tagging program for Wood Turtles along Trout and Duck Creeks took place from 1978 to 1987. In 1993, a contractor was hired to determine the species of amphibians, snakes and turtles that occur on the Reservation. In 2009, a program was initiated to determine salamander presence. There have been nine species of amphibians, five snake species, and four species of turtles identified as making their homes on the Reservation.

With the restoration of more naturally functioning ecosystems here on the Reservation, reptile and amphibian populations should prosper. Population monitoring will identify areas where species no longer exist and re-introductions may take place. A strong case for salamander and frog restorations relates to their feeding on mosquito larvae in semi-permanent wetlands that do not contain fish.

Small Mammals

Small mammals are often categorized as those species not considered fur bearers or small game. They usually include chipmunks, voles, mice, shrews, moles, and Pocket Gophers. They usually don't include arboreal squirrels (gray, fox, red, flying), mink, weasels, muskrats, or rabbits. There is very little knowledge of these animals locally and they are much misunderstood and/or under appreciated. Often referred to locally as mice or moles, there is in fact only one mole species in Oneida, and many more species of voles and shrews than mice. These animals provide the food chain with primary prey species, allowing for hawks, owls, foxes, coyotes, mink, and weasels to maintain populations here in Oneida. Small mammals include both predators (shrews and Star-nosed Moles) and plant eaters (voles, mice, chipmunks, and ground squirrels). Dozens of species belong to this group of animals and each possesses unique habitat requirements. Beginning in 2010, work is underway to determine presence/absence of these species so they can be included in future management planning.

COMMUNITY SUGGESTIONS AND FEEDBACK

Following are some prominent needs derived from Oneida Tribal member surveys:

- More viewing and hunting opportunities
- More natural communities
- More forested areas
- More opportunities for berry picking
- More opportunities for viewing nature
- More opportunities for picking medicinal plants
- More fish and fishing opportunities
- Maintenance of a rural environment on the Reservation

From a wildlife perspective, these identified Reservation needs translate to; restoration and management to establish and enhance natural communities supporting a diversity of species, improve water quality, increase viewing and hunting opportunities, and control invasive species. Toward that end, lands have been identified for wetland and stream





Pygmy Shrew, Meadow Jumping Mouse, and Masked Shrew

rehabilitation, forest plantings, invasive species identification and control, and hunting and recreation. The Environmental, Health & Safety Division (EH&SD), the Division of Land Management, and the Development Division are actively taking steps to reach these goals.

The Live, Sustain, Grow survey results show that over 70% of Oneida Tribal members are satisfied with deer and turkey populations and over 50% are satisfied with waterfowl and small game populations. Upland game and fur bearer populations (beaver, coyote, Red ²¹ Fox, Gray Fox, otter, muskrat, badger, ermine, mink) are areas Tribal members noted as needing improvement. Most of these species are predators that require large areas of habitat, so it may be difficult to allocate sufficient areas for them on the Reservation. This is another instance where regenerating habitats produce more diversity by supporting the small herbivores (Meadow Vole, Red-Backed Vole, Deer Mouse, Meadow Jumping Mouse, chipmunk, Cottontail Rabbit, etc.) and small predators (Masked Shrew, Water Shrew, Pigmy Shrew, Star-Nosed Mole, Least Weasel, Short-tailed Weasel, mink, etc.), which larger fur-bearing predators eat as prey.

Regarding the importance of natural resource and landscape features, 95% of Oneida Tribal members support streams and surface waters, 94% support forests and wooded areas, 93% native plants and animals, 89% grasslands, 86% farms and farm fields, and 85% wetlands/marshes. These results suggest that Tribal members want a Reservation with diverse habitat types. The challenge of Oneida resource planners is to develop plans and land strategies to reach those goals well into the 21st century and beyond. Wildlife management activities were also viewed favorably by the Oneida community. Over 75% of those responding stated support for restoring habitat for wildlife, maintaining diversity/good variety of wildlife, and the research and monitoring of wildlife. Additionally, 72% support wildlife corridors, planting food plots for wildlife, and creating wildlife refuges. The Oneida Conservation Department, Environmental Quality, and Environmental Resource Board are working collaboratively with other departments on planning new opportunities for wildlife initiatives and natural resource management for the future of the OneidaReservation.



Figure 1.7 Importance of Natural Resources and Landscape Features

GOALS AND OBJECTIVES

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A grassland is more than grass just like a forest is not just a bunch of trees. There are intricate species inter-relationships that are essential to maintaining a balanced natural system. Once a system has been disturbed it is very difficult for it to recover to its former level of species diversity and stability. We often think of a forest as a group of mature trees much like what occurs over much of the Menominee Reservation. In reality, a forest contains regenerating openings, small trees, large trees, and wetlands. All those community types are necessary to sustain a maximum amount of species diversity over a landscape. If the growing part of a tree or shrub is above what a ground dwelling animal can reach, that animal will not be found in that area. The closer to the ground the growing portion of a plant is, the greater the opportunity for ground dwelling species to use that plant as a food source.



Furthermore, there are species that will make use of almost any habitat, some species require strictly open areas, and some only live in the densest of tree canopies. There are advantages for all these survival strategies. Specialist species are dependent upon a single food source, say acorns or pine seeds. As long as their primary food source flourishes, they can live comfortably within a relatively safe environment. If that food source should fail, these species are greatly disadvantaged. Failure could result from land use changes or from the invasion of an exotic species. Generalist species feed on a variety of foods. They are not adapted for any particular food and can use a variety of food and cover types. Many of these generalist species have recently been very successful due to the presence of humans and their impact upon the landscape. The crow, raccoon, skunk, possum, deer, and wild turkey are examples of generalist species. However, with the assistance of restorative projects and Oneida's expanded land purchases, there are a number of specialist species currently flourishing on the Oneida Reservation as well, such as birds like the Bobolink, Eastern Meadowlark, Sedge Wren, Red-headed Woodpecker and Red-shouldered Hawk and amphibians like the Wood Frog, Green Frog and Spring Peeper. Monitoring and management planning will need to take place to ensure that habitats remain for future generations of these specialists.



Figure 1.8 Habitat Survival Cycle

Management Plans and Habitat Modifications

Implement long-term land management plans for Tribally owned forests, grasslands, and wetlands that will maintain a rich diversity of plant, bird, amphibian, mammal, insect, mollusk, fish, and reptile species within the Reservation's boundaries.



Grassland birds, along with aquatic communities, are considered in critical need of management because they are the species groups requiring habitats most impacted by human land use, succession, climate change, and fragmentation.

Plans will require prioritizing species of most significance, and developing strategies for managing habitats to maintain those species. They will also consider management needs for indicator species, species at risk, and species diversity for the future. Habitat suitability indices will need to be recognized for various species and management plans will be made to ensure suitable habitats are available for a wide variety of species over the long term.

Habitat modifications will be a part of the planning and implementation process to ensure diversity.

Community Relationship to the Natural World

- Ensure that community members have extensive areas to hunt, fish, hike and enjoy nature.
- Ensure that land management is based upon community needs, appropriate land use, zoning guidelines, etc.
- Make sure game species are not overexploited, habitat quality is maintained, access is afforded to community members, and habitats are managed to maintain species diversity.
- Provide educational programs for community members of all ages to engage in hands-on experiences (field trips, volunteer opportunities, etc.).

BENEFITS ASSESSMENT

Planning for the future will be more than simply setting areas aside and letting plant succession occur overtime. Many areas of state and federal lands lack such management and overtime have become important deer cover while their plant and animal diversity has diminished. Reservation management will require careful planning to ensure that

sufficient sized habitats are available for all the species being managed. The Oneida EH&SD realizes that managing for a diversity offorest, grassland, wetland, and edge species becomes more critical overtime as available land areas may incrementally shrink due to residential development, agricultural production, and other land use development activities. Most importantly, processes will continue to inform and involve the community at all stages in the development of natural resource management planning. The community must continue to be informed and support the land management programs if these programs are to succeed on the Oneida Reservation in the short and long-term.

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Environmental

 Sustain a maximum amount of species and habitat diversity across a thriving Oneida landscape.

Social

- Increased community pride from scenic and natural beauty and bounty.
- Better health through exercise by providing hiking and biking trails.
- Community relationships and opportunities for community members to participate in group outdoor activities.

Cultural

- Cleaner air and water.
- Passing an improved environment to the next generation.
- Creation of an environment that will encourage young people to live on the Oneida Reservation (keeping young people in the community).

Economic

- Less need for members to spend money for recreation off the Reservation.
- Less crime and delinquency as young people have more things to do.
- A healthy environment will foster local business developments.

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Food

 Increased opportunities for successful hunting, fishing, and foraging for medicinal plants, nuts, and berries on the Reservation.

IMPLEMENTATION PLAN

- Inventory existing habitats and their inhabitants, including improved details on:
 - ▶ What do we have?
 - What do we want more of?
 - > How might we keep what we have and get more of desired resources?
- Implement management plans on large habitat blocks.
 - Manage communities utilizing habitat modifications to provide for continued native species diversity.
 - Treat habitats as essential resources in Oneida's portfolio; provide for wildlife and for the quality of human life.
 - Sustainability for game species (deer, turkey, pheasant, waterfowl, etc.).
- Monitor habitat change overtime and plan for future management.
 - Modify habitat for species in decline.
 - Provide for desired species (food plots).
 - Set triggers for habitat management actions.
 - Identify and control invasive species.
 - Identify climate change as having an impact now and in the future.

- Community Involvement
 - Advertise and maintain trail systems.
 - Encourage hunting and fishing.
 - Encourage safe biking and hiking opportunities.
 - Provide wildlife viewing areas.
 - Encourage public feedback on land use and values.
 - Continue to keep the community informed through educational outreach, Kaliwisaks articles, community events, and questionnaires.
 - > Provide opportunities for guided nature hikes on Oneida Tribal lands.
 - Establish self-guiding nature hiking trails.



