HISTORY OF THE WILDLIFE AREAS

Iroquois National Wildlife Refuge



Oak Orchard Wildlife Management Area



Tonawanda Wildlife Management Area



John White Wildlife Management Area

By Thomas "Dan" Carroll February 2001

The New York State Oak Orchard, Tonawanda, and John White Wildlife Management Areas and Iroquois National Wildlife Refuge By Thomas "Dan" Carroll

These adjoining wetland areas in Orleans, Genesee, and Niagara Counties total more than 20,000 acres and comprise what may be the most productive and useful wildlife and recreational inland wetland complex in the eastern half of the United States (Perry).

Geological History of Western New York

The surface of Lake Ontario, the lowest of the Great Lakes, is 245 feet above sea level. From its southern shoreline, a gently sloping plain extends southward for seven miles to the base of the Niagara escarpment, a limestone formation that rises abruptly to a height of about 200 feet above the Ontario plain and stretches for miles eastward and westward. The Niagara River, draining the waters of the upper Great Lakes, cuts through this escarpment at Niagara Falls in Niagara County. By eroding the softer shales beneath the thick, resistant limestone capping and causing the latter to break away in huge blocks, the descending waters of the river, over thousands of years, have gradually cut back the crest line of the cataract and excavated a deep, broad channel for seven miles upstream to the present site of Niagara Falls.

Farther southward, along an approximately east-west line that crosses the Niagara River at its source, is a second but lower limestone cliff, the Onondaga escarpment. Between its foot and the crest of the Niagara escarpment, the terrain is known as the Huron plain. The Oak Orchard and Tonawanda Wildlife Management Areas and the Iroquois National Wildlife Refuge are located in the Huron Plain. While drift-covered in places of low relief near Buffalo, the Onondaga escarpment becomes more pronounced in the towns of Clarence and Newstead, Erie County, reaching a height at Akron of nearly 100 feet above the Huron plain. The Onondaga escarpment is the northern limit of the Erie Plain, which runs south to the Portage escarpment at a level between 600 and 900 feet above sea level.

The consolidated rocks of the region are all of sedimentary origin, having been deposited in the Paleozoic Seas that encroached upon the interior of the continent during the Silurian, Devonian, and Carboniferous periods. Owing to recurring subsidence and elevation of the continent, there were successive periods of submergence and emergence, with oscillations of the shorelines so that the ratio of water to land area fluctuated continually and the character of the deposits varied accordingly. The mud-flats of tidal waters and the clayey ooze of deeper waters eventually became hardened into shales; remains of shells and coral reefs, as well as chemically precipitated calcium carbonate, went into the

building up of limestone formations; and beds of sand and deposits of beach gravels were cemented into sandstones and conglomerates.

The Medina sandstones and shales are believed to be sediments deposited into the seas of the lower Silurian period by streams cutting the Adirondacks and the Canadian highlands. With a deepening of the seas in the middle Silurian period, massive beds of limestone were formed largely from the detrital material of coral reefs in shallower water. The Niagara escarpment was formed at least in part at this time. In the early Cayugan epoch, an elevation of the continent is indicated, accompanied by shallowing seas and higher temperatures. Rapid evaporation of the water in lagoons and landlocked basins resulted in the deposition of gypsum beds, followed by deposits of clayey limestones. A general withdrawal of the water from this portion of the continent occurred during the close of the Silurian period.

During the early part of the lower Devonian period, much of the region was land, but later in the period, the Oceanic waters again invaded the territory. The Onondaga limestone formation seems to have been built up, at least in part, from a coral reef in a warm, clear sea. This formation, with a thickness of more than 150 feet, marks the last limestone building epoch of any consequence in the region. The sediments that followed in this period consist of extensive deposits of shales intercalated with layers of limestone from a few inches to eight feet in thickness.

In the upper Portage beds, as well as in the Chemung formation, sandy shales alternate with layers of sandstone. The seas again retreated at the end of the Devonian period. Deposition resumed, with an ensuing withdrawal of the seas, in the early Mississippian era. Later in this era, fluctuating seas again encroached on the land. In the Pennsylvanian period, shallow seas penetrated at least as far south as southern New York State, where they left deposits of shales, sandstones, and conglomerates.

Toward the end of the Paleozoic era, the level of the entire region seems to have been raised as a result of the general Appalachian uplift, never again to descend below sea level. As a result of this uplift, there was no Ontario basin or Mohawk Valley, just an unbroken south-sloping plain extending from Canada to Pennsylvania. The present northerly flow of the Tonawanda Creek is the reverse of the primitive southerly flow. This reversal was brought about by erosion. While deepening their channels, the erosion compelled the streams to adjust to the structure, character, and varying resistance of the rock strata.

The primitive south-flowing streams crossed several belts of rock outcrops, while their tributaries flowed east and/or west along these outcrops. Some tributaries that occupied the weaker belts of rock had an erosional advantage and extended themselves by headward cutting until they tapped adjacent streams or rivers. In this manner, these secondary streams beheaded some of the

south-flowing streams and became master streams. Gradually, the east- and west-flowing tributaries that occupied the wide belt of very thick and very weak Ordovician rock developed into the great master stream, Ontarian River, which occupied the Ontario Valley (Lake Ontario basin) and flowed either to the Atlantic Ocean or to the Mississippi River.

As the Ontario Valley deepened, it simultaneously widened, and strong, north-flowing streams developed on the southern wall of this broad valley. These north-flowing tributaries, the reverse of the primitive southern flow, extended themselves southward by headward cutting into the Appalachian Plateau, eventually capturing it.

The parallel valleys of west Central New York were excavated by this northward drainage into the Ontarian River. In sequence from west to east, these valleys are the Tonawanda, Oatka, Genesee, Conesus, Hemlock, Honeoye, Bristol, Canandaigua, Flint, Seneca, Gayuga, Owasco, Skaneatles, Otisco, Onondaga, Buttermilk, Limestone, and Chittenango.

During the Mesozoic period, the land surface was the scene of a long cycle of erosion that considerably reduced the general level of the region. In this leveling process, the Niagara and Onondaga escarpments came to stand out in bold relief because the more resistant limestone caps withstood erosion more effectively than the softer strata cropping out to their north.

Glacial and Post-glacial History

"At the beginning of the Pleistocene epoch," Kindle and Taylor are inclined to believe, "the general region (Niagara, Orleans, and Genesee Counties) must have presented the same broad physical features as present—that is, it consisted of several dissected but nearly level plains, arranged in a series of terraces or steps, descending northward and separated by low northward-facing escarpments."

A series of events of profound influence on the drainage and topography of the region, as well as on the development of its plant life, occurred during the Pleistocene period when the gradual refrigeration of the climate ushered in the great ice age. The ice sheet that invaded New York is called the Laurentide ice sheet. It started in the Laurentian Mountains of Quebec and uplands of eastern Quebec and Labrador. Almost all of New York state was covered by the ice. Interglacial periods and warmer intervals were successively followed by renewed advances of the ice sheet. Plant life in the path of the glaciers withdrew southward or remained and perished.

After partially filling the Ontario valley, and so extinguishing the Ontarian River, the conquering ice sheet invaded New York. During its advance, it dammed all of the north-flowing streams. Glacial lakes were held in the valleys, and all the waters were forced to a southern escape. Finally, the glacier covered the entire Genesee region.

The ice sheet spread as a plastic solid. In its rubbing, grinding, crushing, transporting, and depositional work, it modified the overridden surface of the land. However, it did not change the larger features or gross topography of the land. The Ontario basin and lowland and the valleys and intervening ridges remained the same. On the valley walls, though, the glacier had an erosional effect, a sort of sandpapering process. This mild erosion helped to produce the generally even surfaces and graceful convex slopes of the parallel valleys, as seen in the Hemlock, Dansville, Conesus, Nunda, and Warsaw valleys.

With the gradual return of a more temperate climate, the ice—as much as a mile high—began to melt, its front retreating northward at intervals and leaving in its wake deposits of earth and rocks that had been carried down from the north. These accumulations of glacial debris are known as moraines. Moraines are generally largest and best-developed at the glacier front. If the rates of ice flow and of melting are about equal, so that the ice front remains nearly stationary for a long time, the debris released from the melting ice accumulates to great hummocky ridges. As the ice front often fluctuated with minor climatic changes, however, more than one morainal ridge commonly formed. The farthest advanced is the terminal moraine; those formed during halts in a glacial retreat are recessional moraines. The ridge that Route 77 (Lewiston Road) follows is glacial till and probably the remains of a recessional moraine. Between these morainic dams and the retreating ice front, as well as in other depressions, the melting glacier formed lakes, ponds, and shallow basins. In this manner, the origin of the Great Lakes is accounted for, Lakes Erie and Ontario being regarded as the dwindled successors of a series of much larger glacial lakes.

In one of the earlier glacial periods, the entire area was covered by glacial Lake Lundy. This lake is responsible for a large amount of the reddish-colored clay sediments. About 10,000 years ago, the Oak Orchard and Tonawanda Swamps were covered by glacial Lake Tonawanda. This lake was located in a shallow basin between the Niagara escarpment on the north and the Onondaga escarpment on the south, and its water came from the southern hills. Geologists' maps show that this lake extended from the Niagara River approximately 50 miles east to Holley. The western part of the lake was the widest, about six or seven miles. When the lake was the largest, it drained north, spilling through several notches in the crest of the Niagara escarpment. In each case, these outlet streams formed falls down the face of the escarpment and began to erode deep gorges. The outlet farthest west, the Niagara River, was the largest and, therefore, eroded its gorge more rapidly than the smaller ones. This erosion lowered the level of Lake Tonawanda so that the only outlet which continued to flow was the Niagara River. This process eventually created a deep swamp or shallow lake in the poorly drained areas of Amherst, the Tonawanda Swamp, the Oak Orchard Swamp and the Elba mucklands. The Oak Orchard Swamp and Elba mucklands were also preserved over time by the Niagara escarpment, which resisted the cutting action of northerly flowing streams, especially Oak

Orchard Creek. Minor gorges that started as outlets of Lake Tonawanda can be seen at Lockport, Gasport, Medina, and Holley. This lake received olive and brownish sediments that were deposited over the red clay.

Many of the sand hills on the state and federal areas were originally formed as sandbars in glacial Lake Tonawanda, while other hills were formed by wind deposits on the beaches of Lake Tonawanda as it slowly disappeared, due to changes in drainage. The sand hills that were formed by wind deposits (sand dunes) are characterized by very fine white sand, finer than the water-laid deposits found in sandbars. An example of a sand dune is located east of Meadville Road on the Tonawanda Wildlife Management Area.

As mentioned before, the road bed of Route 77 is the remnant of a recessional or medial moraine. This moraine is incomplete, both east and west of Cayuga Overlook on the Iroquois National Wildlife Refuge, because the melt waters from the receding glacier washed out sections of the moraine. Many of the sand hills along and south of Route 77 are deltic deposits formed by streams from the melting glacier. Another deltic deposit is located at the south end of Hellert Road on the Tonawanda Wildlife Management Area.

The last large glacial lake to disappear was Lake Iroquois. This ancient predecessor of Lake Ontario was created when the Laurentide ice sheet dammed the St. Lawrence Valley. The southern shoreline of glacial Lake Iroquois, the ancient predecessor of Lake Ontario, has served as a ready-made roadbed for Ridge Road that runs from Lewiston to Rochester and, therefore, is sometimes referred to as "the road that God made."

After the ice age and the draining of glacial Lake Tonawanda, shallow pools spread over many sections of the Oak Orchard and Tonawanda Wildlife Management Areas and the Iroquois National Wildlife Refuge due to poor drainage. In time, with the northward advance of vegetation into the formerly glaciated territory, aquatic and amphibious plants invaded the shallow pools, thereby converting them into bogs. The shallow pools or ponds became bogs by two processes: one, the filling in from below by the accumulation of dead plant remains at the bottom of the depression; and two, by the closing in of the pond or pool sideways by the outward spread of water-loving plants anchored to the shoreline. In a bog, there is no outward flow of water and very little surface inflow because of the lack of drainage. Very little oxygen diffuses through the stagnant water and saturated vegetation. Without oxygen, the bacteria responsible for plant and animal decay cannot live.

Gradually, this partially decomposed plant and animal matter accumulated to form peat. It was through this process that the peat found on the state and federal areas was formed.

As the bog is filled through the accumulation of plant and animal matter, the drainage of the bog is improved and a swamp develops. Swamps develop in low-lying areas where there is an outward flow of water. Due to the improved drainage, more oxygen is made available to the decomposing plants. With decomposition being more complete, muck layers up to 24 inches thick were formed on the state and federal areas. One of the substrates found under the muck is marl, which is actually made up of tons of dead tiny freshwater snails, clams, and other mollusks. These creatures used to inhabit Lake Tonawanda, and when they died, their shells remained intact and fell to the bottom of the lake. Most of them were crushed, but many remain in excellent condition after being preserved below the layers of muck and marl. Marl has also been observed on the Oak Orchard area south of Oak Orchard Creek.

The Oak Orchard Swamp, which includes the Oak Orchard Wildlife Management Area and the Iroquois National Wildlife Refuge, was created as a result of the Niagara escarpment. Here, dolomitic limestone resisted the cutting action of Oak Orchard Creek, forming a natural restriction. It is a result of this restriction that the peat formations and muck layers built up on these two areas and, to a greater degree, farther upstream near Elba.

The Tonawanda Swamp, which includes the Tonawanda Wildlife Management Area, is separated from the Oak Orchard Swamp by a low height of land running along Lewiston Road. The peat formations and muck layers found on this area were formed by disrupted drainage due to the advance and retreat of the glacier, not as a result of the dolomitic limestone restriction in the Niagara escarpment.

Recent History

As the glacier receded, it dropped its fertile burden in long ridges. Its waters, filling the gouged-out depressions, became the slim Finger Lakes. A few waterways, such as the Genesee River and Tonawanda Creek, survived their pre-glacial birth.

When the rocks had crumbled into rich topsoil, mighty forests took over the land. Birds, mammals, reptiles, fish, and amphibians followed in their wake. Then came the time-dimmed Indian invasions of the Mound builders and the Algonquins.

The Kah-Kwahs, or Neuter Nation, immediately preceded the Senecas in this area. Their village, Tu-Shu-Way, or Place of the Linden, was at the bend of the Tonawanda Creek in Batavia at the site of the Holland Land Office and at Indian Spring, now preserved on the premises of the Emmanuel Baptist Church across the street. According to one account, a great sporting event between the Neuters and the Senecas at this spot led to a misunderstanding which resulted in the Neuters' defeat and their absorption into the Seneca Nation.

The Neuters inhabited the territory contiguous to the Niagara River and the eastern end of Lake Erie, while the Senecas were the aboriginal inhabitants of what is now Genesee County. The Neuters refused to join the Iroquois Confederacy, which came into being, it is thought, around 1450. Several Iroquoian tribes had drifted eastward many centuries earlier from the valley of the Columbia. The Five Nations were composed of the Mohawks on the east; next west being the Oneidas; then the Onondagas; the Cayugas; and, finally, the Senecas. About 1712, the Tuscaroras became the Sixth Nation of the Confederacy, after their expulsion from North Carolina. The Senecas gave them land near Lewiston which had belonged to the Neuters.

Landmarks

Old Fort

Throughout the town of Oakfield, Indian mounds and earthworks exist. They are the most remarkable and best preserved of any in the state. The best preserved is about one half-mile west of Oakfield and is known as the "Old Fort," consisting of a ditch and breastworks, and including about ten acres of land. The ditch is now about six feet in depth, calculating from the top of the embankments, and contains every evidence of artificial grading and engineering skill. In a part of the works, now under cultivation, are traced ancient lodges and a supply of broken pottery. The west side of the fort is formed by a ravine, through which flows "Dry Creek."

Trees, apparently 300 years old, have grown upon the works. Also on the west side are passages with sides built up of stone. A mile to the northeast is "bonefort" which, when the first settlers came, was yet perfect in detail, but only scattered fragments of bones mark the spot now. Samuel Kirkland visited the spot in 1788 and said the Senecas called these forts Te-gat-ai-neaa-ghgue, or double-fortified town (a town with a fort at each end). Proof of occasional invasions from neighboring tribes is indicated by the several gateway openings, the way the center is dug to water, and the great age of the works and other citadel of the ancient Senecas.

Neuter Fort

About 1550 A.D. there was a village located in Orleans County about 1 mile west of Shelby Center. A now missing State marker on the site read "NEUTER FORT OCCUPIED IN 14TH CENTURY BY NEUTER INDIANS. ONLY DOUBLE PALISADED FORT IN NEW YORK STATE. DESTROYED BY IROQUOIS 1650." Who these people were at Shelby, will probably never be known for certain. The state marker and some publications call them Neutrals but this is questionable. They were probably Wenroes or possibly even early eastern Eries. It is believed that this fort thrived for about 250 years. The fort included a circular fortification, which was walled in with a double palisade of posts with a ditch between. The posts were pointed at the top. At the outer

entrance of the fortification stretched a broad, shallow lake. In 1871, a description was provided by Arad Thomas, Orleans County historian. The lake was dried up then, and there was no trace of the wooden pickets. Nevertheless, the ditch of this "ancient work" was still well defined and several feet deep. Mr. Thomas estimated that the palisades enclosed about three acres of land. In the enclosure were piles of stone, that could be thrown or hurled by a sling.

At Shelby small stone line-sinkers and bone fish hooks have been found and a fishing village of these people has, by artifact comparison, been located near Waterport. Considerable material including human bone have been found in their refuse dumps proving the existence of cannibalism. Human flesh was probably eaten in the belief that qualities such as strength or bravery would be passed on to the recipient. From a study of human remains and type of burial, it is evident that many people had been victims, killed deliberately by the Shelby inhabitants. It appears, also, that the enemy was buried to keep his spirit from haunting his murderers. One skeleton was found with charred leg bones and was probably burned at the stake. Another was found with no skull; another with three crushed vertebrae, killed possibly by a blow from a stone axe while running the gauntlet. It is quite possible that many of the victims found in the cemetery were Senecas. A female, who probably died of natural causes at about 30 years of age, was found with a clay pipe in her hands.

As with the Huron Indians, the Shelby people also employed an ossuary in addition to the cemetery. Here the deceased were interred after a certain length of time into a large pit which some times contained hundreds of skeletons. The long bones were placed in the ground first, then the skulls were placed carefully on top in an upright position. The Shelby ossuary existed some half mile west of the fort, on a gravel knoll. Here scores of skeletons were unearthed during graveling operations many years ago. The Shelby people were not "a race of giants" as was once reported. A bone study indicated a height of no more than five feet and eight inches.

Ever since the white man settled in the region, he had been curious about this fortification and what happened to its defenders. Early residents have found many bone awls, bone beads, clay and stone pipes, stone tools, stone triangular points and a large quantities of potsherds. The largest collection is now at the State University of New York at Buffalo which was donated by Richard McCarthy of Lockport. Charred corn, beans, squash and nuts show in part what their diets consisted of. It is not known where these people at Shelby came from, however, a study of various sites indicates that they moved in a south westerly direction when they left.

Some historians are convinced that the fort was attacked and destroyed by the Iroquois in about 1650 because the occupants would not join the Indian Confederacy.

Feeder Canal

The Feeder Canal was developed from 1823 to 1824 to flow water from the Tonawanda Creek watershed to Oak Orchard Creek, where it was to be utilized in the operation of the Erie Canal. It was first dug by men using hand shovels and wheelbarrows. Planks were laid on saw horses to provide a path that men could use to wheel away the dirt. The first feeder was just east of its present site.

According to design, this canal was to be constructed with a depth of three feet and a width of twelve feet for approximately 4.5 miles starting at Tonawanda Creek. However, in the Tonawanda Swamp, the feeder was constructed 100 feet wide with an island or spoil bank 40 feet wide in the center, which was supposed to be washed out by the flow of water. This never occurred. A dam was built across Tonawanda Creek six feet high to force water into the canal. This was called the "Feeder Dam." Most of the spoil from the canal was placed on the west bank or in the central spoil bank, which allowed the canal to intercept all the drainage from the east. In 1829, the feeder dam was washed out by Tonawanda Creek flood waters. This was replaced, and the feeder canal was repaired the following year. Also, a bulk head was built across the canal with gates so that the flow of water into the Feeder Canal could be regulated. In 1834, landowners filed a petition claiming that the dam and canal caused the flooding of their properties. Therefore, in 1840, the Canal Board removed the old dam and replaced it with a new, three-foot-high dam. The bottom of the Feeder Canal was also lowered by three feet and built to uniform dimensions (20 feet wide at the bottom with 2-to-1 side slopes). The banks were raised, and the channel was extended another half-mile to the north. The channel extension included approximately 3,000 feet of Oak Orchard Creek located north of the Feeder Canal. The new dam and bulkhead, which contained four gates (3' x 4') were made of stone. At this time, the bulkhead and gates were located at the mouth of the Feeder Canal and were designed to keep Tonawanda Creek flood waters out of the feeder. In 1845, the Feeder Dam was damaged again by flood waters and had to be repaired.

In 1863, the Oak Orchard Creek portion of the Feeder Canal was excavated two feet deeper and to a width of 40 feet. The purpose of this improvement was to enable landowners, particularly those east of the feeder, to drain the swamp by ditching the water to the feeder and Oak Orchard Creek. In 1893, the feeder was improved again—this time because the saturated condition of the swamp was a menace to human health. These improvements included cleaning the Feeder Canal south of Coon's Bridge (Dunlop Road) to Tonawanda Creek. The work also included the cleaning and deepening of Acer Ditch, an artificial channel connecting the old bed of Oak Orchard Creek to the feeder at Coon's Bridge. Acer Ditch is at the location of the new or straightened channel of Oak Orchard Creek. All the spoil was put on the west side of the canal to build up a roadway (Feeder Road) and to prevent water from running over the road in flood stages. In 1914–1915, a company

from Elmira made the last attempts to maintain the Feeder Canal. This work included the repair of the Feeder Dam and head gates at Tonawanda Creek and the widening and deepening of approximately 5.1 miles of Feeder Canal located south of Coon's Bridge.

Approximately 4.5 miles north of the dam, the Feeder Canal is met by Oak Orchard Creek. From there, the canal proceeds north to Shelby Center, where it was utilized for many years to turn the huge water wheels that were used to grind flour for the Shelby Flour and Feed Mill. The Feeder Canal continued to Medina, where it flowed into the Erie Barge Canal. However, in later years, it was reconstructed to flow under the Barge Canal.

Some time after 1840, the gates in the Feeder Canal were moved about one-quarter mile north of the Feeder Dam. Then, in 1920, the gates were moved north of Whitney Creek (Hunters Creek) to divert Whitney Creek water south to Tonawanda Creek. This was a complete failure, as the area was flooded the next spring. These gates were moved back to the original site soon after. Gate tenders were hired by the state to maintain the water level in the Feeder. Records show the following gate tenders: 1900–1920 Charles Green, 1920–1932 Charles Pafk. In 1928, the dam was taken out of Tonawanda Creek. Later, the gates were replaced with permanent piling to eliminate all flow from Tonawanda Creek. However, it should be noted that, on several occasions since the feeder was constructed, claims were brought against the State of New York for damages due to flooding.

Initially, Feeder Road was the main route from Akron to Medina and was connected to the Indian Reservation by a bridge across the Feeder, just north of the Feeder gates. In 1926, one of the town trucks broke through the bridge; Elmer "Susie" Marble was the driver. The state maintained the road until its 99-year lease ran out. Area residents always used the canal as a recreation area for swimming, skating, hunting, trapping, and fishing. Some of the early settlers along the canal were as follows: Backman, Klawson, Manke, Kraatz, Hodgin, Scharlau, Korkow, and Reak.

The Feeder Road area north of Route 77 was mostly abandoned after the state lease ran out, but the area south of Route 77 was actively farmed until 1965, when it was purchased by the Conservation Department as part of the Tonawanda Wildlife Management Area.

Reynolds' Tavern

Records show that, in 1808, the Reynolds' Tavern was built on the northwest corner of Lewiston and Meadville Roads. It was a stage coach stop between Batavia and Lockport and a rest haven for the early settlers. On November 10, 1832, a post office was established in this tavern. David Young was the first and only postmaster. His term of office lasted until January 29, 1836, when that office was discontinued. Through the years, this intersection has been referred to as West Alabama and Gilberts Corners.

In 1882, Franklin Newton purchased the tavern and farm from Valentine Reynolds. Farm records show it was called "Sunny Side." In the early 1900s, the house or tavern was rebuilt, and the Newtons lived on the farm until 1915, when it was sold to Clifton Gilbert and remained in the Gilbert family until the state purchased the land and buildings. The buildings have since been destroyed.

A common story associated with this tavern is about a man who drank too much and began bragging about a robbery he had committed. He told how he had just gotten off the old horse-drawn railroad and buried his sizable loot in a sand dune. The man was arrested. Naturally, the story of buried treasure in the local sand dunes has fired the imaginations of treasure hunters ever since.

Oak Orchard Acid Springs

On the Sour Springs Road in the town of Alabama were the Spring House and the famous Oak Orchard Acid Springs. Eight springs were discovered within a circle of 50 rods on a little hill 2½ to 4 feet above the surrounding area. The water from these springs was analyzed, and it was found that three were of an acid nature—one sulphur, one magnesia, and one iron. One was of a gaseous nature, supplying enough gas light to light 50 gas burners.

Isaac Colton, a Lockport lawyer, bought these two parcels of land in 1850 and transformed the tavern into a 37-room hotel with a veranda on three sides and a ballroom upstairs with a springing floor. It was called the "Spring House." Thomas Olcott of Albany was a partner, and in 1856, he became the sole owner.

A 50-foot plank road, complete with toll gate, was built to give access to the large new hotel. It was operated for a few years as a sanatorium, using the waters from the different springs located a short distance northwest of the hotel. Many people came there during the first few years to bathe in the waters and take part in the festivities, sometimes as many as 200 per day. A democrat wagon from the Spring House would meet the trains at Basom to take guests to the hotel.

The waters from the Springs were bottled and sold for their medicinal properties. The bottles were blown in North Lockport, with a different color for each type of water. During the boom days, 25,000 bottles of the water were sold annually at 25 cents per bottle. Today the bottles are rare collectors' items.

Around 1860, the house was abandoned as a hotel. For about 40 years afterwards, several different tenants operated the farm lands connected to the hotel and sold the acid waters. The hotel was used spasmodically during later years for hunting and fishing guests.

In 1911, Albert Beals purchased 46½ acres on the west side of the road, which included the Sour Spring House. The Spring House burned in 1914 while occupied by Mr. Beals. In 1947,

Mr. Dudek bought the land from Mr. Beals. He sold it to the U.S. Government in 1959, and it is now part of the Iroquois National Wildlife Refuge.

Meadville School District #7

A one-room country school house is located at the corner of Meadville and Owen Roads. The first information available is a deed dated in 1891 for a half-acre of land at this corner. The Genesee County Atlas published in 1904 shows school District No. 7 at this location. In 1949, District No. 7 was centralized with the Akron School District. Since that time, the property has been sold and is now a family dwelling.

School District #6

There is no record of District #6. Mr. and Mrs. Frank Pafk of Akron, New York, both former residents of this area, recall that each had a parent who attended a school which was located at the end of Klossen Road and on the west side of Meadville Road. This school, which burned, could have been District #6.

Divers Lake

In northwestern Genesee County, an outcrop of flint-bearing Onondaga limestone towers 70 feet over a small glacial lake. This is Divers Lake quarry site, also known as Spirit, Hidden, or Devils Lake, the second-largest known flint quarry in New York State.

Divers Lake is a kettle lake of glacial origin lying in drift piled against the escarpment of Onondaga limestone. The Onondaga limestone is the youngest flint-bearing formation in New York State, dating from middle Devonian times. Outcrops occur all across the state in a belt running east from Lake Erie to Utica and continuing south through the Hudson Valley.

The quarry, with its precipitous terrain, is an isolated island of natural beauty ringed by cultivated fields. It was a source of flint for the Indians for perhaps 10,000 years. The work terraces, on which the Indians stood to detach the flint from the matrix, are still visible. At the foot of the steep descent from the ridge, heavy-duty quarrying tools have been found. A mile to the south is Tonawanda Creek bordering the route of the Tonawanda Trail. Along its banks are traces of villages and campsites of the Seneca tribe. Until 1838, Divers Lake quarry was part of the Reservation and is still said to be considered sacred by the Senecas.

In Seneca mythology, Spirit Lake was believed to be inhabited by a "monster underwater serpent" with horns. The sacrifice of a beautiful maiden and her lover were required to appease the "monster." Sorrowfully, the relatives would turn away, dreading to see the serpent rise and swallow

the couple. Of course, the lovers could never come back, and of course, they never wanted to be devoured by the horned serpents. Who knows where they went?

In 1788, Samuel Kirkland visited Divers Lake while on his mission to the Senecas. Kirkland wrote the following: "The old Indians affirm that formerly a demon in the form of a dragon resided in this lake, which frequently disgorged balls of fire. To appease him, many sacrifices of tobacco had been made by the Indians."

Akron and Medina Railroad

On May 5, 1834, an Act of the Legislature was passed, incorporating the Medina and Darien Railroad Company to construct a railroad from Medina to Akron in Erie County. This railroad went into operation in 1836 and was fitted with horse-drawn cars. After a short trial, it was found to be an unprofitable investment. The track was taken up and the railroad was discontinued. This was the first railroad built in Orleans County. Traces of this old railroad bed can still be seen on the Tonawanda Wildlife Management Area in Wood and Ruddy Marshes.

Lewiston Trail

The historic Lewiston Trail (now Lewiston Road) was the pathway chosen by early Indians who walked along the top of the Glacial End Moraines for safe and dry footing. To the north and to the south, the ancient bed of Lake Tonawanda was swampy and difficult to cross. We built our highways along these paths for the same reasons that the Indians followed them. On maps, dated 1804, this Indian Trail from Batavia to Lewiston is designated "Niagara Road." It was a continuation of the Mohawk Trail that extended from the junction of the Mohawk and Hudson Rivers to the Niagara River. The Lewiston Trail now contains these names across Niagara County today—Lewiston Road, Chestnut Ridge Road, Cold Springs Road, and Ridge Road, terminating at Lewiston. It is the first and most historic road in Niagara County. When just a trail, the French missionary priests used it until 1759.

The whole Mohawk Indian Nation came to Lewiston from the Mohawk Valley via this trail 200 years ago in 1775. To the west, Mohawk Chief Joseph Brant, his parties of warriors, and Butler's Rangers attacked American settlements along this trail. During the Revolutionary War, thousands of captives and bushels of scalps were brought to Old Fort Niagara along this route. This trail was also a major escape route, going in both directions. First, during the Revolutionary War, pioneers loyal to England fled along this route via Lewiston to the relative safety of Canada. Second, terror-stricken American refugees fled eastward along this trail from the English-Indian raids of December 19, 1813, to Batavia and beyond, leaving most of Niagara County completely depopulated.

The Lewiston Trail is one of America's earliest "cowboy" trails. This was a major stage coach and wagon train route for those hardy pioneers who traveled to and settled the west. As early as 1787, it was used by drovers bringing cattle to Old Fort Niagara all the way from New Jersey. Truly, this is one of the nation's most historic trails.

Tonawanda Village

This historic Seneca village was located on both sides of Tonawanda Creek just east of Meadville Road. History will probably never know exactly when the first cabins were built on this site. The late Arthur C. Parker, in his book "Analytical History of the Seneca Indians," stated that it existed in 1778. Since Sullivan's expedition was in 1779, it is believed that the Tonawanda Village was expanded in the spring of 1780. The Rev. Samuel Kirkland who visited the Senecas in 1788 indicated that the village contained fourteen cabins and their chief was called Gashagaate, or Black Chief. An estimated 1500 Indians were reported living in 128 cabins at Little Beards town, this is an average of 11 to 12 people per cabin. Using this average for the 14 cabins that Kirkland observed would mean that 154 to 168 Indians lived in the Tonawanda Village in 1788. In 1818 Estwick Evans visited the village and observed 100 cabins, indicating that the population had increased to approximately 1100-1200 people. From archaeological remains this village appears to have been at its peak from about 1800 to 1840. When the second Longhouse was built on the southern side of the Reservation in 1856, this village was all but deserted. One lone cabin may have remained until 1870 or 1875. Famous chiefs which visited or lived at the Tonawanda Village include Corn planter, Tall Chief, Handsome Lake, Little Beard and Black Squirrel a veteran of the war of 1812.

Preservation of the State and Federal Areas

At one time, approximately 25,000 acres of the Oak Orchard watershed were swampland called the Alabama Swamp. It was also called the Oak Orchard Swamp. These were colloquial names given to the area by the settlers in the vicinity. This swamp is one link in a chain of lowlands and wetlands extending across New York State. The Oak Orchard and Tonawanda Wildlife Management Areas and the Iroquois Refuge are part of the Alabama Swamp.

Seneca Indians, one of the tribes of the Iroquois Nation, inhabited this rich area. Garden plots were cleared by the Senecas in such a manner that the remaining large oak trees near their villages presented the appearance of an orchard of oaks. Thus, the first white men to the area applied the name "Oak Orchard."

The white settlers cleared an estimated 4,800 acres of the upland timber for agricultural purposes. These upland areas supported many subsistence family farms producing a variety of crops

and livestock characteristic of the day. Early logging operations cleared most of the virgin swamp timber, and the swamp today supports stands in varying stages of maturity.

This ancient wetland in the heart of one of New York State's richest agricultural regions resulted from a natural barrier across Oak Orchard Creek. Oak Orchard Creek originates north of Batavia at an elevation of approximately 850 feet. From this source, it drops in 50 miles to an elevation of 245 feet at Lake Ontario. At Shelby Center, an outcropping of Dolomitic limestone resisted the cutting action of the stream, forming a natural restriction. Upstream from this restriction, a huge wetland was created where the creek drops only 30 feet in 25 miles. This shallowly flooded basin through geological time periods developed into the Oak Orchard Swamp. The Tonawanda Swamp, which lies in the Tonawanda Creek watershed, is located just southwest of Oak Orchard Swamp. These two swamps are separated by a height of land which runs along Lewiston Road.

In their natural state, these wetlands had only seasonal value to waterfowl. Water began to build up in the Oak Orchard Swamp with the first winter thaw. By spring thaw time in March, thousands of acres of woodlands and farmland were flooded. Some water would overflow the small height of land along Lewiston Road and enter the Tonawanda Swamp, which in most cases was already flooded by water from Whitney and Tonawanda Creeks. Flood waters would then recede through April, leaving only scant aquatic habitat for nesting waterfowl. Drainage of the swamp was nearly complete in most summers, offering little habitat for southward-migrating waterfowl during the fall.

In a region where the growing season, precipitation and soils are favorable, the gently sloping uplands around the swamp produce good yields for a variety of crops. Generally, these soils are poorly drained due to a firm subsoil, high in organic matter, low in phosphorous and potash, and low to medium in lime content. The swamp, however, is poorly drained and is a "frost pocket." Farming here has proven to be an unprofitable venture.

The expense of carrying out a complete drainage project is the factor that has preserved the swamp to this day. Many drainages were attempted, however. The first attempt in 1829 was by an association of landowners that spent \$12,000 to enlarge the outlet of Oak Orchard Creek. In 1855, a commission was appointed by the Legislature to study the drainage of the area. This commission estimated the drainage cost to be \$20,000, which was rejected by the landowners. In 1865, an act was passed allowing two commissioners to drain certain lowlands in the town of Barre. They were successful, and as a result, two more acts were passed in 1867 and 1869. Under these acts, 4,670 acres were drained. In 1893, \$35,000 was appropriated to improve Oak Orchard Creek, which is now being used as a feeder canal. Large canals and lateral canals were completed in 1912 throughout the drainage district to enhance drainage.

Further drainage operations were continued by the Western New York Farms Company, which employed a resident engineer and manager. Extensive, partially developed muck lands and adjoining uplands were acquired by this company. Drainage operations included the dredging of Oak Orchard Creek through the major muck lands north of Elba and the installation of lateral ditches. What is now Route 98 bisected this developed muck area.

Dredging of the main Oak Orchard Creek Channel extended downstream to a point known as "Booram's Cove" a short distance west of the Oakfield-Albion Road. The lower reach of this channel was cut in a straight line somewhat south of the meandering sections of the original creek channel. Dredged spoil was deposited principally along the north side of the new channel, resulting in a dike that served to impound additional flood waters along the old channel. This area is now known as Oxbow Pond.

This drainage system was successful to the extent that flood waters were decreased on the muck land, allowing profitable management of muck crops such as onions and potatoes, and in recent years, lawn sod. A large part of the swamp was now dry for most of the year, resulting in several serious fires that burned through the muck to the clay base. Muck that was burned varied in depth from one foot to 15 feet, and once burned over, its value for agricultural purposes was gone for the future. In addition to occasional fires, the drier surface of the muck was subject to extensive wind erosion and subsidence due to oxidation of the organic material making up the muck soil and compaction. The result was a gradual lowering of the surface.

By the late 1930s, periodic flooding was again a problem, and muck farming became progressively less profitable, especially in that section known as the "west muck" lying west of Route 98. The Western New York Farms Company decided that further drainage efforts would not be profitable, and the Chicago-based firm initiated a plan to dispose of the property. However, the Elba muck drainage project had a secondary effect on the ecology of the swamp. Rapid "dumping" of flood waters from the muck lands through the dredged section of Oak Orchard Creek resulted in increased flooding of lands downstream. Conditions were improved for waterfowl and furbearers west of Oakfield-Albion Road (Albion Road).

This situation came to the attention of Mr. Martin A. Schmitt, a furrier in Buffalo who conceived the idea of raising muskrats under semi-artificial conditions to supply his fur shop. Consequently, in 1927 he decided to acquire about 1,500 acres of these periodically flooded lands, including about 1,000 acres west of the Oakfield-Albion Road to Knowlesville Road and another 500 acres west of Knowlesville Road. Mr. Schmitt, without any engineering or surveying training, installed a system of low dikes to catch the spring water. He established water levels and dike locations by driving nails in trees at the water level of the Oak Orchard Creek flood stages.

In his diking operations, Mr. Schmitt established valuable habitat for muskrats and made the area more attractive to waterfowl and other marsh-associated wildlife. After establishing these muskrat ponds, primarily Windmill Marsh, he enclosed them with low, muskrat-proof fences so that the muskrats could not enter or leave the ponds. However, he had difficulty with the loss of water during dry seasons. In an attempt to overcome this, he built a revolving scoop arrangement at the edge of Oak Orchard Creek and operated it by using a windmill on the southern edge of Windmill Marsh on the Oak Orchard Wildlife Management Area. This did not supply enough water at certain times, so he built a low-head pump using a dismantled hot water tank and a propeller attached to a shaft through the center, which was belted to a salvaged "Model A" Ford motor. This type of pump arrangement is being used commercially today for drainage and flood purposes on muck areas and elsewhere.

Early in 1929, the Norbect Act was passed by Congress, appropriating \$10,000,000 to establish and maintain 125 wildlife sanctuaries in the United States. One of the areas considered by the Federal Government was a 20,000-acre sanctuary in the Oak Orchard Swamp. Three efforts were responsible for getting the Federal Government interested in the Oak Orchard Swamp as a wildlife sanctuary: (1) Mr. Schmitt enlisted the aid of Congressman Archie D. Sanders and Assemblyman Charles P. Miller in the project; (2) Mr. Hoover of Lockport, secretary of the State Conservation Association, headed a movement to have a refuge established in the eastern part of Niagara County; and (3) the Orleans County sportsmen were pushing for a refuge in the southwestern part of Orleans County. These three interests were pooled to make it a tricounty effort in support of the sanctuary.

In 1930, the Federal Government abandoned the project to establish a sanctuary in the Oak Orchard Swamp. At this time, Mr. W. L. McAtee of the United States Biological Survey indicated that a sufficient area could not be purchased at a reasonable price to be of value to migrating waterfowl. He also noted that the swamp often dries up in the summer.

Oak Orchard Wildlife Management Area

In the late 1930s, the New York State Department of Environmental Conservation accumulated funds for land acquisition as a result of the Pittman-Robertson Act. Robert Perry, the wildlife manager, had conducted two wetland inventories in what was then called Region #1. These inventories consisted of the Oak Orchard Swamp in Genesee County and the Potter Swamp in Ontario and Yates Counties. With only enough money to negotiate for one of these large marsh areas, and with the death of Martin Schmitt, Perry encouraged Department people to move as rapidly as possible to acquire the Oak Orchard property. A primary factor favoring the Oak Orchard site was that a large tract of land could be purchased at one time, whereas the Potter Swamp purchase would be more fragmented.

At the same time, Buffalo sportsmen who had enjoyed waterfowl and pheasant hunting as guests of Mr. Schmitt were negotiating with the Schmitt estate for purchase of the property. At a meeting in Buffalo between these people and the state, a compromise was reached where the state would purchase that part of the property east of Knowlesville Road, and the Buffalo people would purchase the property to the west. This group of sportsmen became known as the Swallow Hollow Club.

In due course, the state purchased approximately 1,000 acres of the Schmitt holdings for \$10 per acre. Subsequently, the state purchased additional wetlands east of the Oakfield-Albion Road from a Buffalo dentist, Dr. L. A. Stafford, who owned what is now called Oxbow Marsh along the north side of the Oak Orchard drainage ditch and the westerly half of Goose Pond. The easterly half of Goose Pond was purchased from Joseph Schmitt, son of Martin Schmitt, following an extensive muck fire. What is now Goose Pond had been previously drained and farmed on a regular basis.

Uplands between Goose Pond and Oxbow Pond and the easterly end of Oxbow Pond were purchased from the Western New York Farms Company. Other acquisitions were also added south of the Schmitt holding, the main Oak Orchard Creek Channel, and Podunk Road (except several dwellings).

As an interesting sidelight, Dr. Stafford's holdings included a small parcel on the south side of the dredged channel, which he diked off and used impounded waters from a small spring-fed stream entering the watershed from the south. Waters from this impoundment were conveyed across Oak Orchard Creek by way of a wooden flume to supplement the flooding of Oxbow Pond during the dry summer months. During development by the state, this flume was replaced by a large-capacity electric pump that drew water directly from Oak Orchard Creek.

As another sidelight, much of the land that was purchased south of Oak Orchard Creek consisted of swamp hardwood and white cedar, with a heavy under story of ground hemlock and limited amounts of rhododendrons. These latter two species were virtually eliminated by the large deer herd that wintered in the area during the 1940s.

The Department began acquisition of these properties in 1941. World War II interrupted the program, which was finally completed in 1947. The total area acquired for the Oak Orchard Management Area amounts to 2,502.49 acres. An elderly man by the name of Jim Madison was resident caretaker for Mr. Schmitt prior to the state acquisition of the area. He was later employed by the state as caretaker until he became physically unable to carry out his duties.

Development work, consisting of a complicated system of low diking designed primarily to catch and hold a maximum acreage of spring flood waters was initiated in 1948. Basic features of this

diking, financed from federal aid funds, were completed in 1948 and 1949. The major units—Windmill Marsh and Oxbow Marsh—were flooded for the first time during the springs of 1949 and 1950, respectively. In the next decade, additional diking was completed as funds became available. Today, Oak Orchard contains 1,090 acres of permanently flooded wetlands. Approximately 700 acres of uplands have been cleared and cropped on a rotation basis in a pattern to provide improved nesting habitat for waterfowl and other ground nesting species of wildlife, and 104 potholes have been constructed.

Listed below are the major impoundments on the Oak Orchard area, along with their respective acreages and the year when each was first impounded:

Impoundment	Date Impounded	Acres
Goose Pond	Before State Ownership	110
Windmill Marsh	1948	300
Oxbow Marsh	1949	140
Potholes	1954	60
Paddy System (Guthrie, West and Belson)	1956	110
North Marsh	1958	90
Woods Paddy	1962	20
Supply Pond	1954	50
South Marsh	1948-1950	60
Campbell Marsh	1991-1992	150
		1,090

In 1955, Oak Orchard was approved as a field trial area for retriever dogs. This was the third Wildlife Management Area made available by the Conservation Department for field trial purposes. Since that time, retriever trials have been held from early spring through late fall under the auspices of the Western New York Retriever Club. Many dogs have qualified in these trials for National Championship competition.

In 1956, a forest tree nursery was established at the northwestern corner of the Wildlife Management Area by the Division of Lands and Forests. It was designed to produce 10 million

seedlings per year to service planting needs in the southern and western parts of the state. This was discontinued in 1963.

Oliver Meddaugh was appointed local manager of the Oak Orchard area in 1959 and later assumed responsibility for the Tonawanda area. He was largely responsible for supervising the many developments and establishing management procedures for both areas. Ollie retired in 1983. From 1953 to 1959, Gerald Cummings was manager of the Oak Orchard area, and prior to 1953, Francis King acted as caretaker of the area.

In 1974, the Oak Orchard Education facility was constructed on Knowlesville Road, which included a pavilion, picnic area, and four nature trails. The system of nature trails and a corresponding teacher's guide were developed by Darwin Roosa. Since 1985, this facility has rapidly deteriorated due to vandalism and the lack of maintenance money.

Since 1980, major accomplishments have included the construction of: (1) Campbell Marsh - 1991; (2) a new lower waterlevel control structure in Goose Pond - 1994; and (3) a new waterlevel control structure in Oxbow Marsh - 1994. These major accomplishments also included the reconstruction of Oxbow Dike in 1995. Popular management programs have included the hacking of bald eagles in 1981 and 1982, the hacking of ospreys from 1992 to 1994, the biological control of purple loosestrife from 1991 to 2002 and the trumpeter swan migration experiments in 1998 and 2000.

Iroquois National Wildlife Refuge

In 1955, Robert Schueler of the Northeast Division of the Fish and Wildlife Service visited Robert Perry at his Scottsville office. He indicated that the Bureau was looking for the opportunity to buy a large tract of land somewhere in the northeast to establish a refuge in the Western New York sector of Lake Öntario. Mr. Perry took Mr. Schueler on a ride through the "Alabama Swamp" so that Mr. Schueler could observe the area for himself. With the Oak Orchard Wildlife Management Area already well established, the potential of the swamp to the west was easy to imagine.

In 1957, the United States Fish and Wildlife Service decided to purchase 10,800 acres of marshland, swamp woodlands, wet meadows, pasture, and cropland. The Federal Refuge was first established in 1958 with Larry Smith as manager and was first named the Oak Orchard National Wildlife Refuge, from its location on the watershed of Oak Orchard Creek. In 1964, the name was changed to the Iroquois National Wildlife Refuge because of the confusion with the adjacent state-owned Oak Orchard Wildlife Management Area. Development was limited to small marshes and potholes until 1966 when land acquisition was completed. Today, the Iroquois National Wildlife Refuge encompasses 10,818 acres.

A Job Corps program was initiated on the refuge in 1965 that provided the resources to initiate the development of several major impoundments, small marshes, and Swallow Hollow Trail. In 1968, the Office of Economic Opportunity closed the Job Corps Center due to a lack of funds. Almost immediately, the Narcotic Addiction Control Commission (NACC) expressed an interest in the facility. Late in 1968, the NACC took control of the facility and provided funding, manpower, and equipment for the development and maintenance of the 10,832-acre refuge. In 1973, the Narcotics Center completed the construction of the refuge headquarters on Casey Road. Previously, the refuge headquarters was stationed in an old farm house located just west of Casey Road on the north side of Route 77. The Narcotics Center was closed in 1976 by the state due to a lack of funding. The Attica Correctional Facility expressed an interest in the facility for inmates in 1975. However, this proposal was eventually turned down by the state due to strong public opposition.

In 1973, approximately 600 acres of Oak Orchard Creek Marsh were established as a National Landmark. This includes the Milford Possen natural area established in 1966, which contains an outstanding stand of mature northern hardwoods.

Listed below are the names of the pools and marshes on the Iroquois National Wildlife Refuge, the year when each was first impounded, and their respective acreages:

Impoundment	Date Impounded	Acres
Swallow Hollow Marsh	_	54
Seneca Pool	1968	935
Cayuga Pool	1969	365
Mohawk Pool	1974	1,370
Oneida Pool	1977	770
Galaxie Marsh	1965	10
Long Marsh	1965	69
Knowlesville Marsh	1966	46
Suttons Marsh	1966	28
School House Marsh	1967	40
Ringneck Marsh	1969	172
Center Marsh	1969	84
Olsen Marsh	1991-92	40
School House Moist Soil Unit	1991	15
Onondaga Pool	not completed	55
		4,053
	Swallow Hollow Marsh Seneca Pool Cayuga Pool Mohawk Pool Oneida Pool Galaxie Marsh Long Marsh Knowlesville Marsh Suttons Marsh School House Marsh Ringneck Marsh Center Marsh Olsen Marsh	Swallow Hollow Marsh Seneca Pool 1968 Cayuga Pool 1969 Mohawk Pool 1974 Oneida Pool 1977 Galaxie Marsh 1965 Long Marsh 1965 Knowlesville Marsh 1966 Suttons Marsh 1966 School House Marsh 1967 Ringneck Marsh 1969 Center Marsh 1969 Olsen Marsh 1991–92 School House Moist Soil Unit

When development is completed, there will be over 4,000 acres of pools and marshes. Most of the present open upland areas will be maintained as grassland or cropland. Since the Iroquois National Wildlife Refuge was established, the following have been refuge managers: Larry Smith 1958-73; Bob Wade 1973-76; Edwin Chandler 1977-86; Don Tiller 1987-1997 and Robert Lamoy 1998 to present.

A major attraction to Iroquois since 1986 has been a pair of bald eagles that are nesting in Mohawk Pool just north of the federal headquarters on Casey Road. Since 1994, federal and state personnel have made a coordinated effort to set up a camera system that would allow the public to view the nesting eagles from the federal headquarters by television monitor. This effort was successful in 1995, and attendance at the refuge from March to July exceeded 85,000 visitors.

Tonawanda Wildlife Management Area

In 1957, about the same time that the U.S. Fish and Wildlife Service decided to purchase the Iroquois National Wildlife Refuge, additional funds became available to the state. During the New York State Conservation Council meeting in Niagara Falls, Robert Perry took the opportunity to show influential members of the council the possibilities of this poorly drained area for wildlife development.

Several council members took a tour with Perry through the area west and south of the land designated for the new National Wildlife Refuge and gave their full support. The scene was set for the acquisition of the Tonawanda Wildlife Management Area, consisting of 5,684 acres. The Tonawanda Wildlife Management Area was named after its location in the watershed of Tonawanda Creek.

Development of the Tonawanda Wildlife Management Area was started in 1964 when Feeder Marsh was built by force account. Since that time, 13 marshes, 9 paddies, and over 40 potholes have been developed on the area. These developments have been financed by Pittman-Robertson Federal Aid funds, Capitol Construction funds, 1972 Bond Act funds, and a 1995 North American Wetlands Conservation Act federal grant.

Listed below are the names of marshes and paddies on the Tonawanda Wildlife Management Area, the year when each was first impounded, and their respective acreages:

Impoundment	Date Impounded	Acres
Feeder Marsh	1965 (subdivided 1993-94)	260
Cinnamon Marsh	1968	380
Klossen Marsh	1978	215

Impoundment	Date Impounded	Acres
Meadville Marsh	1966	105
Sprout Marsh	1968	140
Ruddy Marsh	1971 (subdivided 1997)	345
Hunt Club Marsh	1976	340
Wood Marsh	1972 (subdivided 1996)	350
Spring Marsh	1970	140
Spring Paddy	1978	20
Finks Paddy	1968 .	30
Paddy #1	1972	50
Paddy #2	1972	58
Paddy #3	1972	50
Paddy #4	1972	50
Paddy #5	1972	40
Mud Creek Paddy	1993	7
Mud Creek Marsh	1993	35
		2,615

Recent developments have included the construction of: (1) Finks Paddy Overlook on Route 77 in 1990; (2) Mud Creek Paddy and Mud Creek Marsh in 1993; and (3) a new overlook on Route 77 in 1993. These developments also included the acquisition of the 84-acre Hilburger Estate in 1994. During the 1990s, Feeder, Wood, and Ruddy Marshes were subdivided to increase emergent marsh acreage and quality.

The State and Federal Areas Today

The above state and federal areas are contiguous with the larger federal area saddled between the two state areas. All are managed to provide two uncommon Western New York habitat types, emergent marshes, and undisturbed grasslands. These two habitats will benefit a variety of wildlife, including endangered and threatened species, marsh birds, waterfowl, shorebirds, and furbearers.

Both the state and federal areas are opened annually for waterfowl and upland game hunting under carefully controlled conditions. Waterfowl hunting permits are required daily on Iroquois and

on the state areas for the opening day and or first weekend. Permits for trapping are required on all three areas to manage furbearer populations.

These areas also provide an increasingly important educational service for local high schools and universities. Since 1988, six Masters research projects dealing with waterfowl and uncommon wildlife have been completed on the state and federal areas. Lookout areas have been constructed where motorists can enjoy excellent views of wetland habitats and migrating waterfowl. It is estimated that approximately 300,000 Canada geese stop here annually for several weeks. In addition, ducks, marsh birds, shorebirds, and songbirds can be easily observed on the areas. There are also opportunities for spectacular photographs, especially with telescopic lenses.

In 1974, an educational center was established on the Oak Orchard area, located on Knowlesville Road. Many nature trails have been created and radiate from this pavilion-type center. The Federal headquarters, completed in 1973, also provides an educational center on Casey Road. A nature trail that circles Swallow Hollow Marsh was completed in 1967. The Kanyoo trail, which starts on Route 77, was completed in 1986.

During the spring migration period, approximately 50,000 people visited the complex, some from as far away as Toronto, Canada.

John White Wildlife Management Area

The area (339.35 acres) used for the John White Memorial Game Farm was purchased from Alida P. Norton on June 15, 1945, for \$21,000 by the New York State Conservation Department. The game farm was named in honor of John A. White, a native of Western New York, who was appointed Commissioner of the New York State Conservation Department by Governor Thomas E. Dewey in 1943. Previously, Mr. White was president of the Steuben County Federation of Conservation Clubs and president of the New York State Conservation Council. Mr. White died of pancreatitis at the age of 43 on December 31, 1944. There are some claims that Mr. White left the state a large sum of money, which was used to purchase the Alida P. Norton farm. The house on the east side of Route 63/77 was built around 1830 and is listed in the first edition of *The Architectural Heritage of Genesee County, NY*.

After being purchased, the John White Memorial Game Farm was put into immediate production and, in 1946, reared 5,797 pheasants from chicks hatched on the farm. In 1965, Conservation Department staff visited Japan and Korea and obtained eggs for the Japanese Green and the Korean Ringneck pheasants. The Korean Ringneck was raised at John White until 1971. In 1992, Manchurian male pheasants were brought to the farm and crossed with the game farm hen to produce a wilder, stronger-flying pheasant. This technique was used until 1999, when the last pheasants were

shipped from the farm. During the last 30 years, this farm produced approximately 17,000 adult pheasants and thousands of day-old chicks and young pheasants annually. Managers of the John White Memorial Game Farm were Bill Blew from 1946 to 1970, Raymond Krause from 1970 to 1991 and David Serbonich from 1991 to 1999. All operations ceased at the John White Memorial Game Farm on December 31, 1999. On April 1, 2000, by Order of Commissioner John P. Cahill, the name of the John White Memorial Game Farm was changed to the John White Wildlife Management Area.

Future use of the area will include dog training and field trials, youth pheasant hunts, harvest and management of native grasses, and special projects such as the trumpeter swan migration experiment.

History of the Tonawanda Indian Reservation

The Tonawanda Indian Reservation was once part of Robert Morris's 4-million-acre farm, purchased from Massachusetts in 1791. Actually, however, this land still belonged to the Indians. By devious means, Thomas Morris, son of Robert, persuaded the Seneca chiefs to relinquish the land for \$100,000.

Fifteen hundred Senecas led by Red Jacket, Cornplanter, Billy Joe, and other famous chiefs met with Morris at Big Tree in Geneseo to consummate the Big Tree Treaty on September 15, 1797. According to this treaty, the following reservations were to be set aside for the Senecas:

- Canauagus Reservation two square miles on the Genesee River west of Avon;
- Little Beards and Big Tree Reservations four square miles on the Genesee opposite Geneseo;
- Squeakie Reservation two square miles on the Genesee north of Mt. Morris;
- Gardeau Reservation 28 square miles on both sides of the Genesee in Castile and Mt. Morris;
- Canadea Reservation six square miles on both sides of the Genesee in Allegany County;
- Oil Spring Reservation one square mile on the line between Cattaraugus and Allegany Counties;
- Allegany Reservation 42 square miles on both sides of the mouth of Cattaraugus Creek;
- Buffalo Reservation 130 square miles(83,200 acres) on both sides of Tonawanda Creek, mostly in Genesee County; and
- Tuscarora Reservation one square mile, three miles east of Lewiston in Niagara County.

On January 15, 1838, a treaty was negotiated at Buffalo Creek that required the Seneca Indians to relinquish the Tonawanda Indian Reservation to the Ogden Land Company. In return, the United States Government agreed to set aside a tract of land west of Missouri for the Indians, plus other considerations. This treaty, however, met with objections from the Indians and their friends, the Quakers, and resulted in a compromise treaty of May 20, 1842, which required the Ogden Land Company to release the Allegany and Cattaraugus Reservations and a proportionate share of the monies due to the Senecas but confirmed the sale of the Tonawanda Reservation.

Frustrated with this compromise treaty, which allowed sale of their land, the Tonawanda Senecas stated at a Council of all Senecas their intention to take care of themselves and to continue to occupy the Tonawanda Reservation. They thereby established themselves as a separate body with a corporate name, the Tonawanda Band of Senecas. As a separate nation, they continued to fight for the land and refused to move from their reservation. During this time, the homesteads of some settlers were burnt in protest. In 1856, Ely Parker went to Washington to lobby on behalf of his kinsmen. Through his efforts, a decision was reached which held that appraisal of the improvements by the Indians was not made and the assent of the tribe was not given in Council, and therefore, the Ogden Land Company was not entitled to possession.

A second compromise treaty was negotiated on November 5, 1857, calling for the use of \$165,000 of the \$250,000 paid to the Senecas under the terms of the treaty of 1842 to buy back 7,549 acres of the 12,800 acres of the original reservation. On February 14, 1863, the Secretary conveyed these lands and a fee in trust to Lucias Robinson, Comptroller of the State of New York, and his successors in office for the Tonawanda Band of Seneca Indians. The interest on this fund is paid annually to the Tonawanda Senecas by the United States Government.

During the time when the Ogden Land Company had possession of the Tonawanda Reservation, many lots were sold to settlers. At this time, the disputed land formerly owned by Johnson and Babel was sold from the original Tonawanda Reservation.

Governing Body

The governing body of the Tonawanda Reservation is the Council of Tonawanda Seneca Chiefs. In this Council, there are eight Sachem chiefs and eight sub-chiefs. One Sachem and sub-chief are elected from each clan by the clan mothers and serve for life on good behavior. Sachem Chiefs can attend the local Councils and the Councils of the Six Nations. However, sub-chiefs can only attend local Councils.

According to the New York State Indian Law, an election on the first Tuesday in June is held on the reservation, at which time a president, clerk, treasurer, marshal, and three peace makers are

elected. The president and three peace makers are elected from the Chiefs Council, while the other officers are elected from outside the Chiefs Council. Their term of office is for one year. Every enrolled male Indian of full age whose name is on the annuity roll is eligible to vote. Occasionally, a referendum vote is held on some issues. The result of this vote goes back to the Chiefs Council for approval.

Community Structure

As mentioned before, the Tonawanda Band of Seneca Indians is divided into eight clans.

These clans are known as: Turtle, Snipe, Wolf, Bear, Beaver, Deer, Heron, and Hawk. According to custom, each Seneca is supposed to marry outside the clan, with the children becoming members of their mother's clan.

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September 18, 1942

July 10, 1945

20,000-acre Game Refuge Proposed
Proposed Wildlife Area Too Small
Alabama Swamp Again Proposed
Alabama Swamp Purchased
State Buys Big Alabama Farm
Alabama Swamp as Refuge Proposed
Proposed Wildlife Area Too Small
Alabama Swamp Purchased
State Buys Big Alabama Farm

May 6, 1948 Alabama Swamp as Refuge Planned

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Other

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