

Onnyote?a·ká· Ohnekanusho·kú  
*All of the Waters of Oneida*

Water Resources Report

2008—2010



Oneida Environmental, Health & Safety Division  
Water Resources Program





👤👤👤👤👤👤👤 **Acknowledgments** 👤👤👤👤👤👤👤

We extend our thanks to those who continuously support the Water Resources Team (WRT) in restoring the balance of Onʌyoteʔa·ká· Ohnekanusho·kú.

**Oneida Water Resources Team**  
Jim Snitgen, Tony Kuchma, and Margaret Ellis.

**Additional Water Resources contributors**  
Oneida Conservation Corps, Eco-Services, and Environmental Quality. Inez Dommer and Brenda Doxtator provide administrative assistance to the Water Resources Team. Oneida Geographic Land Information Services produces high quality maps for restoration projects and water resource reports.

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Thank you to members of the Environmental, Health and Safety Division for continued cooperation and support in water-related activities and for contributing to, as well as reviewing and editing this report. Yawʔkó· to the Language House for providing and editing the Oneida Language.

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# 2008-2010 Water Resources Report for the Oneida Reservation

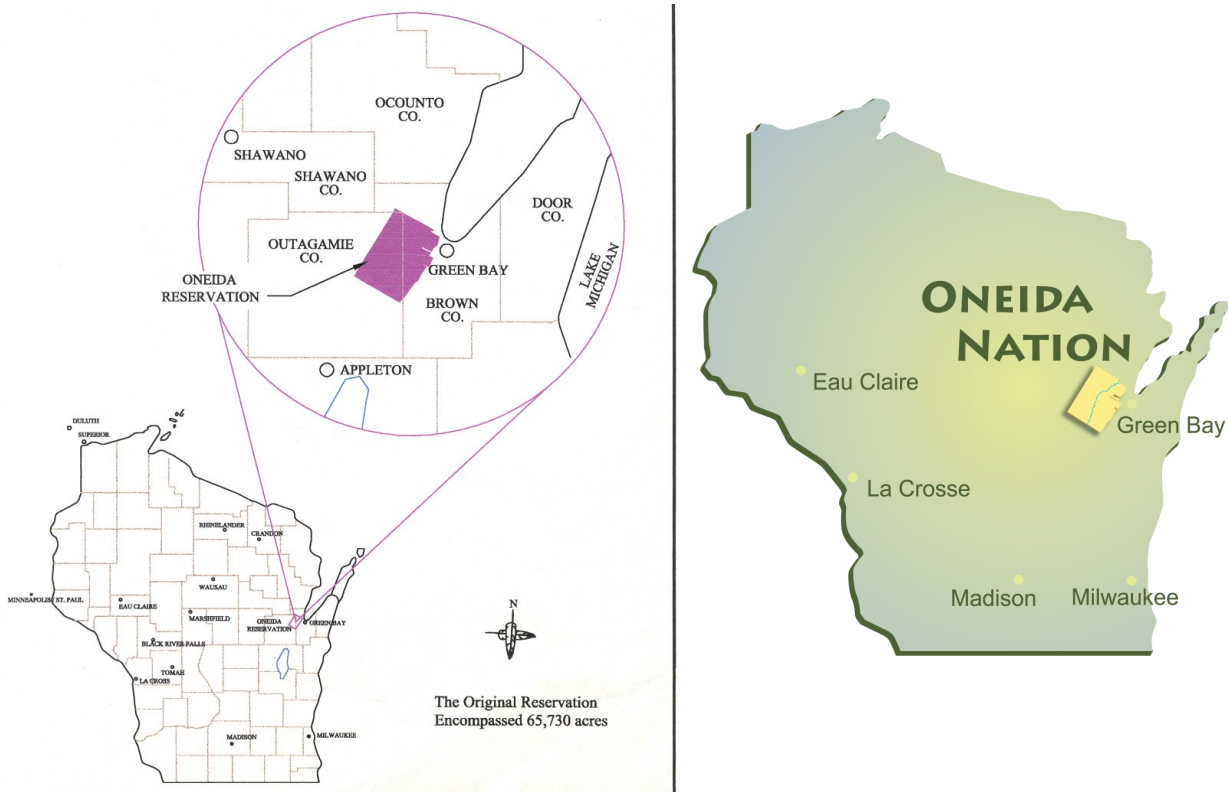
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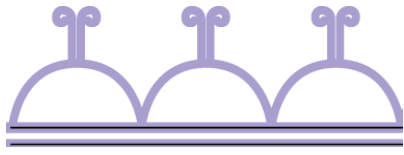


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# 2008-2010 Oneida Water Resources Report



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*"And altogether, those rivers of Mother Earth and lakes will be the blood veins of our Mother, our beautiful Mother. We must make sure that those are always cleaned...If our blood becomes contaminated, it will spread throughout our bodies and reach our heart, killing us. We must view the Waters of the world the same way and ensure the health of our Mother Earth"*

James W. Ransom, St. Regis Mohawk





# Restoring balance within our watersheds to ensure clean water for our children.

## EXECUTIVE SUMMARY

Our vision for the future of Oneida water reflects upon our stories, language, and history as a nation. All of the departments and programs within the Oneida Environmental, Health & Safety Division (EH&S) are committed to providing high quality services that protect and improve the health of the human and natural environment, consistent with tsi' niyukwalihó'ta (our ways).

The water quality of tributaries within the Oneida Nation Reservation is affected by various contamination sources both upstream and downstream of the boundaries, resulting in fish consumption advisories, degraded water quality, and decreased recreational and cultural uses.

Several programs within the EH&S Division work in partnership to protect and restore the integrity of the surface waters of the Reservation by managing the quantity and quality of storm water runoff; defining, restoring, and enhancing the functions of the watershed/sub-watershed systems of the Reservation, including wetlands; and, restoring and protecting aquatic habitats in the waters of the Reservation.

The following pages represent a snapshot of Oneida's watersheds and the EH&S activities undertaken to promote and protect the waters of the Reservation and their respective uses for future generations. This entails the integration of modern science and traditional ways. This report is a reflection of that philosophy.

## PURPOSE

The purpose of this report is to provide a summary of Oneida waterways for water resource professionals and Oneida community members.

The objective of water resource monitoring is to gather scientific information on the water resources of the Oneida Reservation. Studying waters of the Reservation assists staff in making sound water management decisions.

The water quality data collected is used for analysis, research, aiding in habitat improvements, and also to assure compliance with Oneida Water Quality Standards (Resolution #7-17-96B) and the Oneida Water Resource Ordinance (Resolution #5-8-96B).



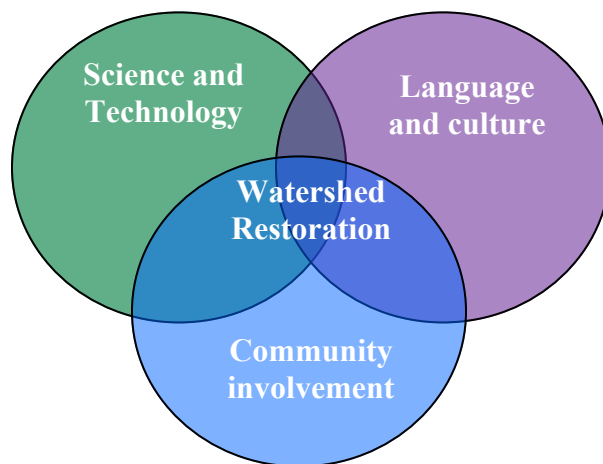
# Onlayote?aká· Ohnekanusho·kú

## All of the Waters of Oneida



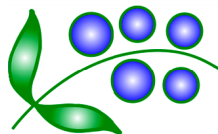
### Watersheds

A watershed includes the land that drains from surrounding ridge tops to a common point such as a lake or stream to their confluence with a neighboring watershed. All lands and waterways can be found in one watershed or another (Wisconsin Department of Natural Resources). The main watershed of the Oneida Reservation is the Duck Creek Watershed. This is a sub watershed, which drains into the Lower Fox River. There are a number of sub-watersheds within the Oneida Reservation (See page 6). This report will look at the waters of Oneida, watershed by watershed. By looking at our Reservation in this way we are embracing a “story telling” approach to reporting.



### Watershed restoration

The strategy employed in our watershed restoration activities is process driven. By looking at the waters of Oneida watershed by watershed we take into account each sub watershed’s unique process to better understand the whole. Restoration involves the inclusion of cultural and historical information, science and technology, and community input and involvement. All these components play important roles in the process of restoring Yukwahne·kánus ~ Our waters.



## Atlas of Tribal Waters

Factor/Resource	Value
Reservation Population (total residents) <sup>1</sup>	21,321
Reservation Population (Tribal members) <sup>3</sup>	4,225
Reservation Surface Area (mi <sup>2</sup> )	102
Miles of Waterways <sup>2</sup>	294.95
Number of monitoring points on streams	12
Acres of lakes and ponds <sup>2</sup>	248.75
Number of monitoring points on lakes	2
Total acres of wetlands <sup>2</sup>	7,015.6

<sup>1</sup> 2000 Census Data; <sup>2</sup> Oneida GLIS, <sup>3</sup> Oneida Tribal Enrollment Department (2011 data)

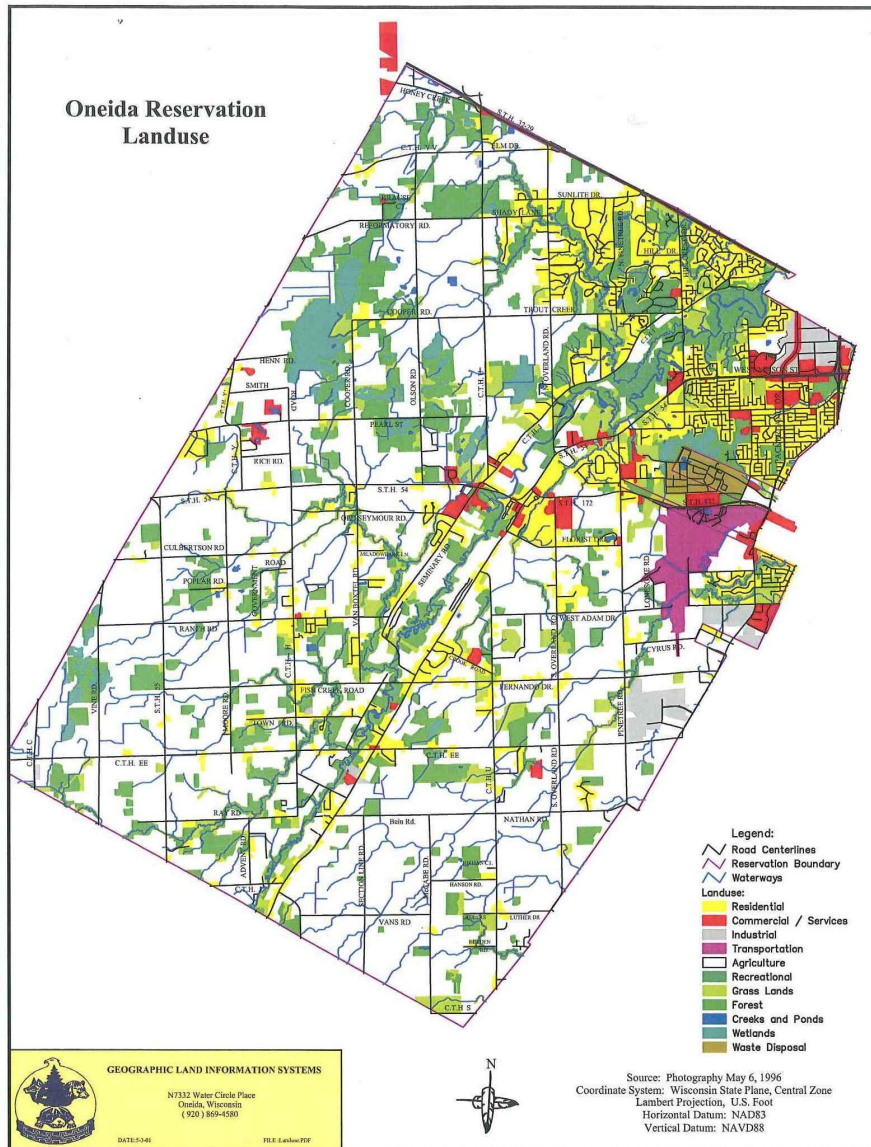


# How we use the land in Oneida

The Oneida Nation Reservation covers approximately 65,400 acres and straddles the boundary of Brown and Outagamie Counties and includes all or portions of the City of Green Bay, Villages of Ashwaubenon, Howard, Hobart, and towns of Oneida and Pittsfield.

The Reservation is drained by four major streams. **Duck Creek** and its tributaries drain nearly 70 percent of the Reservation. **Dutchman Creek** drains 20 percent, and the headwaters **Ashwaubenon Creek** and the **South Branch of the Suamico River** drain the rest of the land (USGS Report 00-4179).

The main sources of impairment are sedimentation (agricultural and residential construction) and nutrients (agriculture, suburban lawns, golf courses). Ditching and tiling of agriculture fields have impacted the hydrological characteristics to such an extent as to reduce flow to near zero during the summer months in certain Reservation streams.



# Water Resources Program

## PROGRAM COMPONENTS:

- ◆ **Monitoring Stream Health**—Water quality and biological monitoring are used to gauge status in the protection and restoration of Reservation surface waters.
  - **Water Quality Monitoring:** monthly monitoring consists of the following field measurements: water temperature, air temperature, pH, specific conductivity, salinity, barometric pressure, total dissolved solids (TDS), turbidity, dissolved oxygen saturated, and dissolved oxygen. Grab samples are taken quarterly in the months of November, March, June, and September. Samples are analyzed by Northern Lab Services.
  - **Annual Benthic Macroinvertebrate Monitoring:** qualitative and quantitative sampling of benthic macroinvertebrate populations are sampled at approximately 12 established and routine sites in June and July. Macroinvertebrate samples are picked, sorted, and identified to genus and/or species.
  - **Routine Fishery Surveys:** consist of daytime electro-fishing of a stream assessment segment 35 times the mean stream width, during base flow conditions in late spring through early autumn. Also, young of year Northern Pike are monitored using traps.
- ◆ **Regulatory Actions**
  - Exercise Tribal sovereignty and protect the water resources of the Oneida Nation Reservation through implementation of Water Regulatory Activities.
- ◆ **Community Education**
  - Organize and participate in various EH&S Division events such as: Fall Fest, Youth & Elder Fishing Day, and Summer Youth Programs.
  - Integrate Oneida language and culture into our events and outreach materials.
  - Outreach on watersheds to various Oneida Nation Elementary School classes.
- ◆ **Wetland and Stream Restoration**
  - Protect, restore, and enhance wetland functions and values to increase the biological diversity, health, and balance of the wetland ecosystem.
  - Enhance and restore surface water habitats on the Oneida Nation Reservation.
- ◆ **Invasive Species Monitoring**

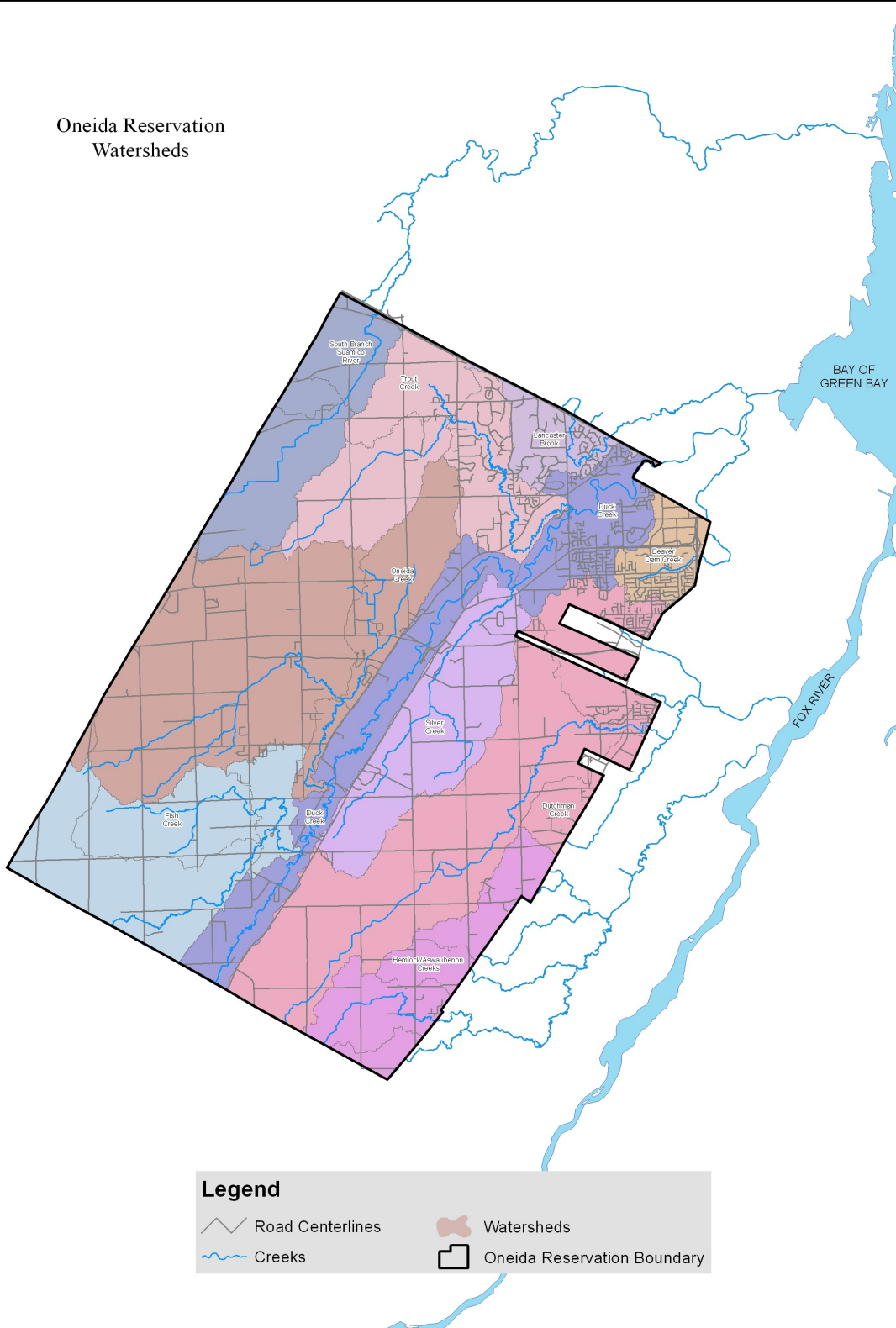
Determine locations of invasive plant species and prioritize control efforts.









# Watersheds of the Reservation

Oneida Reservation  
Watersheds



**Legend**

	Road Centerlines		Watersheds
	Creeks		Oneida Reservation Boundary



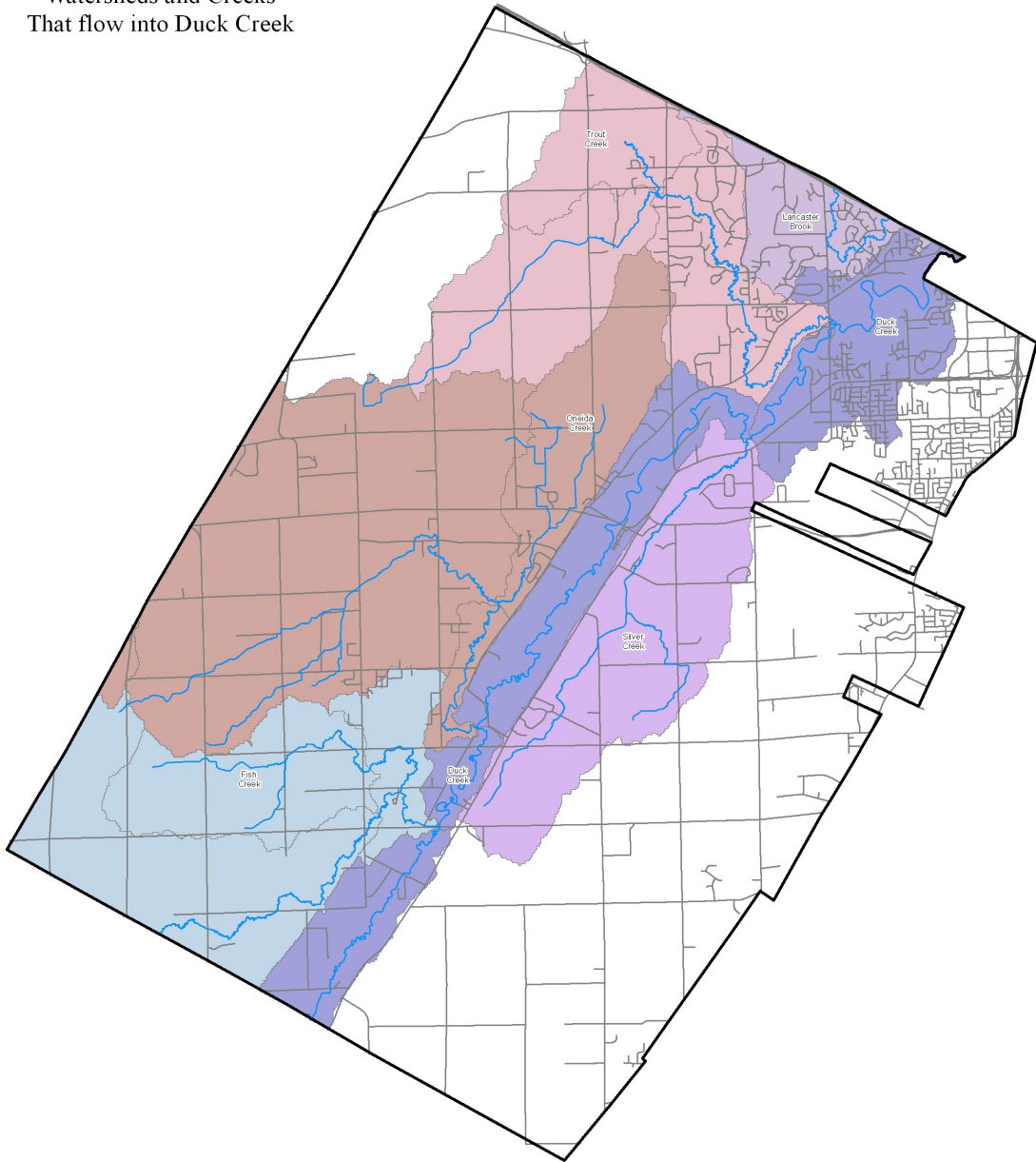
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Source: Photography May 5, 2001  
 Coordinate System: Wisconsin State Plane, Central Zone  
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 Horizontal Datum: NAD83  
 Vertical Datum: NAV88

# Talu?kowánhne? Kawyuhatáti Watershed

Oneida Reservation  
Watersheds and Creeks  
That flow into Duck Creek



**Legend**

 Road Centerlines	 Watersheds
 Creeks	 Oneida Reservation Boundary



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# Talu?kowànhne? kawyhuhatáti (Duck Creek) Watershed



Duck Creek

**Duck Creek** is a 4<sup>th</sup> order warm water system and is the largest stream in the Reservation. It is classified as 79% agriculture, 2.5% grassland, 8.6% forest, 2.5% non-forested wetland, and 6% forested wetland (USGS 1998). Water quality is impaired due to high loads of nutrients from Oneida Creek and Fish Creek, as well as other point and nonpoint sources.



## MONITORING ACTIVITIES

### Water Quality

Monitoring is done monthly at two different locations: Pamperin Park and Seminary Rd. Oneida EH&S Division has a Joint Funding Agreement with the USGS to maintain continuous water gauging. The USGS gauging station (USGS 04072150) is in Duck Creek at CTY FF. The station provides real-time discharge, gage height, and precipitation information. The gage provides the following benefits: 1) continuous flow data for evaluating water quality data and for calculating annual loads, 2) stream flow data prior to and at the time of sampling to use in interpretation of water quality data, and 3) flow data to assist in evaluating likely causes of fish kills.

### Biological Monitoring

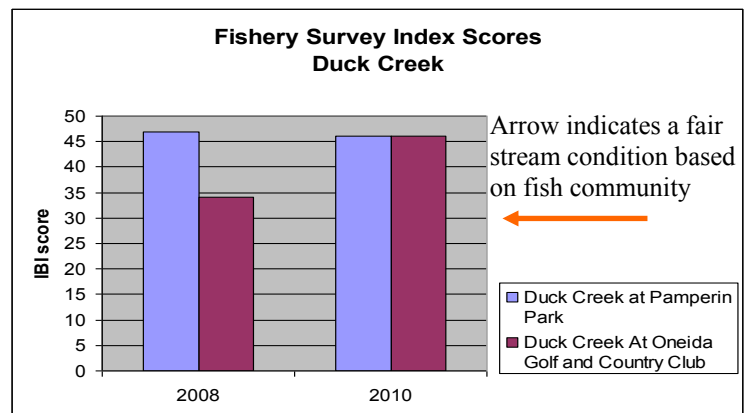
Benthic macroinvertebrate surveys are conducted annually at CTY FF. Fish surveys are also conducted annually at Pamperin Park and Oneida Golf and Country Club.

## RESTORATION PROJECTS

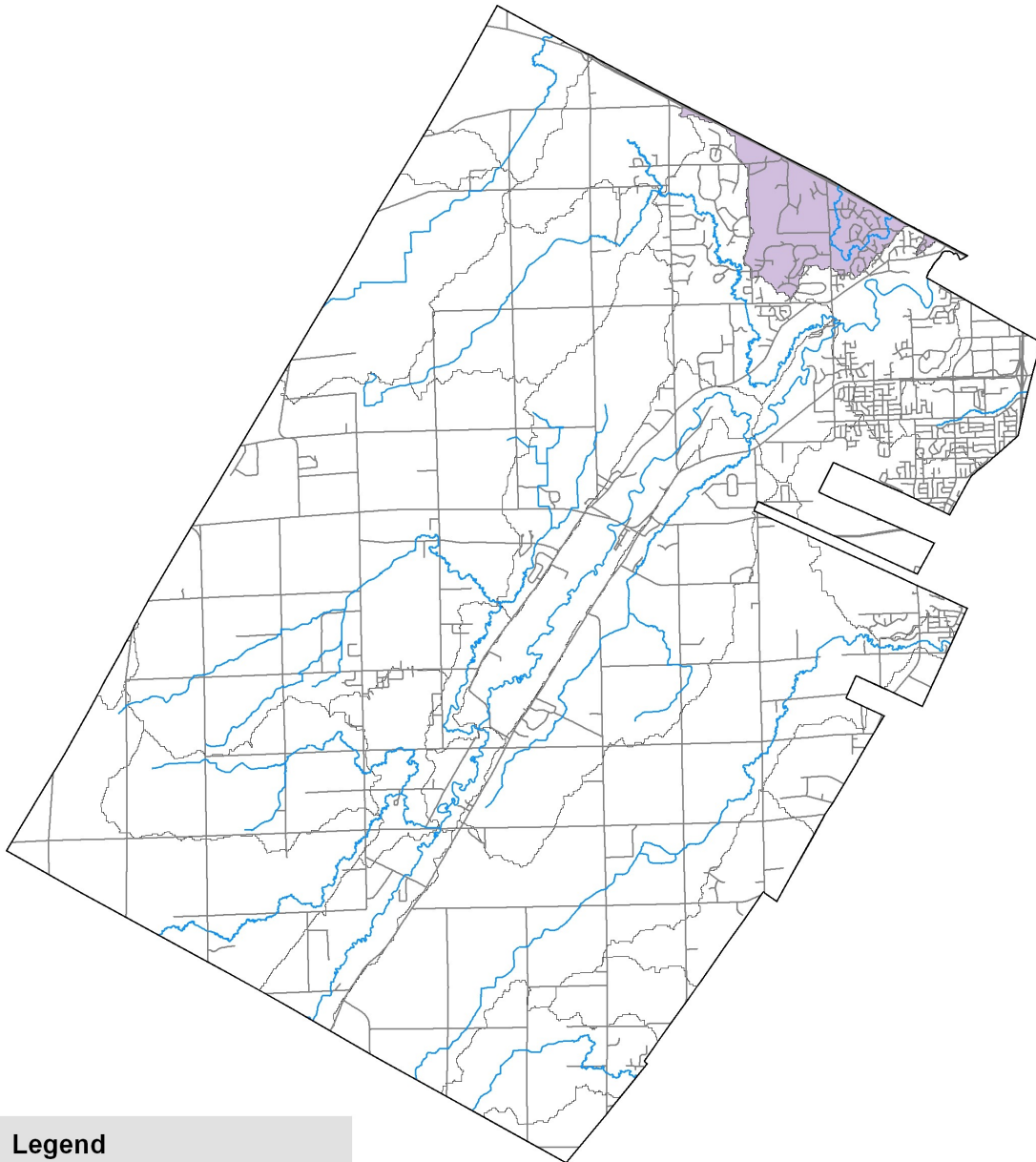
The Duck Creek Fish Passage project involves the removal of two dams on Duck Creek and enhancement of the fish passage barrier at a third dam. This project will enhance the ability of lake fish in Green Bay to access approximately 1-mile of spawning habitat upstream of two dams that have prevented fish passage. The project will also prevent the dispersal of sea lamprey, an invasive species. Other projects include stream buffering and invasive plant species removal.

## CULTURE AND HISTORY




This creek is culturally significant for the Oneida Peoples. Talu?kowànhne? kayhuhatáti translates to Duck Creek. When Oneidas moved from New York, they settled along Duck Creek because of its great abundance in fish and wildlife. *“When they arrived here they traveled around in the woods, they came to a river and were surprised to see so many ducks there, so they named it Duck Creek...”* (Loretta Metoxen, *Duck Creek Way of Life*). The area was similar to the homelands of the Oneida people and therefore made for an easier adjustment. Duck Creek was spiritually, economically, and environmentally important to the Oneidas. It is imperative that we restore its ecological stability.





# Oneida Reservation Lancaster Brook Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  Lancaster Brook



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Coordinate System: Wisconsin State Plane, Central Zone  
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# Teyotihyukwa·lúte? kawyhuhatáti (Thornberry Creek) and Lancaster kawyhuhatáti Watershed



Thornberry Creek

**Thornberry Creek**, a tributary to **Lancaster Brook** possess some of the highest quality habitats of the streams monitored. These streams support cold-water fish species. Of the Reservation’s watersheds, these two contain the highest percentage of naturally forested lands. Thornberry Creek is a Class I trout stream with a naturally reproducing brook trout population and has scored “Very Good” based on Hilsenhoff Biotic Index survey (see page 29 for definition). Due to sedimentation issues, Lancaster Brook has scored “Good” according to HBI survey. Lancaster

Brook is a Class II trout stream possessing relatively good water quality. This stream requires stocking. Development upstream of the Reservation and poor agricultural practices has led to degraded in-stream habitat, high peak flows (“flashiness”), and low base flow levels, and a lack of suitable substrate for fish. Teyotihyukwa·lúte? kawyhuhatáti translates to “they have a thorn attached to them creek”.

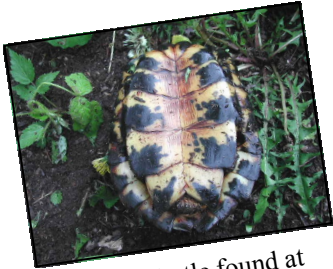
**MONITORING ACTIVITIES**

**Water Quality**

Monthly monitoring is done at Thornberry at Crooked Creek Dr. and Lancaster Brook at Navaho Trail.

**Biological Monitoring**

Fish and benthic macroinvertebrate surveys are conducted annually at the two locations mentioned above as well as a project site off of CTY FF. Recent fish surveys indicate that brook trout actively use the stream.



Wood Turtle found at Thornberry Stables

**RESTORATION PROJECTS**

**Lancaster Brook Stream Habitat Restoration**

Large Woody Habitat (LWH), in the form of strategically placed logs and rootwads, were anchored in an 1800 foot reach of Lancaster Brook (2007). A native seed mix and erosion mat were used to stabilize the banks of the stream. Tree seedlings were planted along the stream corridor (2008). One year after the project, pools and scouring were evident in the LWH reach. Post-project monitoring indicated Brook trout were in the restoration area. Strategically placed red pine logs took place in a 250 foot reach to enhance in-stream habitat (August 2010). This addition will provide: food for invertebrates as the logs decay; cover for aquatic organisms such as fish, amphibians, turtles; as well as habitat for mammals such as mink. The LWH placement will improve habitat for brook trout and provide food and cover for a variety of aquatic animals. Trees will be planted to provide shade, cooler temperatures, and future LWH.



Before LWH project—2007



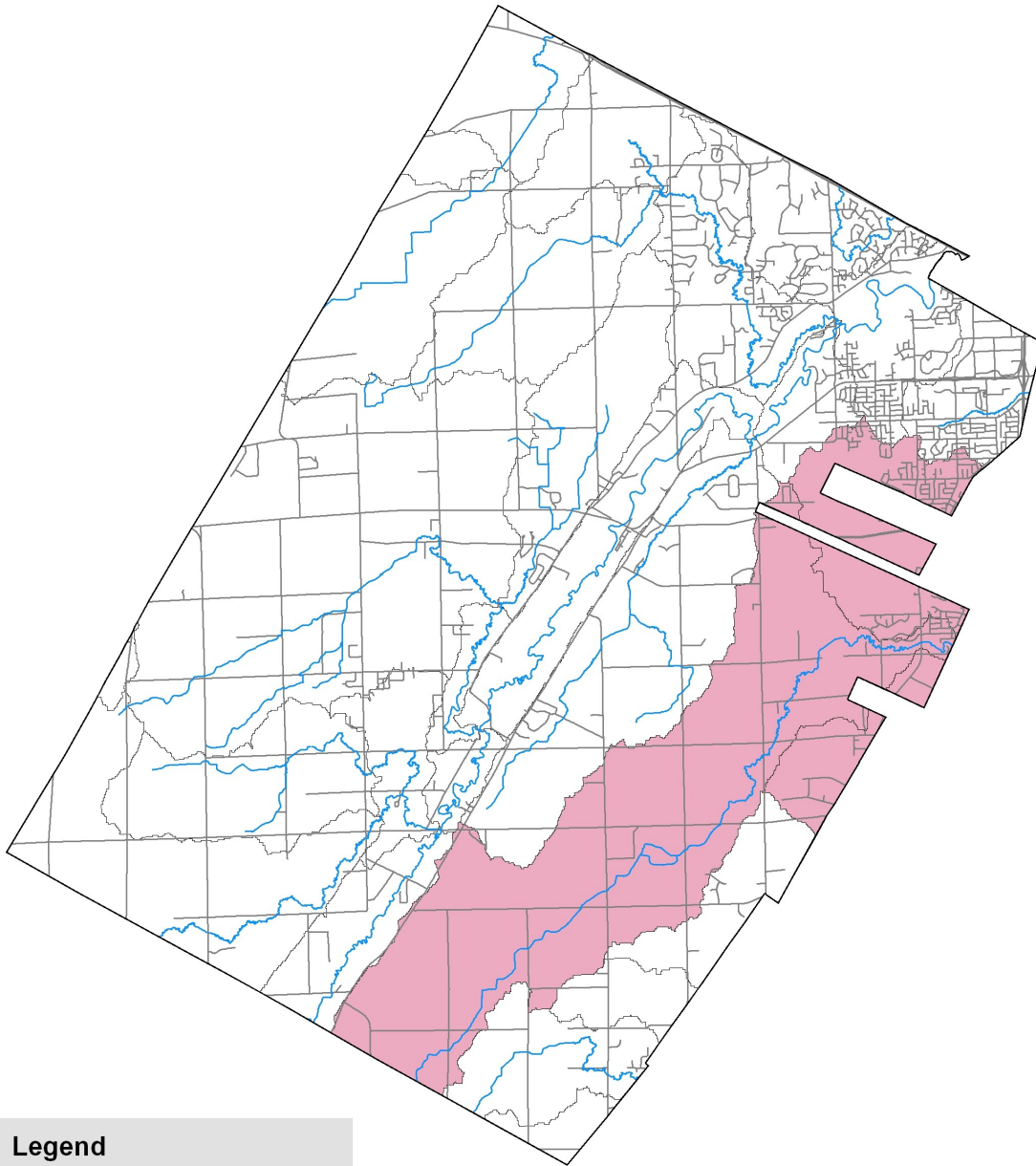
After LWH project—2007



After LWH—2008



# Oneida Reservation Dutchman Creek Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary
- Watersheds**
-  Other Watersheds
-  Dutchman Creek



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Source: Photography May 5, 2001  
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# Tatsmánné kawyuhatáti (Dutchman Creek) Watershed



Dutchman Creek

**Dutchman Creek** is rural stream and is low in terms of water quality and habitat. It is classified as 90% agriculture, 4.8% forest, and 2.4% grassland (USGS 1998). Poor land use practices are the main source of impairment to Dutchman Creek. Oxygen levels are low, and nutrient levels are high. Based on data collected at this site since 2005, Total Phosphorous and Dissolved Oxygen levels indicate a degraded condition. 88% of Total Phosphorous samples from 2005-2008 exceeded Oneida Water Quality Standards (OQWS). Over the same time period, 27% of the Dissolved Oxygen samples exceeded Oneida WQS.

## MONITORING ACTIVITIES

### Water Quality

Water quality monitoring is done monthly at Cyrus Lane.

### Biological Monitoring

Fisheries assessments have been conducted almost annually since 1997. Fisheries surveys conducted from 2002-2005 indicate a continual increase in stream health but decreases between 2005 and 2008. Overall IBI scores (Lyons 2006) based on intermittent metrics indicate fair water quality in Dutchman Creek. Benthic macroinvertebrate monitoring is done annually at Cyrus Lane and Packerland Drive. The invertebrate surveys indicate a “fair” condition based on HBI scores (08).



Water quality sampling using modern technology

## RESTORATION EFFORTS

Dutchman Creek Watershed is one of the most impacted watersheds due to agriculture nonpoint source (NPS) pollution. Agricultural best management practices (BMPs) have been developed along with programs in place to implement them. Below is a list of these BMPs that have been developed.

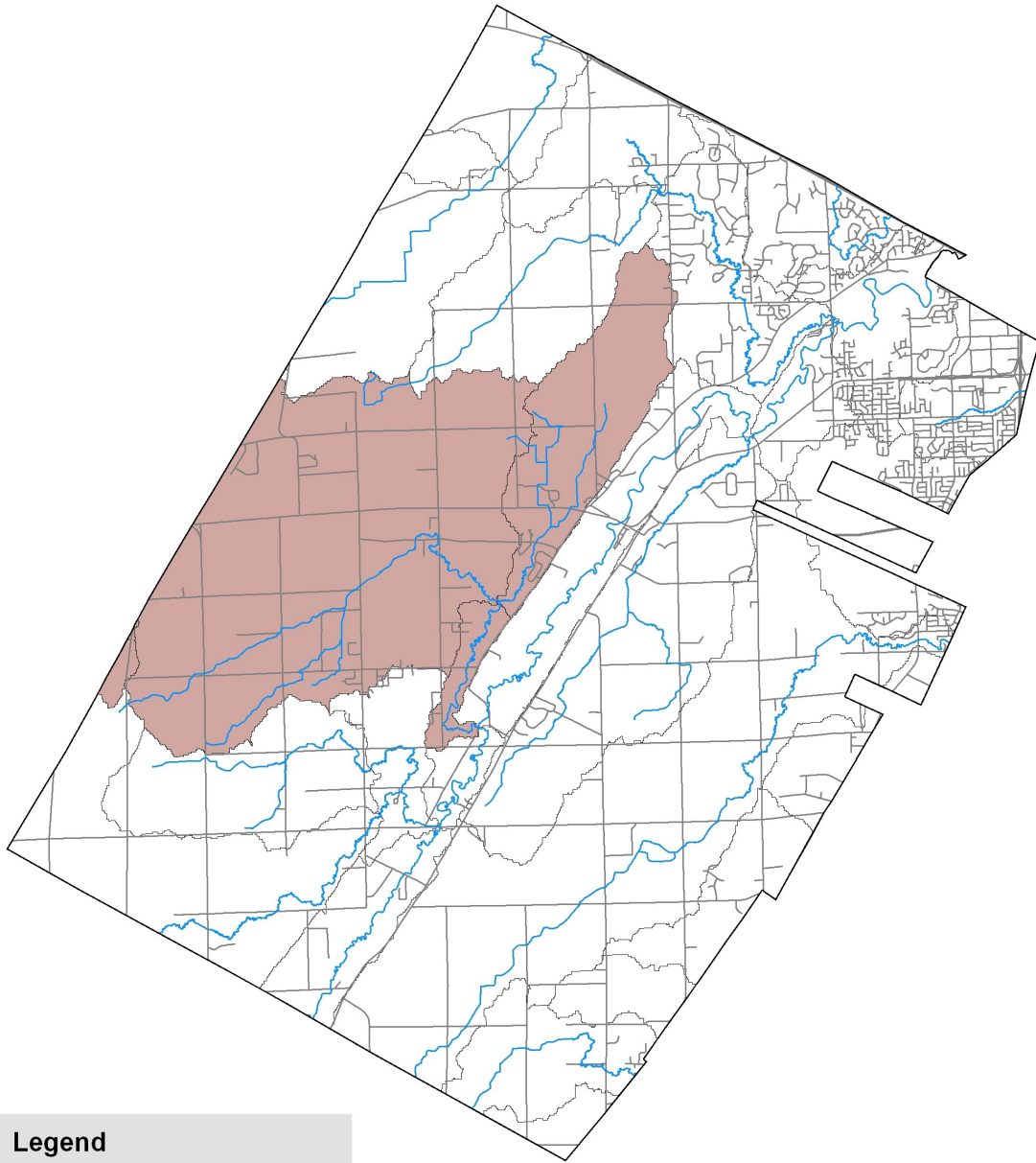
## CULTURE AND HISTORY

- manure storage systems
- manure storage system abandonment
- animal lot abandonment
- barnyard runoff control systems
- residue management
- contour farming
- cover and green manure crop
- intensive rotational grazing
- livestock watering facilities
- milking center waste control systems
- nutrient and pesticide management
- roofs and roof runoff systems
- strip-cropping




Tatsmánné is a made up word used for Dutchman. Dutchman Creek is located in an area that was once known as kana'táku, which means “within town”.

**Language lesson!** Kanatá'ke wá'ke? means “I'm going to Green Bay”



# Oneida Reservation Oneida Creek Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  Oneida Creek



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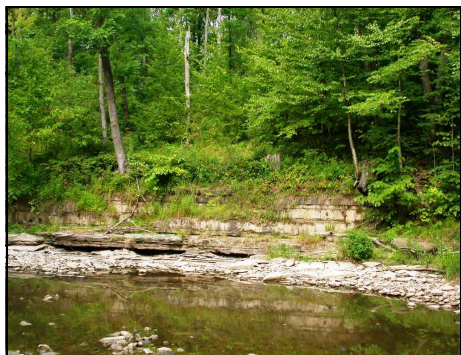
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## OnΛyote?a·ká· kawyhuhatáti (Oneida Creek) Watershed



Certain areas of **Oneida Creek** have high quality riparian zones (*areas along the bank of the river*), but overall this stream is of fair quality. Land use is 84% agriculture, 9% forested, 4% forested wetland, 3% non-forested wetland. This stream is usually fairly dry in the summer months. Monthly monitoring shows good oxygen levels, but Oneida Creek continues to have high nutrient levels, which lowers the water quality and affects fish and wildlife.



Oneida Creek during dry period

### MONITORING ACTIVITIES

#### Water Quality

Because Oneida Creek is dry during most of late summer and sometimes into the fall, and frozen during the winter, large numbers of samples/monitoring events are not possible. Our findings of stream health are based upon monitoring events that were taken when flow rates allowed for sampling.

#### Biological Monitoring

Fisheries surveys conducted from 2001-2003 indicate a continual increase in stream health but decreases between 2003 and 2008. Overall IBI scores (Lyons 2006) based on intermittent metrics indicate fair to good water quality in Oneida Creek. Benthic macroinvertebrate studies signify good/very good quality in recent years, based on HBI scores.

### RESTORATION PROJECTS

The biggest negative impacts to the Oneida Creek watershed are due to agriculture NPS pollution and hydrologic modification. Agricultural BMPs have been developed along with programs in place to implement them (See page 12).

### CULTURE AND HISTORY

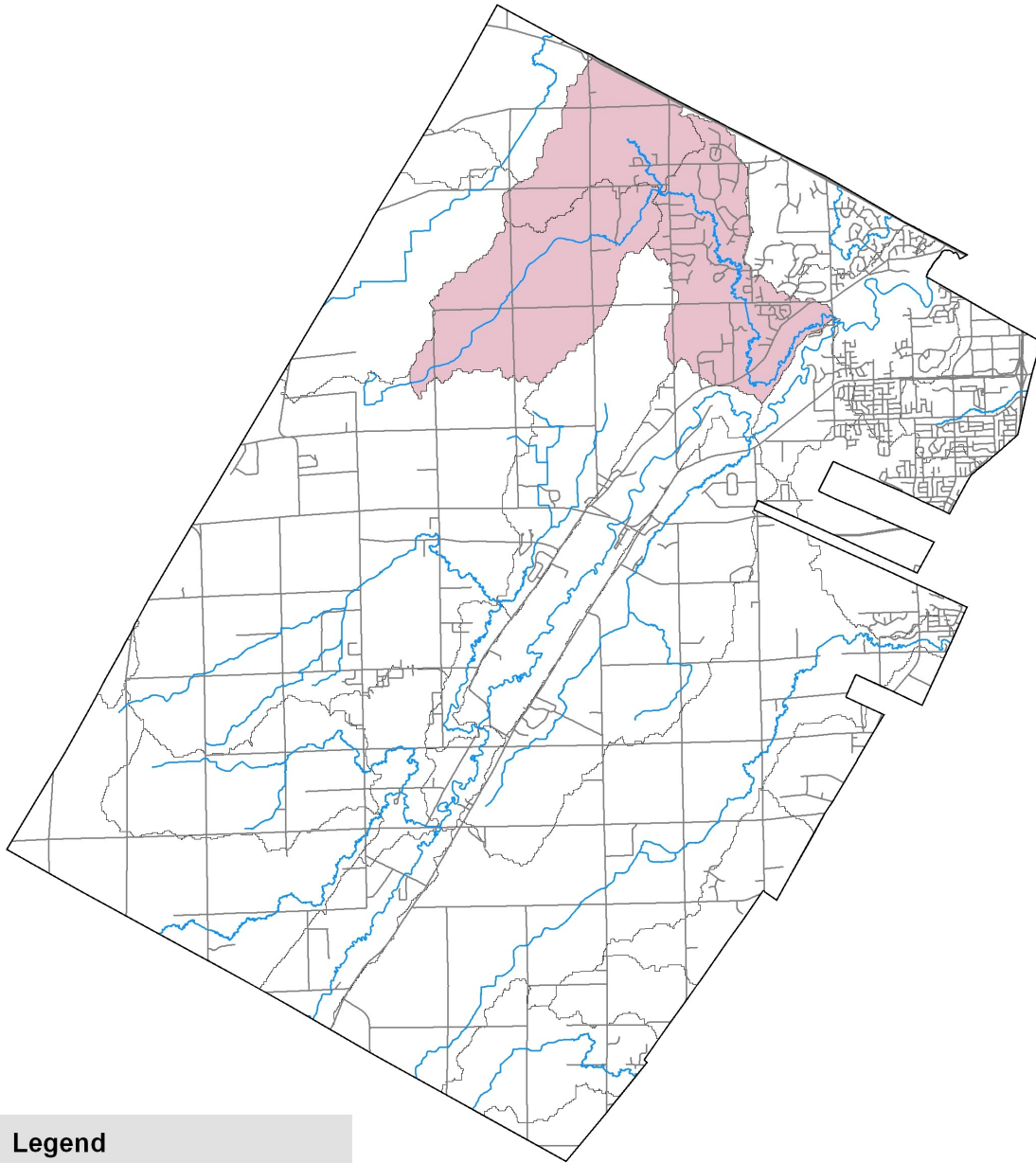
Ukwehuwé is the word we use for Oneida or original peoples. Oneida Creek didn't have a name in earlier years. Loretta Metoxen, tribal historian, recalls growing up along side "the creek".

*"Oneida Creek ceased to run in late summer and the stagnant waters become bright green with algae. We called this time dog days. But, in the spring, the creek would take over the entire valley at the time of the spring thaw. We children would open the bedroom door over the garage at night and listen to the roar of the water" (Circa., 1942-1950)*






**Language lesson!** Ukwehu·wé ni?i· means "I am Oneida". Ukwehuwé·ne kawyhuhatáti wá·ke? means, "To Oneida Creek I am going".



# Oneida Reservation Trout Creek Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  Trout Creek



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# Tsyotyá·ktu kawyuhatáti (Trout Creek) Watershed

Tsyotyá·ktu kawyuhatáti has one of the highest quality habitats of the streams monitored. It can support some cold-water fish species including the redbreast dace. Redbreast dace is a species listed as “Special Concern” by the state of Wisconsin. It also has one of the highest percentage of forested areas of all the streams on the Reservation. Land use in tsyotyá·ktu kawyuhatáti watershed is 52 percent agriculture, 28 % forest, 10 % grass/pasture, 9 % residential and only 1% commercial.



tsyotyá·ktu (trout)

## MONITORING ACTIVITIES

### Water Quality

Trout Creek is monitored monthly at CTY FF and Brookwood Way. Quarterly grabs are also taken at these sites.

### Biological Monitoring

Fish surveys are conducted at Brookwood Way and West Meadow Drive. Qualitative benthic macroinvertebrate surveys are conducted at Brookwood Way, West Meadow Drive, and Shady Drive. Quantitative surveys are taken at CTY FF.



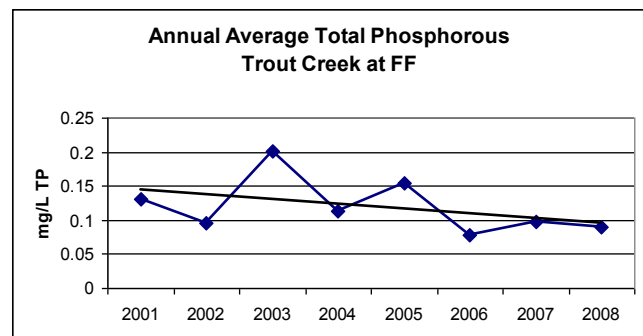
## RESTORATION PROJECTS

Four main projects implemented on Trout Creek have resulted in successful watershed improvements. First project: Installation of a manure containment system, which prevents manure runoff into the creek (2002). Second Project: Enhanced headwater tributary habitat by constructing meanders and installing large woody habitat (2003). Third project: Habitat enhancement using engineered log jams (2004). Fourth project: Brook trout reintroduction (picture left, 2009). The graph below shows that total phosphorous has steadily decreased since 2001.

### Future Projects

A re-routing of stream around the Brown County Golf Course will allow for fish passage. Oneida will be restoring natural stream morphology and habitat in a 500 ft reach of Trout Creek in the northern portion of the Oneida Reservation. The stream will be relocated and meandered. Meandering will improve stream hydraulics and in-stream habitat. It will allow for greater natural filtration

and assimilation of nutrients resulting in improved water quality. LWH will be added for enhancement of in-stream habitat and native vegetation will be planted in the riparian corridor to lower stream temperature and further protect and enhance water quality.

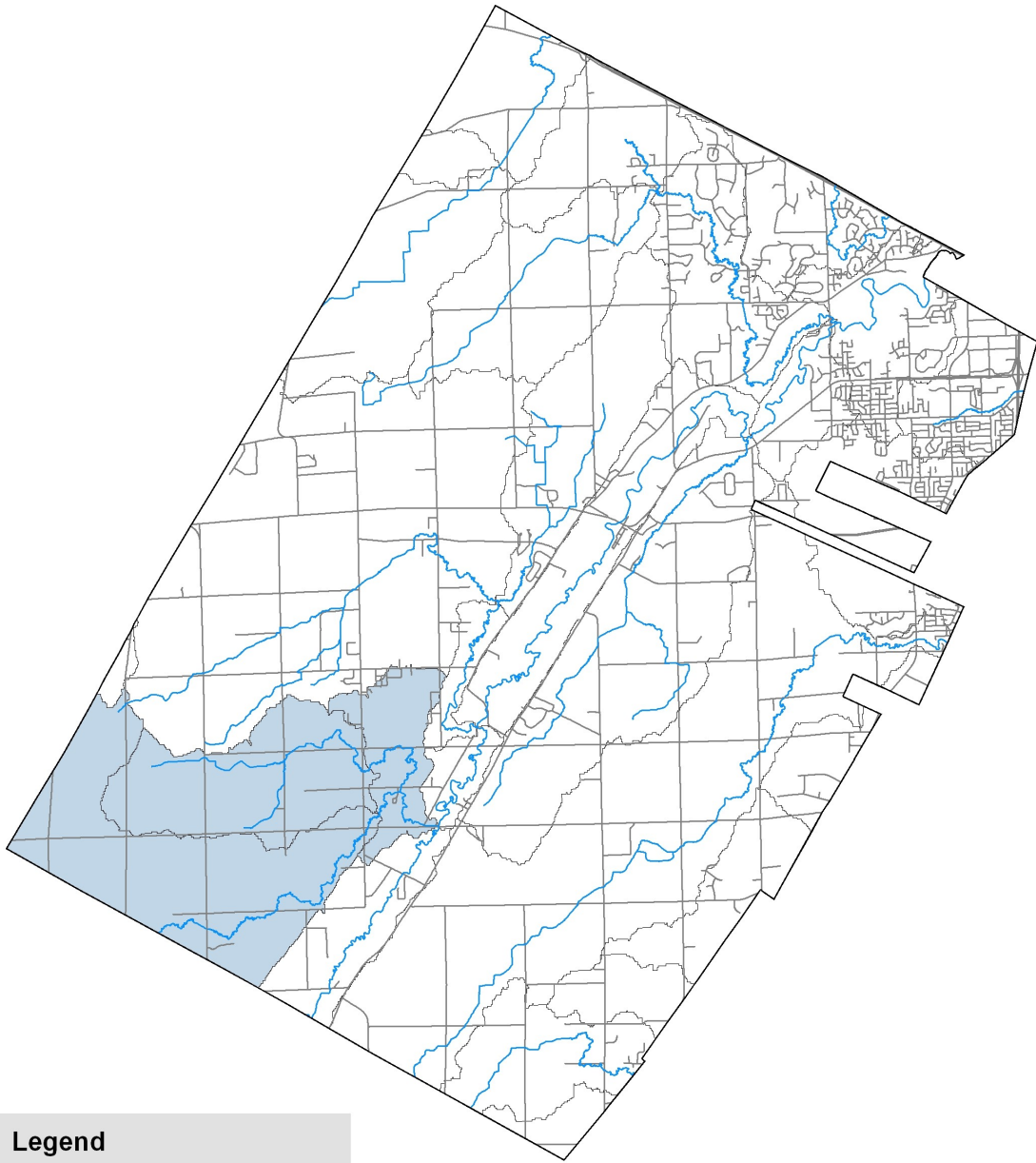


## CUTLURE AND HISTORY




The word “tsyotyá·ktu” also means, “its [body] is bent”. This is describing a characteristic of the fish. Trout Creek is located in an area that was once all swamp. It was called the Great Swamp. The area was almost entirely under water. It was abundant in Tamarack and Northern White Cedar trees. The men would go out during the winter to chop trees because the ground was frozen and easier to access.





# Oneida Reservation Fish Creek Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  Fish Creek



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N 703 Packerland Drive  
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(920) 496-2007  
File: FishC.mxd Date: 03/02/11



Source: Photography May 5, 2001  
Coordinate System: Wisconsin State Plane, Central Zone  
Lambert Projection, U.S. Foot  
Horizontal Datum: NAD83  
Vertical Datum: Nav88

# Kátsi kawyuhatáti (Fish Creek) Watershed



Fish Creek

Fish Creek is a fair quality stream. Land use is approximately 80% agriculture and 11% forest, 7% non-forested wetland, and 3.3% forested wetland. Because the stream is dry during most of the summer and frequently into the fall, and frozen during the winter, opportunities for stream monitoring are limited. Our findings of stream health are based on the relatively small number of samples and monitoring events that occurred. Compiling chemical, physical, and biological data at each monitoring location, provides an accurate representation of stream health. The greatest impacts to this body of water are excessive

nutrients and sediment runoff due to agricultural and construction practices.

## MONITORING ACTIVITIES

### Water Quality

Monthly monitoring is conducted at Lambie Rd. Grab samples are taken quarterly. Based on data collected at this site since 2005, Total Phosphorous levels indicate a degraded condition. 100% of Total Phosphorous samples from 2005-2008 exceeded Oneida Water Quality Standards.

### Biological Monitoring

Fish surveys were also conducted annually at the Lambie Road site. Invertebrate surveys indicate a “fair” condition based on HBI scores. In the summer of 2010 a rare caddisfly was found in a tributary to Fish Creek. This caddisfly, *Wormaldia shawnee*, is on the “Special Concern” list for Wisconsin. *Wormaldia shawnee* has only been found in two areas in Wisconsin, both on the Oneida Reservation.



Invertebrate sampling

## RESTORATION PROJECTS

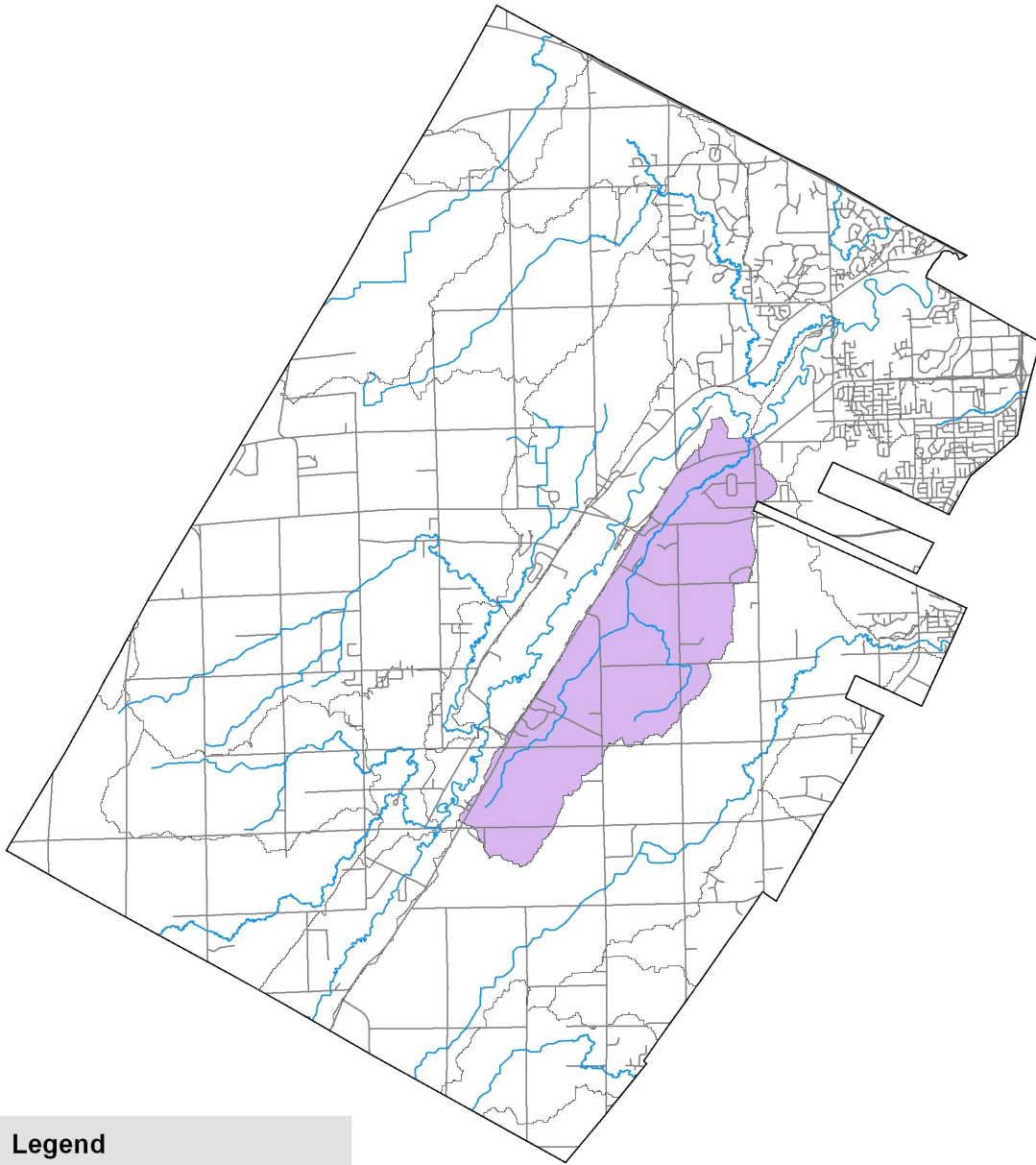
- Two grade stabilization structures (2008). These structures were built across a drainageway to prevent gully erosion.
- A waste storage abandonment (2008). This project incorporated an environmentally sound method to remove an obsolete waste (manure) storage facility.
- Four acres of wetland restoration (2008).
- Two agricultural stream crossing projects, totaling 300 feet (2009).

## CULTURE AND HISTORY




Kátsi kayhuhatáti translates to Fish Creek. The Fish Creek watershed area was once known as Kátsya?óhale? (impaled fish). When Oneidas moved here from New York they settled alongside Duck Creek because of the plentiful wildlife and access to fishing. When dams were built and fish were prevented from going to traditional fishing spots, this had a detrimental effect on the Oneida people.

*“Also, long ago a bunch of us used to go fishing and there was so much fish that we were able to catch them with our hands. Now there are dams put up and the fish could not come up stream where we used to fish. That’s why it seems that I can’t get used to living here in Oneida again.” (WPA: S23 Jessie Peters)*



# Oneida Reservation Silver Creek Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  Silver Creek



GEOGRAPHIC LAND INFORMATION SYSTEMS  
N 703 Packerland Drive  
Green Bay, Wisconsin  
(920) 496-2007

File: SC.mxd

Date: 03/02/11



Source: Photography May 5, 2001  
Coordinate System: Wisconsin State Plane, Central Zone  
Lambert Projection, U.S. Foot  
Horizontal Datum: NAD83  
Vertical Datum: NAV88



# Ohwistano·lú kawyuhatáti (Silver Creek) Watershed

**Silver Creek** (>85% agriculture) is a fair-medium quality stream in terms of habitat and water quality. Bank erosion is a problem. Monthly monitoring shows good oxygen levels, but Silver Creek continues to have high nutrient levels, which lowers the water quality and affects fish and wildlife. This cold water stream once supported brook trout. This was a likely home to the redbreast dace, a species of special concern in Wisconsin, which still occurs in nearby Trout Creek.

## MONITORING ACTIVITIES

Silver Creek is monitored monthly at STH 54; grab samples are done quarterly. Qualitative macrobenthic invertebrate samples are taken annually. Invertebrate surveys indicate a “fair” condition based on HBI scores (2008).

## RESTORATION PROJECTS

**The Silver Creek Channel Restoration Project (2008):** the natural stream morphology has been restored as well as the riparian wetlands. A wildlife corridor has been established as well as a buffer from adjacent farm fields.



Silver Creek restoration project before (left) and after (right) 2008.

## CULTURE AND HISTORY

Ohwistano·lú means precious metal. It is also the word used for money. Silver Creek was previously known as Bread Creek, after Daniel Bread. Chief Daniel Bread was “the most important Oneida Indian leader of the nineteenth century” and “the founding father of the Oneida Nation of Indians of Wisconsin” (Hauptman, McLester III, 2002). It is not known why Silver Creek was renamed. However, there is speculation about it being renamed after the surroundings land were acquired by non-Indians during the allotment era.



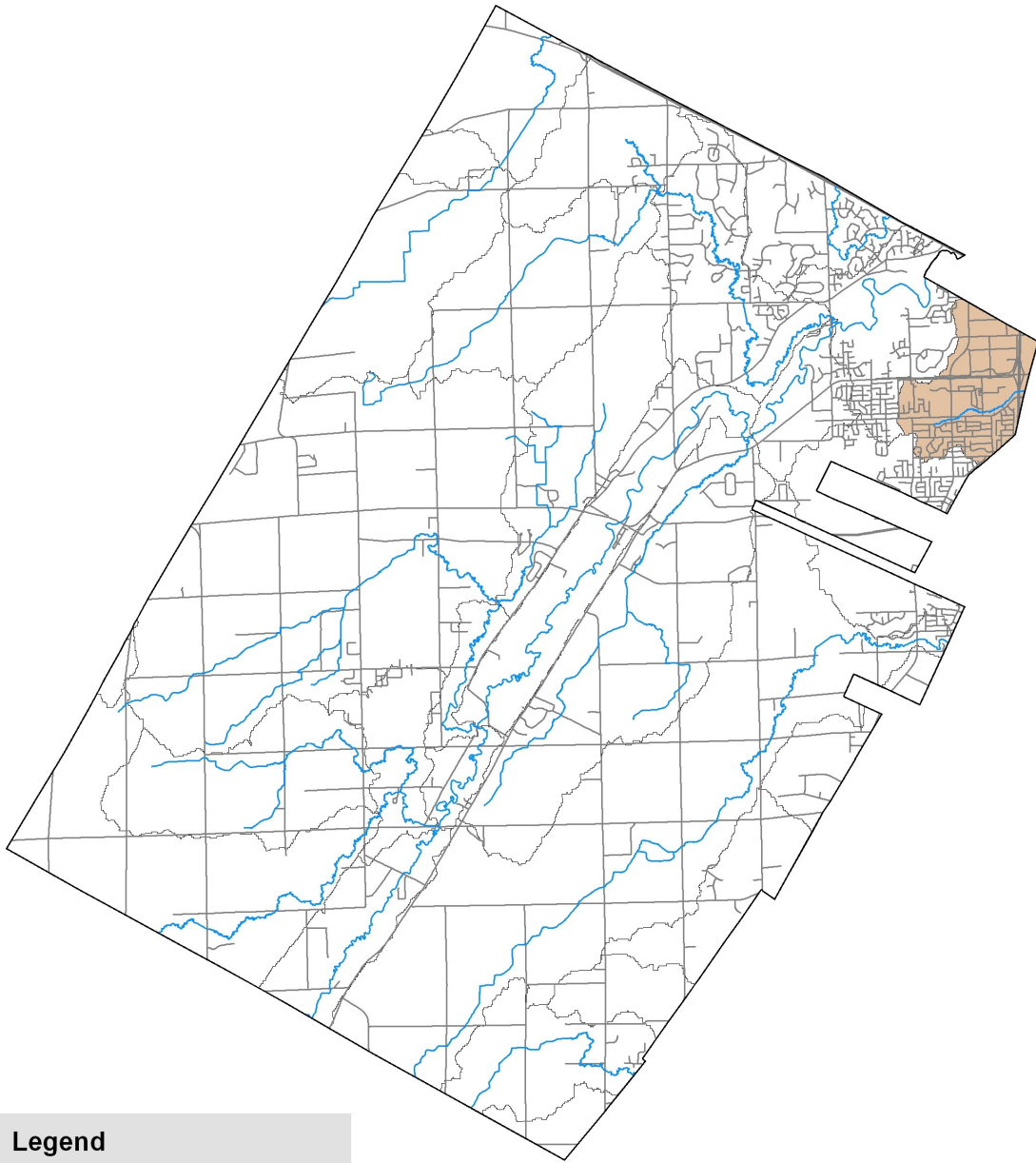
Silver Creek off of Highway 54






Silver Creek





# Oneida Reservation Beaver Dam Creek Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  Beaver Dam Creek



GEOGRAPHIC LAND INFORMATION SYSTEMS  
N 703 Packerland Drive  
Green Bay, Wisconsin  
(920) 496-2007

File: BDC.mxd

Date: 03/02/11



Source: Photography May 5, 2001  
Coordinate System: Wisconsin State Plane, Central Zone  
Lambert Projection, U.S. Foot  
Horizontal Datum: NAD83  
Vertical Datum: NAV88

# Tsyoní·tu tsi? thatinyatu·níhe? Kawyuhatati (Beaver Dam Creek) Watershed



Beaver Dam Creek

Beaver Dam Creek is a 1st order stream which flows primarily through an urban setting. It is classified as 52% urban, 40% grassland, and 7% forest (USGS 1998). The benthic invertebrate community suggests fair to poor water quality. Storm water runoff is the biggest impact to this stream. It was a former trout creek. However, development around the creek has impaired the waters. Storm water runoff prevents the creek from having a stable ecosystem. Due to urbanization and the costs associated with restoration in urban areas, restoration efforts are difficult to implement.

## MONITORING ACTIVITIES

This creek is currently not monitored for physical or chemical parameters. Fish surveys are done annually.

## CULTURE AND HISTORY

**Tsyoní·tu tsi? thatinyatu·níhe?** Beaver Dam Creek is in an area that was historically known as Tekashu?kalo·kál (a board cut in two). The names of creeks and streams changed when white settlers bought up most of the land. When Oneidas arrived in Wisconsin the wildlife was so plentiful it included beavers. Today, we don't see too many beaver on the Oneida Nation Reservation because the ecosystem can not sustain their needs for survival.



Invasive species management

*“When we first got here the Oneidas, or shall I say the Oneida Tribe of Indians, all kinds of animals were here, and so these are some of their names: deer, wolf, raccoon, bobcat, lynx, badger, muskrat, skunk, beaver, otter, grey squirrel, gopher, jack rabbit and tail rabbit.” (WPA:Z-15 Oscar Archiquett)*

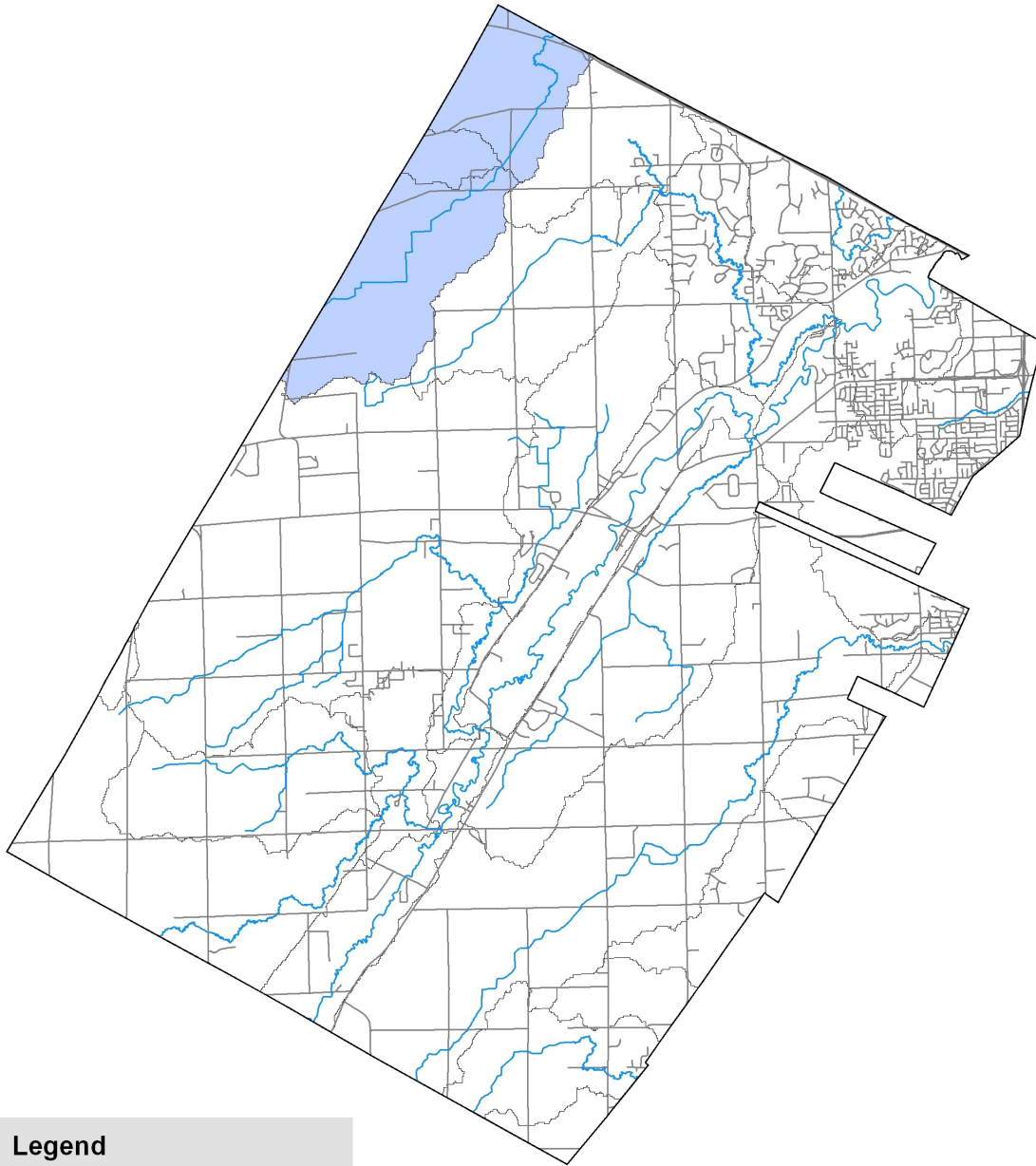


The beaver plays an important role in the Oneida creation story. In the beginning this world was covered with water. The only life were the waterfowl and other water creatures. Skywoman falls from a hole under the celestial tree in Skyworld. She is brought down by waterbirds onto turtles back. In order for Skywoman to survive she needs earth from the bottom of the ocean. Beaver is one of the divers who attempts to retrieve mud from the bottom of the sea for Sky Woman, but is not successful.










# Oneida Reservation South Branch Suamico River Watershed



## Legend

-  Creeks
-  Road Centerlines
-  Oneida Reservation Boundary

## Watersheds

-  Other Watersheds
-  South Branch Suamico River



GEOGRAPHIC LAND INFORMATION SYSTEMS  
N 703 Packerland Drive  
Green Bay, Wisconsin  
(920) 496-2007

File: SBSR.mxd

Date: 03/02/11



Source: Photography May 5, 2001  
Coordinate System: Wisconsin State Plane, Central Zone  
Lambert Projection, U.S. Foot  
Horizontal Datum: NAD83  
Vertical Datum: NAV88

# South Branch of Suamico Watershed

This watershed is primarily agricultural with forested and residential areas. The area contains upland hardwoods, floodplain forest, hardwood swamp, shrub swamp and wet meadow. It serves as the headwaters of the South Branch of the Suamico River and Trout Creek. Historic documentation and WI DNR surveys indicate northern pike once spawned within this area. The river and its surrounding habitat are hydrologically and morphologically degraded as a result of ditching, intensive agricultural practices, and development.



Suamico wetland



Invasive species monitoring

## MONITORING

### Water Quality

Water quality monitoring is conducted monthly during open water at Old Hwy. 29, Olson Rd. and Olson Rd. and CTY VV.

### Biological Monitoring

Northern pike young of year trapping are conducted annually. Benthos macroinvertebrate surveys done annually at Old Hwy. 29, Olson Rd., and Olson Rd. and CTY VV. Routine fisheries surveys are done annually.

## RESTORATION PROJECTS

The restoration of nearly 200 acres of wetland and associated upland habitat was completed in 2008. Sixty acres were planted with native seed mixes and 3000 wetland aquatic plants were hand planted. Over 6000 tree seedlings, including tamarack, white pine, swamp white oak, and cedar were also planted. A diversity of habitats are established including sedge meadow, grasslands, and hardwood swamp to accommodate the varying needs of different waterfowl species. The newly created wetland filters sediment and runoff from a 2000-acre mostly agricultural watershed prior to sending it to the South Branch of the Suamico River.

### South Branch of Suamico River Restoration Project

The Oneida Nation is currently in the design phase of a project that will restore several stretches of the South Branch of the Suamico River for northern pike spawning. The goal of the project is to redesign stream channels from their intensively ditched and straightened form to a natural, meandering state. The objectives are to lower peak flows, extend base flows, and filtrate nutrients and sediment to improve water quality and enhance in-stream habitat. Large woody habitat would be added for additional in-stream habitat and native vegetation would be planted along stream channels to enhance pike spawning habitat.



Restoration activities with high school students.

## CULTURAL AND HISTORY

The south branch of Suamico watershed was once entirely swamp land. It was known as the Great Swamp (See page 16). This area was historically known as *Kahuláhela?* (Gun over the door). This area has been renamed to *Ka?niwathahyunislá yotháha* (Coyote Run).

# Oᅇᅇyoteʔa·ká· Kanyatalayᅇshúha?

## Osnúshaʔ Kanya·tálayᅇ • *Finger Lake*



This is an artificial lake fed by groundwater. During rain events is fed by a stormwater pipe at its east end. The water source is an ongoing problem due to the discharge of nutrients from the urban stormwater system. It is roughly five (5) acres with a maximum depth of 16 feet. A dam and water control structure exist at the outlet where it drains into Duck Creek, some 1200 feet downstream of the lake. Algal blooms are suspected to result from nutrients entering the lake. These nutrients are from lawn fertilizers, grass clippings, and street runoff.



## Tyenᅇyokwáthaʔ tsiʔ tyutateʔnikuhlolyáhtaʔ “Where they Break the Stone”

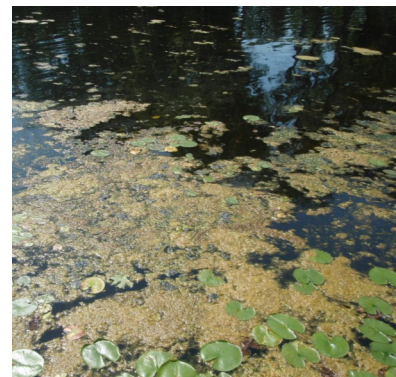


The Quarry is a man-made five-acre pond. In the early 1880s, Oneida men quarried this site and used the stone for the Episcopal church, located in central Oneida. It filled with groundwater and today it is a popular fishing location. Fish include Walleye, Bluegill, Largemouth Bass, White Suckers, and Carp. Nutrient levels are not as high as Finger Lake. However, Total Phosphorous levels in Quarry Lake are not meeting the OWQS. As a part of the Oneida Lake Project, EH&S is planning to use rocky material from the quarry Lake for the Oneida Lake. In return EH&S will modify the quarry to improve nursery habitat for fish.



## Phosphorous and Nitrogen • Aren't Nutrients good for you?

Many of the nutrients used by Mother Earth can “overfeed” a waterway to death. Sources of nutrient pollution are sewage and septic runoff, livestock waste, fertilizer runoff, detergents, and industrial wastes. Although every living thing needs nutrients to grow, too many nutrients in the water cause algae to grow out of control. At night, they suck all the dissolved oxygen (DO) out of the water so the fish and other organisms can't breathe. Also, when algae die, they are decomposed by oxygen-breathing bacteria that pull DO out of the water. During rain events rain from yards and agricultural areas run off into waterways causing heightened levels of phosphorous and nitrogen.



Osnúshaʔ kanya·talayᅇ



# Water Quality Data Summary

**Table 1.** Water Quality Parameters, Standards, and Frequency of monitoring events.

PARAMETER	ONEIDA WATER QUALITY STANDARD (WQS)	FREQUENCY
Alkalinity	<20 mg/L as Ca CO <sub>3</sub>	Quarterly
Chloride	11 ug/L Criterion Continuous Concentration; 19 ug/L Criterion Maximum Concentration	Quarterly
Conductivity	no WQS	Monthly
Dissolved Oxygen	6.0 mg/L*	Monthly
Nitrogen, Ammonia	Contact Water Resources Supervisor for	Quarterly
Fecal Coliform	no WQS	Quarterly
Nitrogen, Kjeldahl	no WQS	Quarterly
Nitrogen, Nitrite	no WQS	Quarterly
Nitrogen, Nitrate + Nitrite	no WQS	Quarterly
pH	within a range of 6.0-9.0	Monthly
Phosphorus Tot., Dis.	25 ug/L-lakes; 50 ug/L-streams; 100 ug/L streams not flowing into lakes	Quarterly
Residue-Filterable, (TDS)	250 mg/L for chlorides & sulfates	Quarterly
Residue-Nonfilterable, (TSS)	no WQS	Quarterly
Salinity	no WQS	Monthly
Sulfate	no WQS	Quarterly

**\*Except under stratified conditions in the hypolimnion in lakes and reservoirs.**

“Total phosphates as phosphorus (PO<sub>4</sub>-3 -P) shall not exceed 25 ug/L for any lake or reservoir. Total phosphates as for phosphorus (PO<sub>4</sub>-3 -P) shall not exceed 50 ug/L for any stream where the stream flows directly into a reservoir or lake. Streams that do not flow into reservoirs or lakes shall not exceed 100 ug/L.”

**Table 2.** Summary of Surface Water Quality Monitoring Activities during the FY08, FY09, FY10 grant period.

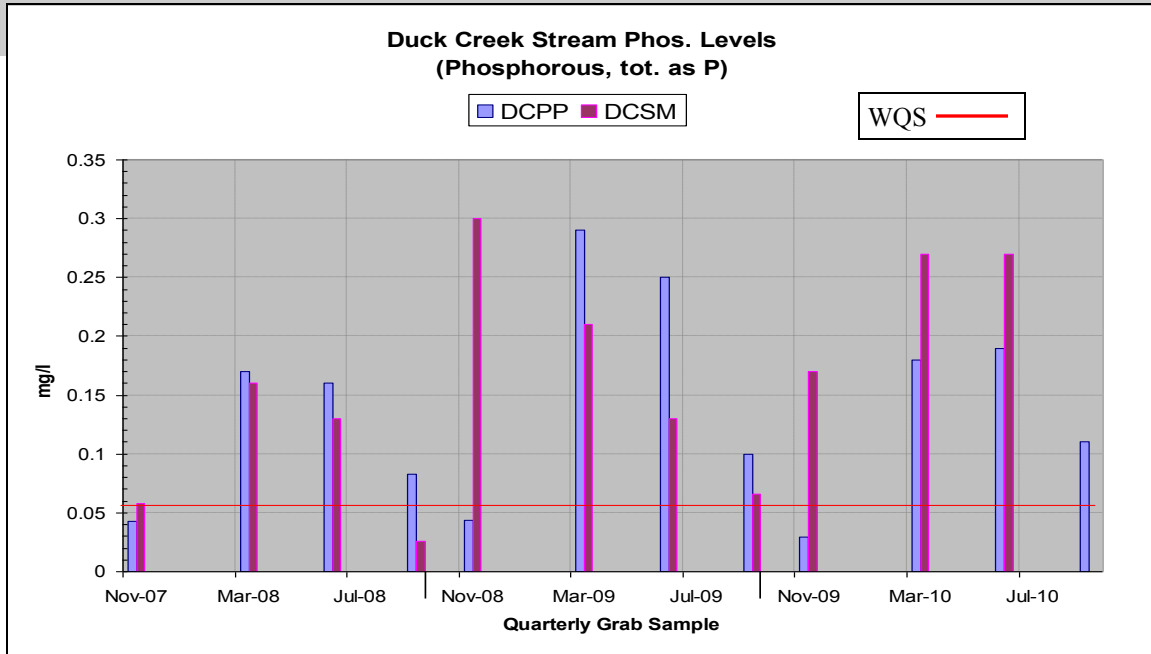
	Monthly parameters	Grab Sampling Events	# Streams sampled	# Lakes sampled	Met Oneida Phosphorous WQS*
2008	80	38	9**	2	51%
2009	89	42	10***	2	35%
2010	122	33	9****	1	32%

\*\*2 sites on Duck Creek    \*\*\*3 sites on Duck Creek    \*\*\*\*3 sites on Duck Creek/4 sites on Trout Creek

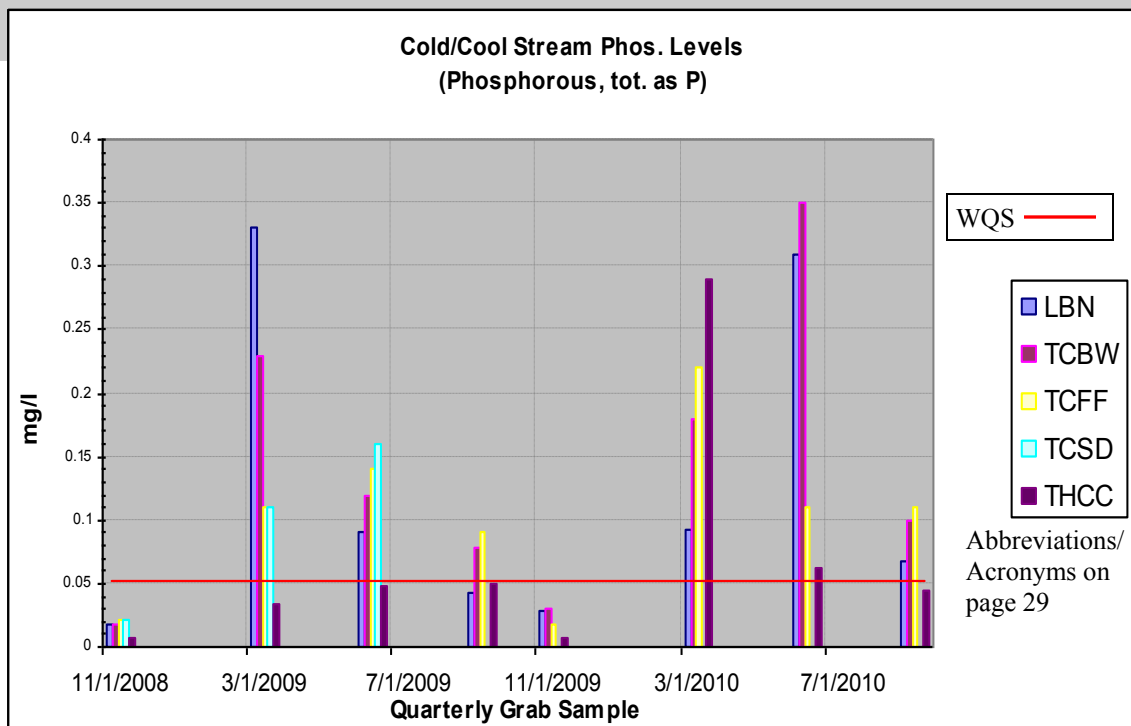


Graphs are another way to look at the health of Yukwahne'kánu *"Our Waters"*. Rain events can heighten phosphorous levels (see page 25 Phosphorous and Nitrogen discussion). In the graphs below you can see that levels increase during rain months.

**Figure 1.** Phosphorous levels for sampling events in FY08, FY 09, and FY10. The Oneida Water Quality Standard for Duck Creek is 0.05 mg/L. In FY08 25% of samples met the WQS. In FY 09 12.5% of samples met the WQS. In FY10 14% of samples met the WQS. This graphs shows that levels are heightened by increased rain in Nov 08 and 09.



**Figure 2.** Phosphorous levels for sampling events in FY08, FY09, and FY10. The Oneida Water Quality Standard for these streams is 0.1 mg/L. There is no data for FY08. FY 09 47% of samples met WQS. FY 10 31% of samples met WQS.



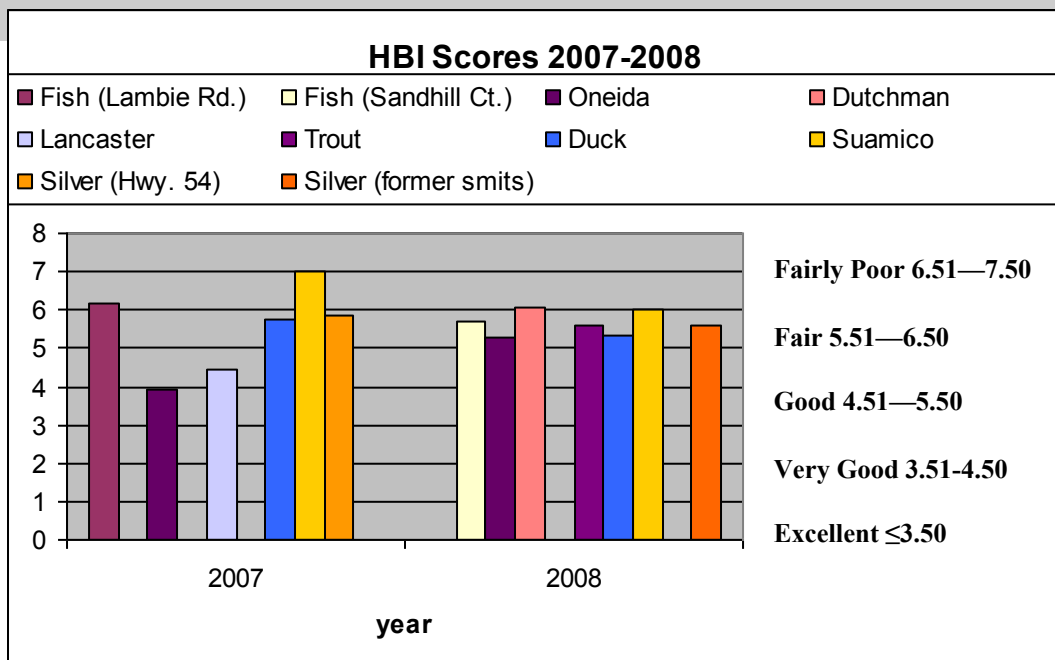


As a tribal entity we understand every plant and animal play important roles on Mother Earth. Even down to the smallest aquatic macroinvertebrates. Invertebrates are small bugs that can be seen with the naked eye. These macroinvertebrates are so small that they can be forgotten, but by understanding their importance to our ecosystem we gain a wealth of knowledge.

The surface waters of Oneida are monitored for biological indicators of stream health. Biological monitoring or “bioassessment” uses the known habitat preferences of aquatic animals to see how healthy the aquatic community is. Pollution and other negative factors can eliminate low tolerance organisms from streams. With successful restoration, these species should reappear. We use fish and invertebrate populations to determine how healthy the aquatic communities are. HBI scores are assigned to macroinvertebrates depending on the level of tolerance each bug has to pollution (see figure 3.)

In the summer of 2010 a rare caddisfly was found in Oneida Creek and Fish Creek. This caddisfly, *Wormaldia shawnee* (pictured above left), is on the “Special Concern” list for Wisconsin. *Wormaldia shawnee* has only been found in two areas in Wisconsin, both on Oneida Nation Reservation!

**Figure 3.** Hilsenhoff scores (HBI) for Oneida Streams in 2007-2008. Data from 2009 and 2010 has not yet been compiled. These scores are assigned based on invertebrate populations collected during annual surveys.



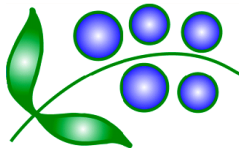


## Program Contacts:

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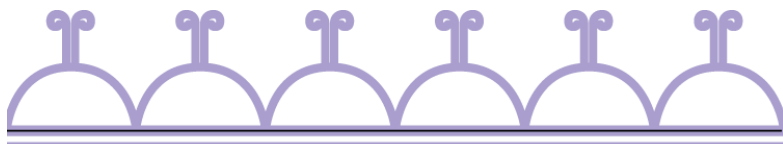
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(920) 869-4592

Margaret Ellis, Intern  
(920) 869-4547



## Abbreviations/ Acronyms

BIA	Bureau of Indian Affairs
CWA	Clean Water Act
DCPP	Duck Creek at Pamperin Park
DCSM	Duck Creek at Seminary Road
EH&S	Environmental, Health and Safety Division
GLIS	Oneida Geographic Land Information System
HBI	Hilsenhoff Biotic Index
IBI	Index of Biotic Integrity
LBN	Lancaster Brook at Navaho Trail
NPS	Non-Point Source
OWQS	Oneida Water Quality Standards
TCBW	Trout Creek at Brookwood Way
TCCF	Trout Creek at CTY FF
TCSD	Trout Creek at Shady Drive
TDS	Total Dissolved Solids
THCC	Trout Creek at Crooked Creek Drive
TSS	Total Suspended Solids







# Ohnekanusho·kúha

Ta· o·ná lawe·lú ayothnekahtatyúhake?. Né·n thonu· yukwahawítha?  
Now he intended for the waters to be flowing. From there we've taken from  
né·n akakwe·ní· ayakwaha?tana·wá·te?, né·n she·kú yukwatkathuháti  
it will be possible for us to moisten our throats, now still we are seeing it  
né·n yohtnekahtáti né·n yohnawelo·tú· né·n kahnekowa·ná·se? niyo·lé·  
the running waters the springs the large waters (oceans) as far as  
nikaníhale?. Kato·kál latilákwahse? né·n kahwatsilayá·tú·. O·ná né·  
it extends to. It's certain they're gathering it the many families. Now then  
sá atwawani·sá·te? né·n tho shakotkahlá·tu né·n katsi?shúha. Né·n  
also we will mention he has placed them here the fishes. Now  
lawe·lú yukwatáná·tsli? akáhake. Ta· o·ná úskah atwahwe?nu·ní·  
he intended our meal for it to be. So now as one we will join  
né·n yukwa?nikú·la? yahethwanehela·tú· né·n tho lawe·lú  
our minds we give him thanks that there he intended  
ayothnekahtatyúhake? né·n tsi?nu loyanakwáhtale?. Né· ya?te·kú  
for the waters to be flowing where he's layed down his tracks. A variety  
tho lotkahlá·tu né· katsi?shúha, né·n tho yukwalakwaháti né·n ská·ná·  
there he's placed the fishes, there we are gathering it peacefully  
ahunuhtúnyu né·n kahwatsilayá·tú·. Né·n she·kú yukwatkathuháti  
should they t/f the many families. Now still we're going along seeing  
né·n yotliwhahtatyé·tu. Ta· tho niyohtúhak né·n yukwa?nikúhla?.  
it's carrying on its r/. This is how it shall be our minds.

