

Chapter II: Environmental Setting

Section 1. Regional Profiles

The Oneida Lake watershed is situated within the Oswego-Seneca-Oneida Rivers Drainage Basin that drains to Lake Ontario, through the Gulf of St. Lawrence, to the Atlantic Ocean. The watershed includes three physiographic provinces: the Tug Hill Uplands, Appalachian Uplands, and Lake Ontario Plain (Lake Plain) Regions. The Lake Ontario Plain is also often referred to as the Erie-Ontario Lowlands or Oneida Lake Plain. Portions of six counties drain surface water and groundwater to Oneida Lake (**Map 2.1.1 – Area by County**). The following regional profiles include a brief characterization of the physical environment of each county. Regional profiles of the Tug Hill and Oneida Indian Nation also follow, as these regions are distinct, politically defined land areas that are important constituents of the Oneida Lake watershed.

1.1 Cortland County

Cortland County contains the smallest portion of the Oneida Lake watershed. Approximately 358 acres (0.6 square miles) of the 320,000-acre (500 square mile) county is included in Oneida Lake's Limestone/Butternut subwatershed. The character of this land is primarily rural and forested. Therefore, the area poses no significant water quality concerns for the watershed. Due to the small percentage (<1%) that Cortland County contributes to the Oneida Lake watershed, additional data specific to Cortland County is not provided in this chapter. Information about the Limestone/Butternut subwatershed, however, can be found in Chapter II Section 4.1.4 *Limestone/Butternut Creek Subwatershed*.

1.2 Lewis County

Lewis County is located in the northern-most portion of the Oneida Lake watershed and does not border the lake itself. Lewis County has 84,971 acres (132.8 square miles) of land located in the Oneida Lake watershed, including portions of six towns. This land contributes 9.7 percent of the total Oneida Lake watershed area and drains to the East Branch of Fish Creek. The 816,000-acre (1,275 square mile) Lewis County is located halfway between the St. Lawrence River and the New York State Thruway, and is bordered on the west by the Tug Hill Uplands and on the east by the Adirondack Mountains. Lewis County is rural, containing many villages and hamlets but no cities. According to the U.S. Census Bureau (2000) approximately 996 people live in the Lewis County portion of the Oneida Lake watershed.

Lewis County contains portions of three distinct environments: the Tug Hill Uplands (part of which is in the Oneida Lake watershed); the Black River Valley (noted for its thriving dairy industry, yet is located outside the Oneida Lake watershed); and the Adirondack Mountains (the nation's largest forest preserve, also outside the Oneida Lake watershed). Within Lewis County each of these regions is unique, and is most noted as offering a variety of recreational opportunities.

Lewis County is the “land of the great outdoors” with numerous forests and streams. The county contains four deer management units and several hundred thousand acres of public land, forest preserve, wildlife management area, and state forestland. Lewis County is the state's top producer of maple syrup and boasts recreational opportunities such as canoeing, kayaking, camping, snowmobiling, skiing, biking, fishing, golfing, hunting, horseback riding, hiking, and ATV riding. The southern portion of Lewis County that falls within the Oneida Lake watershed is a remote, densely forested area with many wetlands.

More detail about the Tug Hill portion of the watershed is found in Chapter II, Section 1.7.1 *Tug Hill Region*, Section 3 *Watershed Characteristics*, Section 4 *Tributaries*, and in other areas throughout this report.

1.3 Madison County

Madison County borders the southern shore of Oneida Lake and comprises 23.8 percent of the Oneida Lake watershed. The county itself is rural in nature and covers a total area of approximately 419,840 acres (656 square miles). The county has one city, Oneida, and several towns and villages. The northern half of Madison County drains to Oneida Lake. This part of the watershed contains portions of 11 towns, the City of Oneida, and the Villages of Canastota, Cazenovia, Chittenango, Munnsville, and Wampsville (the county seat). Many of the Madison County towns located in the Oneida Lake watershed have experienced an increase in residential growth rates as a result of the expanding Syracuse metropolitan area. Oneida Lake’s southern shoreline, which is the northern border of the Towns of Lenox and Sullivan, is the most heavily developed area of Madison County. According to the U.S. Census Bureau (2000) approximately 50,607 people live in the Madison County portion of the Oneida Lake watershed.

A dramatic change in elevation can be found as the county transitions from the low-lying Lake Plain region (in approximately the northern third of the county) to the Appalachian Upland region (comprising the remainder of the county.) Both of these regions are found in the Oneida Lake watershed. Approximately 48 percent of the total county land use is dedicated to farming practices, with approximately 700 active farms. The primary industry is agriculture, and Madison County is ranked 11th in total milk production for New York State. In addition, potatoes, onions, celery, and other cash crops are grown on over 2,000 acres (3 square miles) of muck soil in the northern part of the county.

The primary tributaries within Madison County that drain to Oneida Lake are included within the Oneida, Cowaselon, Chittenango, and Limestone Creeks subwatersheds. The remaining portion of the county drains to the Susquehanna and Mohawk River Basins. Madison County is situated at a higher elevation, upstream from most of its neighbors. The County boasts high quality streams and trout fisheries, several lakes and reservoirs, unique wetlands of state and national significance, and quality surficial aquifers.

1.4 Oneida County

Oneida County comprises 34.7 percent of the land area within the Oneida Lake watershed and is situated primarily to the east and northeast of Oneida Lake. The County has a total land area of

approximately 776,320 acres (1,213 square miles) and includes the eastern 1/2 of the lake itself. The county's population is concentrated in and around the cities of Utica (which is not located in the watershed) and Rome (which has its western 1/2 located in the watershed). Other smaller population concentrations can be found in the City of Sherrill (located entirely in the watershed) and several villages. The areas of Oneida County that are within the Oneida Lake watershed include portions of 13 towns, the Villages of Camden, Oneida Castle, Sylvan Beach, and Vernon, and the cities of Rome and Sherrill. According to the U.S. Census Bureau (2000) approximately 59,557 people live in the Oneida County portion of the Oneida Lake watershed.

The primary tributaries within Oneida County that drain to Oneida Lake include the Oneida Creek, Fish Creek, Wood Creek and North Shore subwatersheds. The portion of the Erie Canal within the Oneida Lake watershed primarily flows through Oneida County toward the west and into Oneida Lake. The City of Rome is near the hydrologic drainage divide between the eastward and westward flows of the Erie Canal.

Surface topography of Oneida County is variable. There are five major physiographic provinces in the county including the Tug Hill Uplands, Adirondack Highlands, Lake Ontario Plain, the lowland valley along the Mohawk River, and the Appalachian Uplands. The County's portion of the Oneida Lake watershed includes the lowlands of the Lake Plain and uplands of the Appalachian and Tug Hill physiographic provinces. Elevations in Oneida County vary more than 1,500 feet from the lowlands in the valley corridor near Oneida Lake to the higher elevations of the Appalachian Plateau and Adirondack highlands.

Agricultural land use is concentrated in the southern and western portions of Oneida County, while lands to the north and northwest are primarily forested and nearer the Tug Hill region of the watershed.

More detail about the Tug Hill portion of the watershed is found in Chapter II, Section 1.7.1 *Tug Hill Region*, Section 3 *Watershed Characteristics*, Section 4 *Tributaries*, and in other areas throughout this report.

1.5 Onondaga County

Onondaga County borders the southwestern portion of Oneida Lake and has a total land area of 499,200 acres (780 square miles). The county's municipal boundary stops at Oneida Lake's south shore. The City of Syracuse (partially located in the Oneida Lake watershed) is the county seat and serves as an important industrial service and transportation center in Central New York. Most of the people in Onondaga County, as well as the surrounding counties, make their living in Syracuse. As a result of influences from Lake Ontario, Syracuse has the largest annual snowfall of any metropolitan area in the United States with a population over 200,000. In addition to the City of Syracuse, portions of 8 towns and the Villages of East Syracuse, Fayetteville, Manlius and Minoa are located in the Oneida Lake watershed. According to the U.S. Census (2000) approximately 110,078 people in Onondaga County live within the Oneida Lake watershed. Onondaga County contains the largest percentage of the population within the Oneida Lake watershed, but only 14.9 percent of the watershed's land area. The eastern part of the county drains to Oneida Lake via the Chittenango and Limestone/Butternut Creeks subwatersheds.

The northern portion of Onondaga County is within the Lake Plain region, while the southern portion is part of the Appalachian Upland region. In Onondaga County, parts of both of these regions fall within the Oneida Lake watershed. In general, agriculture and forestry are the largest land uses in the county. Dairying is the principal type of farming. Most of the forest acres are commercial, and the majority of the acres occur in small, scattered woodlots. Forests in the southern portion of the county are mostly natural and reforested areas owned by the county or state. The northern portion of Onondaga County is much more populated and developed than the rural farm and forest land to the south.

1.6 Oswego County

Oswego County is bounded on the north and west by Lake Ontario and on the south by Oneida Lake. The western portion of Oneida Lake is actually contained within the county, as Oswego's southern municipal boundary extends to Oneida Lake's southern shore. The county covers an area of approximately 619,520 acres (968 square miles) and encompasses two physiographic regions, the Tug Hill Uplands and the Lake Ontario Plain. The entire county eventually drains into Lake Ontario, either through the Oswego River, Salmon River, Oneida Lake, or through direct drainage. Oneida Lake drains 146,557 acres (183 square miles) of Oswego County. This land comprises 16.8 percent of the total Oneida Lake watershed land area and flows to Oneida Lake through the Fish Creek and North Shore subwatersheds. In Oswego County these subwatersheds drain portions of 9 towns and the Villages of Central Square and Cleveland. According to the U.S. Census Bureau (2000) the Oneida Lake watershed population in Oswego County is approximately 40,852 people.

Agriculture and woodland are the predominant land uses in Oswego County. Oswego also contains one of the largest acreages of wetlands in the state, most of which contain muck soils. Big Bay and Three Mile Bay State Wildlife Management Areas found along Oneida Lake contribute to the county's wetland acreage. In addition to wetlands, Oswego County's land area specifically within the Oneida Lake watershed is also largely forested.

1.7 Overlapping Areas

1.7.1 Tug Hill Region

The Tug Hill region is a physiographic area within the northern portion of the Oneida Lake watershed that overlaps portions of Lewis, Oneida, and Oswego Counties. The entire Tug Hill region covers approximately 1.3 million acres (2,100 square miles) in north-central New York State stretching west from the Adirondacks to Lake Ontario and north from Oneida Lake to the Black River. The entire Tug Hill region encompasses 41 towns (containing 21 villages). About half of those towns have a portion of their land in the Oneida Lake watershed (**Map 2.1.2** – Tug Hill Service Region).

The defining feature of the Tug Hill region is the “plateau” – a physiographic area delineated by natural features of the land including elevation and topography. The region's elevation peaks at 640 meters (2,100 feet). However, the Tug Hill area is also referenced by the political

subdivision of municipalities included under the guidance of the Tug Hill Commission. Municipalities within the entire Oneida Lake watershed situated north of the Lake (except for the City of Rome) are included under the coverage of the Tug Hill Commission. The political structure of the Tug Hill region and Tug Hill Commission are discussed further in Chapter V, Section 1.3.2.

Logging, farming, hunting and fishing have shaped Tug Hill since the early 1800s. The abandonment of farmland, coupled with the state's reforestation efforts, resulted in the core forest's regeneration and the resurgence of logging and related industries. Approximately 12 percent of Tug Hill is publicly owned forestland. Large, privately owned parcels of land have allowed the core forest of Tug Hill to remain intact and relatively free from development.

Tug Hill is largely known for forestry, hydroelectric projects, and outdoor recreation as a result of its poor soils, few roads, and severe winter snowfalls. Water, one of Tug Hill's most abundant resources, is used for recreation (canoeing and world-class fishing), generating electric power, and municipal and industrial water supplies. Large users of surface water in the Oneida Lake watershed include wire-manufacturing firms along the West Branch of Fish Creek, fish hatcheries, and the cities of Rome and Oneida.

1.7.2 Oneida Indian Nation

The Oneida Indian Nation of New York is a federally recognized Nation of 1,100 members. The homeland of the Oneida Indian Nation is located in the southern Oneida Lake watershed within Madison and Oneida Counties. The Oneida Indian Nation currently owns approximately 15,000 acres (23 square miles), most of which lies in the Oneida Creek subwatershed. The majority of the land is located in the Towns of Vernon and Verona in Oneida County and the Town of Stockbridge and the City of Oneida in Madison County. The Turning Stone Casino and Resort, their major entrepreneurial effort, is located in the Town of Verona in Oneida County.

The Oneida Indian Nation of New York, together with the Oneida Indian Tribe of Wisconsin, and the Thames Band of Oneida (Canada) lay claim to over 200,000 acres in Madison and Oneida Counties, much of which is in the Oneida Lake watershed. In an effort to settle the land claim, the three Oneida tribes, New York State, and Madison and Oneida Counties entered into negotiations in 1999. In February 2002, New York State, Madison and Oneida Counties, and the Oneida Indian Nation of New York announced that a framework for settlement had been agreed upon. The framework included the establishment of a New York Oneida Indian reservation of 35,000 acres (54.7 square miles), 5,000 (7.8 square miles) of which would remain forever as green space. Although the location of a future reservation has not been identified, it is expected that it would be within the Oneida Creek subwatershed.