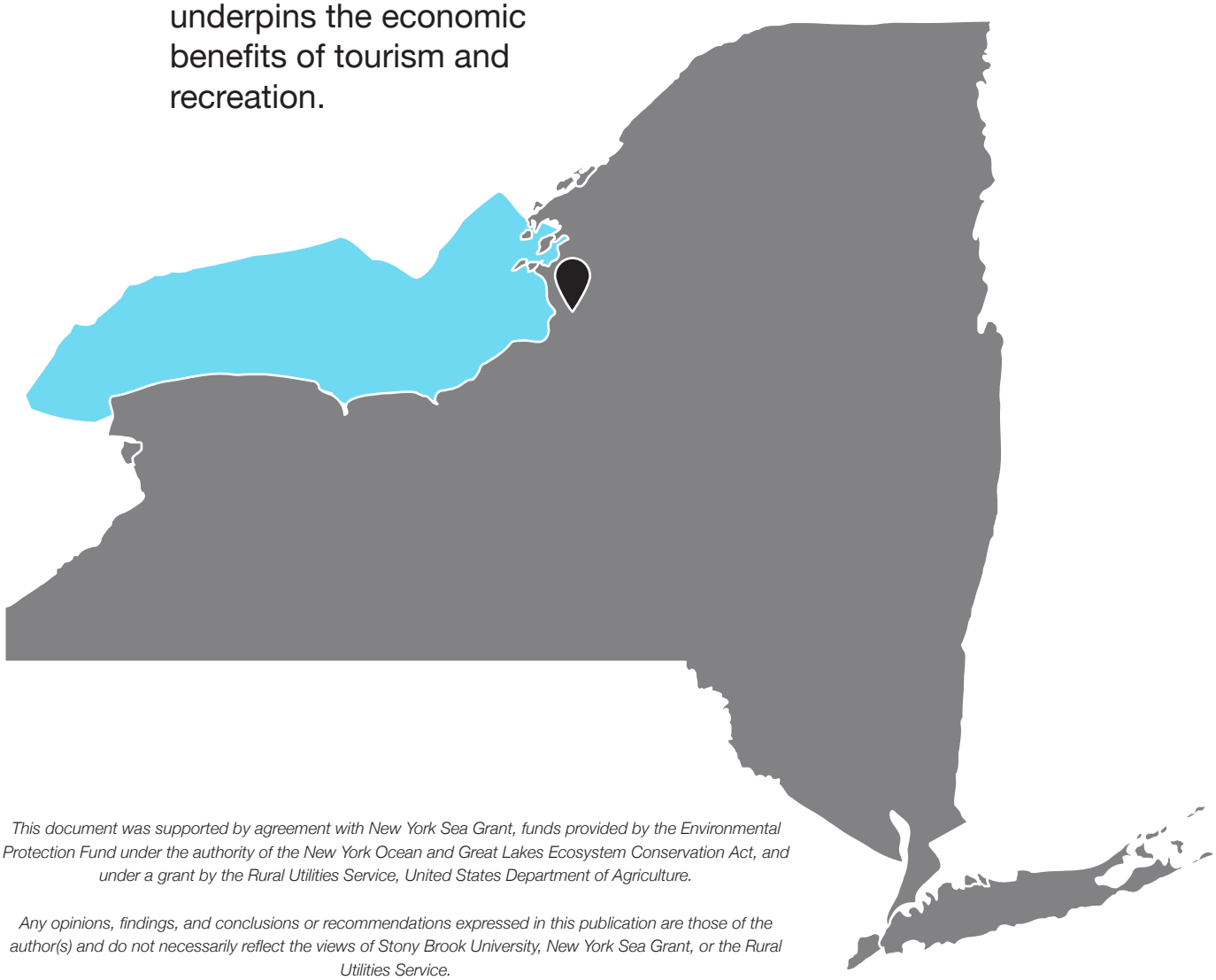
Environmental Finance Center
Syracuse University

Watershed Quality Assessment

Town of Sandy Creek, New York

The health of the Little Sandy Creek watershed is critical to the livelihood of the citizens of the town and to the biodiversity of the area, which underpins the economic benefits of tourism and recreation.

The maps presented in this document highlight the condition of the wetland, sensitive dune and shoreline areas.



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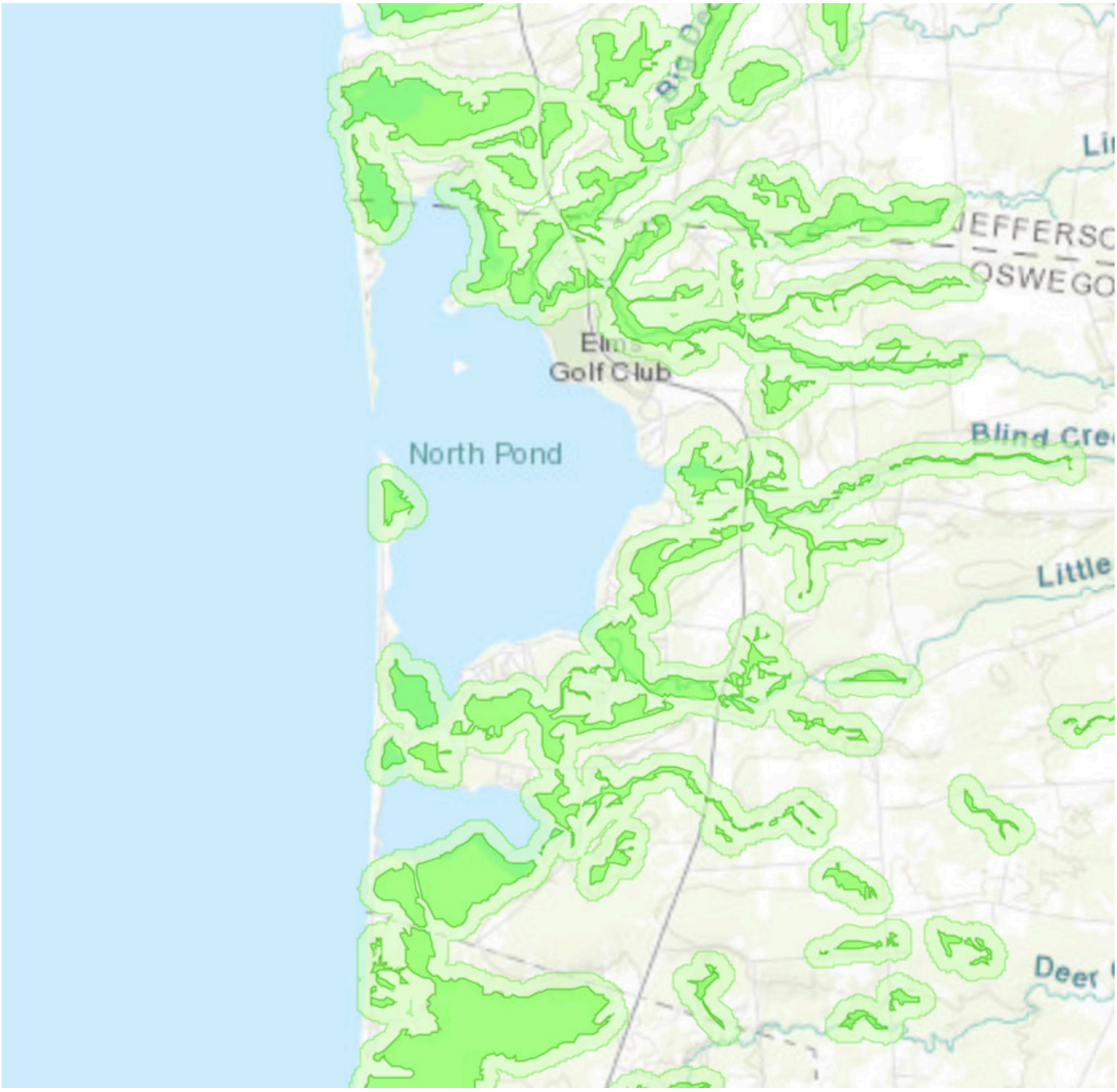
Introduction

Scientific research documents that buffer zones, vegetative strips of land along waterways, protect water quality and provide environmental and economic benefits. State regulated freshwater wetlands and noteable areas of “significant natural communities” surround the North and South ponds, as defined by the NY Department of Environmental Conservation. The quarter mile buffer zones represented on the map would minimize impacts of adjacent land use.

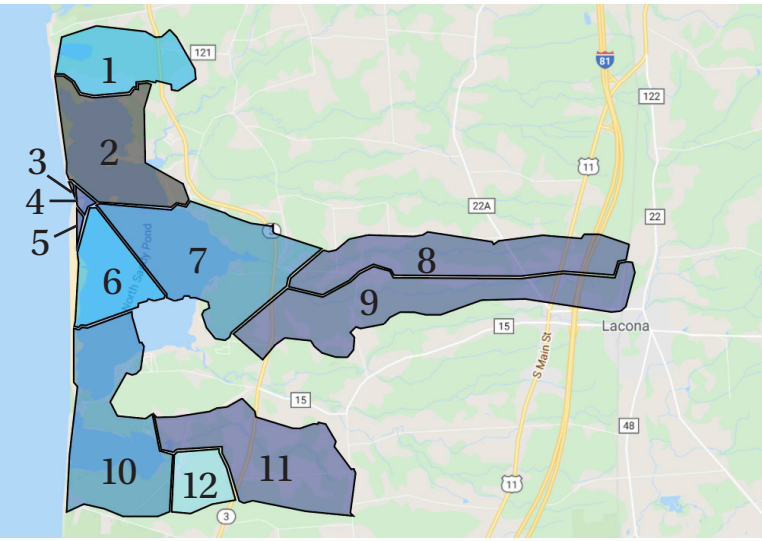


State regulated freshwater wetlands

Quarter mile buffer zone

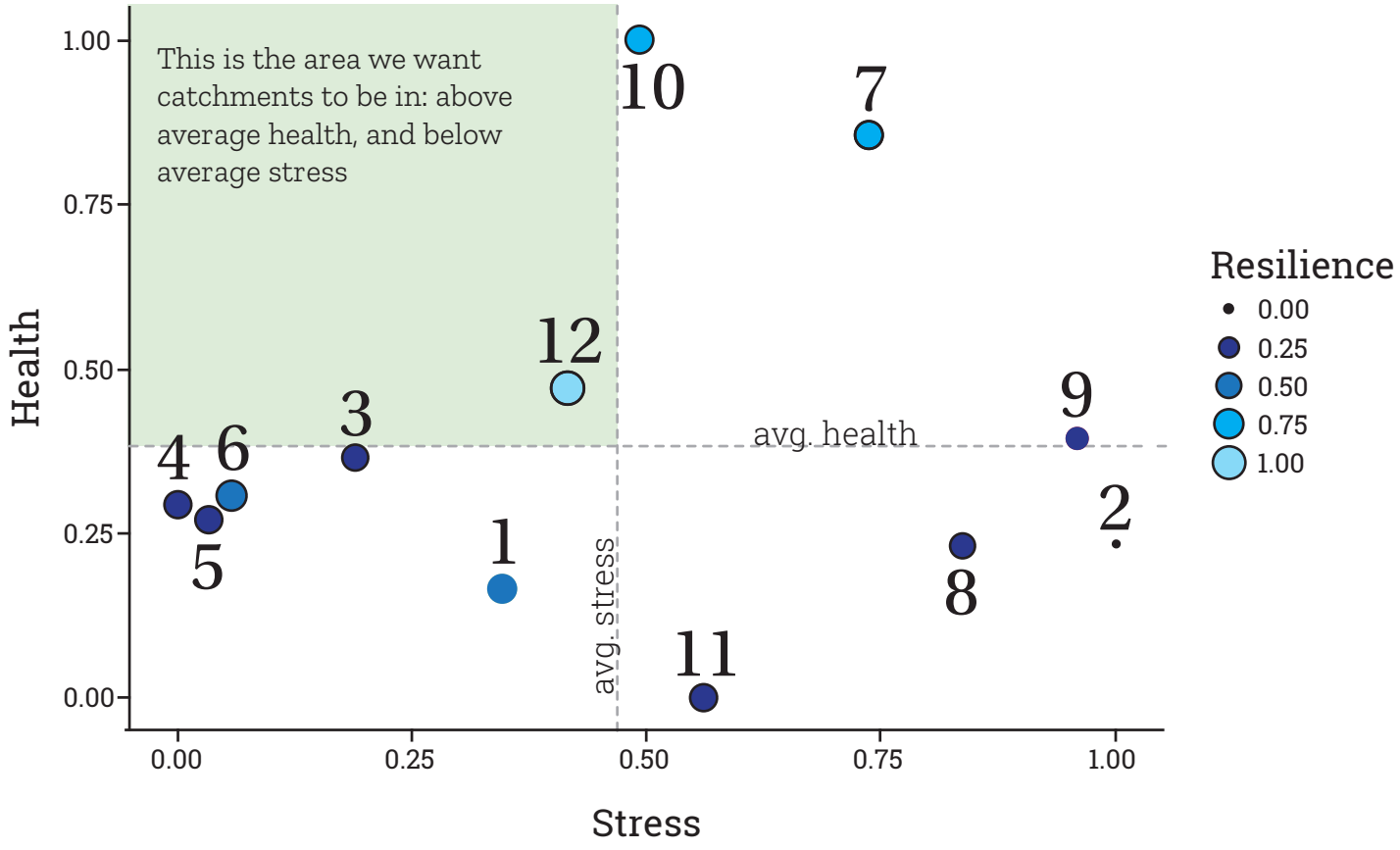
https://gisservices.dec.ny.gov/gis/erm/

Health and Stress assessment



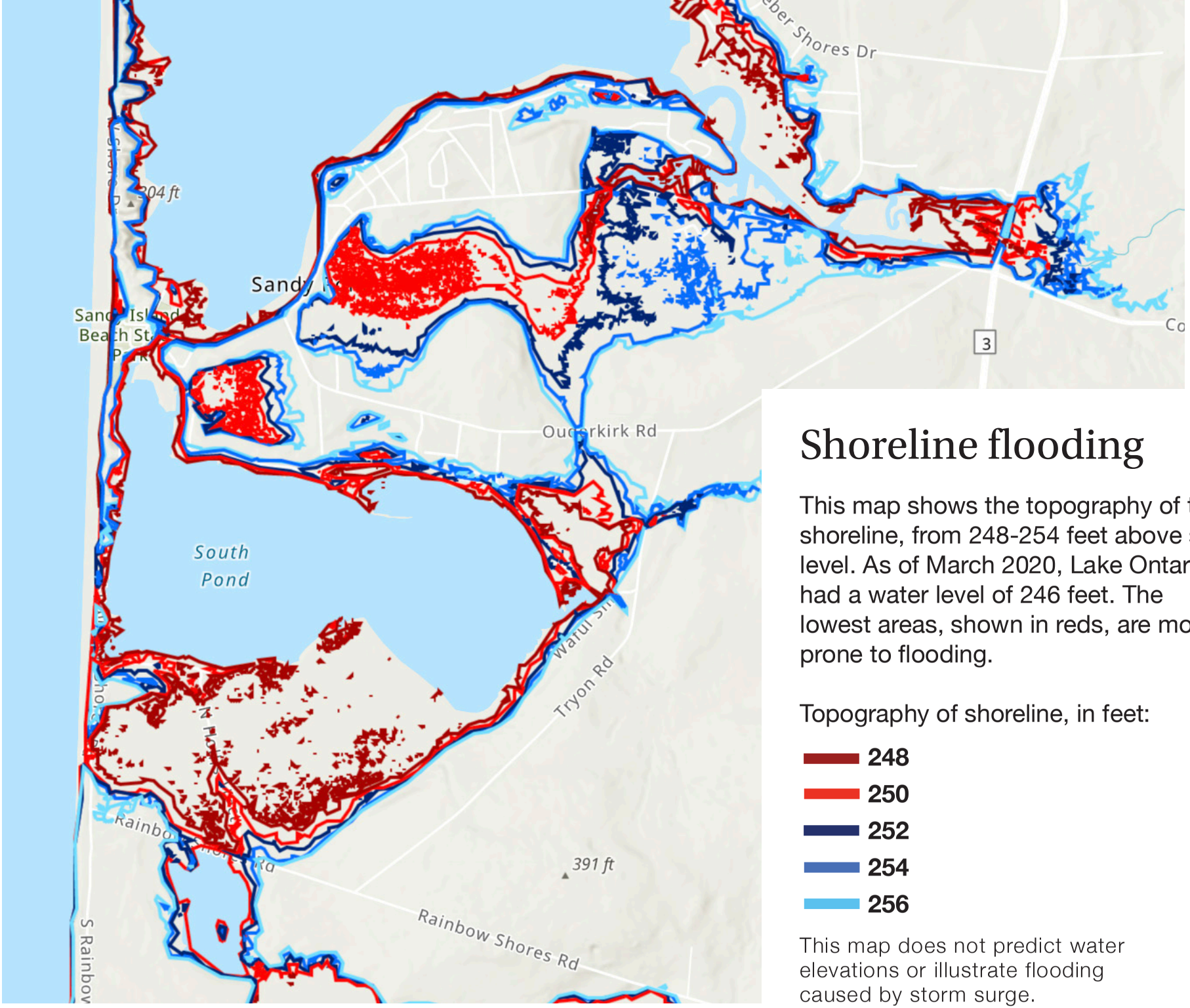
This map shows catchments, or natural drainage areas, of the North Pond watershed. The graph below it shows the health (y axis), stress (x axis) and resilience of each catchment as defined by the New York Natural Heritage Program.

Areas with high stress and low health and resillience are more vulnerable to disturbances such as flooding.



Health and **Resilience** have a maximum score of 1, with 1 representing the highest quality or most resilience. **Stress** has a maximum score of 1, with 0 being the least stressed and 1 being the most.

In this assessment, “health” and “stress” were calculated using the status of indicators such as canopy cover, ecological significance, erosion index and native fish richness. As we can see, only one catchment is in the green zone of above average health and below average stress. Most are not healthy, and half have above-average stress.



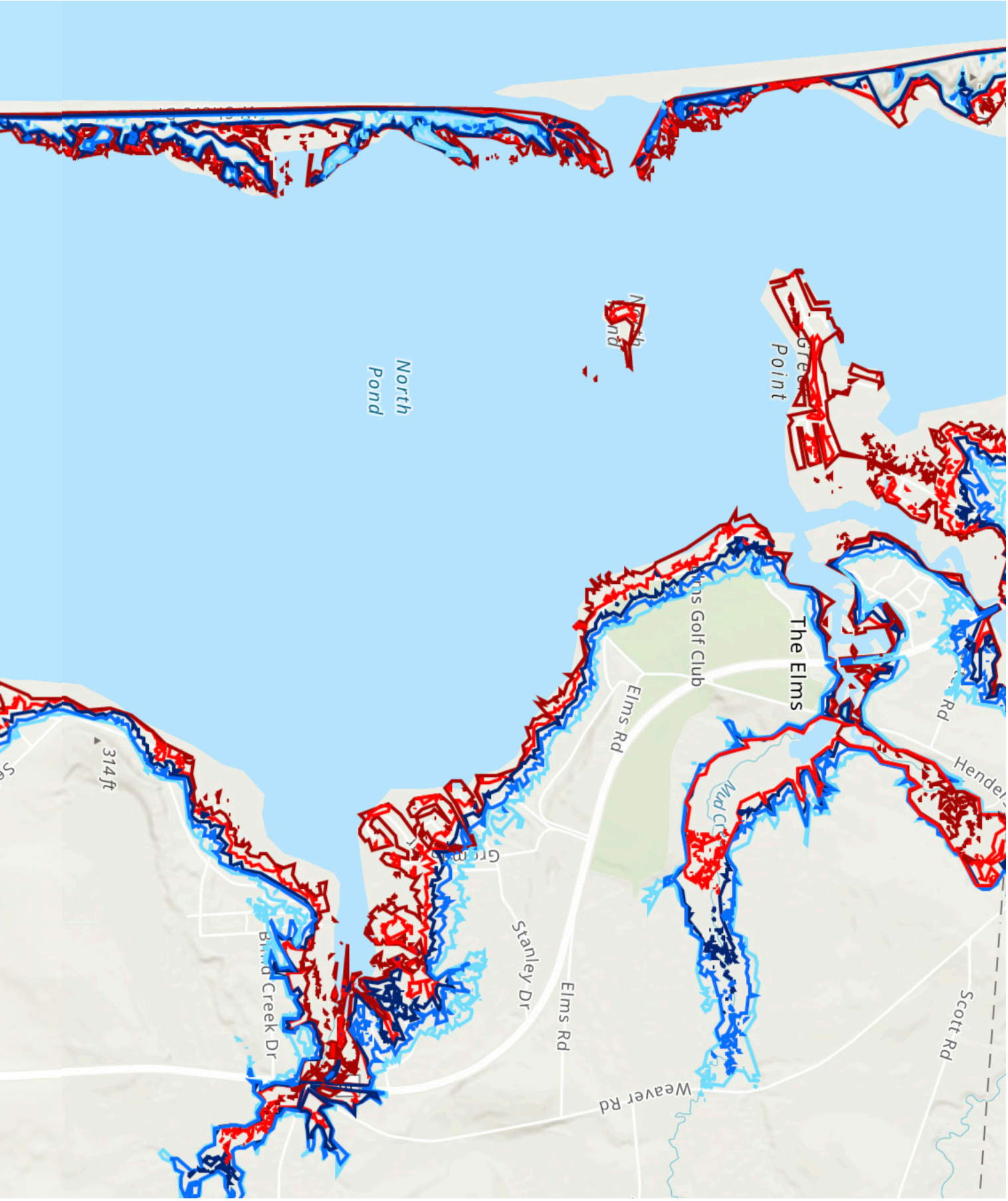
Shoreline flooding

This map shows the topography of the shoreline, from 248-254 feet above sea level. As of March 2020, Lake Ontario had a water level of 246 feet. The lowest areas, shown in reds, are most prone to flooding.

Topography of shoreline, in feet:

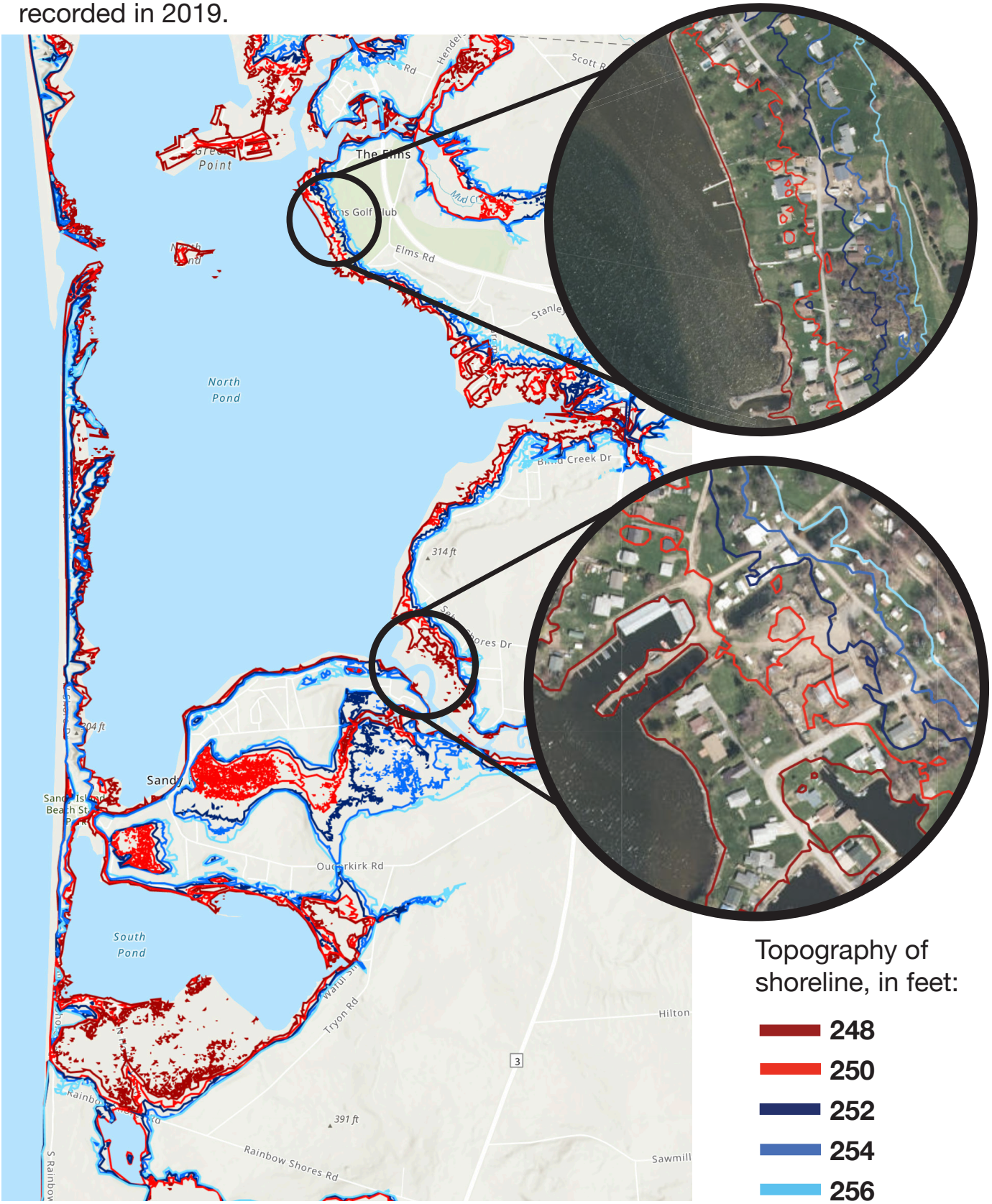
- **248**
- **250**
- **252**
- **254**
- **256**

This map does not predict water elevations or illustrate flooding caused by storm surge.


Scott Rd
Elms Rd
Weaver Rd
Stanley Dr
Elms Rd
Elms Golf Club
The Elms
Elms Rd
Mud Creek
Hender
Rd
Point
North
Pond
North
Pond
Blind Creek Dr
314 ft

Shoreline Flooding, in focus

Some areas may be highly impacted by flooding—areas to the left of the red lines will be flooded with only 2-4 feet of water level rise. Lake Ontario water levels rose above 248 feet in 1952, 1973, and 2017. The highest water level, at 249.09 feet, was recorded in 2019.



Conclusion

What is impacting the health, stress and resilience of the North and South ponds?

Threats to the Sandy Creeks Watersheds Ecoystem include[1,2,3]:

- Shoreline development for housing and recreation facilities
- Loss of wetlands and open space
- Lake Ontario shoreline erosion
- Damaged water quality from:
  - Agricultural and other nonpoint source runoff
  - Inadequate or failing household septic systems
- Lack of funds for infrastructure improvements to protect water quality

Stakeholder concerns[4,6]:

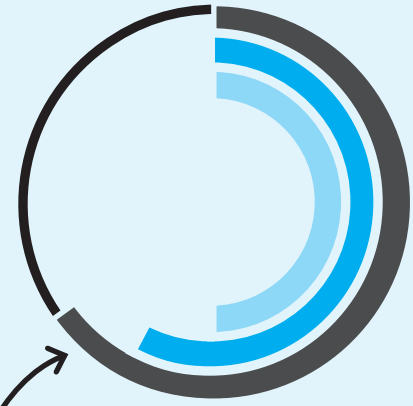
Meetings in 2007 and 2018 with Town residents and other stakeholders reinforced environmental data.

Stakeholders suggest establishing a Sandy Creek ecological heritage area to protect the beach and dunes, citing the significance of the habitat.

Stakeholders said that water quality, the fish nursery, and bird habitat are important values of the North Pond.

Stakeholders consider development pressure and lack of infrastructure funds as threats.

Town of Sandy Creek Community Survey[5]



65% of respondents want to see regulations to **address land uses that adversely impact environmental quality**

58% want to see regulations to **address degradation of environmentally sensitive areas;** and want an **inventory of failing septic systems**

50% were **concerned about lack of code enforcement** or insufficient regulation; and **encourage routine septic system inspection**

From these 2011 survey responses, some clear conclusions can be drawn. Sandy Creek has valuable natural resources, some of which the community is well aware have already been compromised. Sandy Creeks' future depends on local government policies that will accomplish specific goals and objectives identified in the community survey.

Explore more

Sub-Watershed Catchment health

1. Go to www.lab.nynhp.org
2. Click “Trees for Tribs - New York”
3. Click “Data Explorer,” near the bottom of the page
4. Select the North and South Pond area, within the “Southeastern Lake Ontario” region
5. Explore data by selecting different x axis, y axis, and point size indicators

Shoreline Flooding Maps

1. Go to www.arcgis.com
2. In the upper right corner, search “Oswego County Lake Ontario Shoreline Elevations”
3. Click on the first map, made by “countyinfo”
4. Click “Open in Map Viewer”
5. Scroll, on the map, to the Sandy Creek area
6. To change what is shown on the map (road names, tax parcels), click the middle icon on the left hand side to access “Contents” and select what you would like to see

Current Lake Ontario Water Level

1. Go to www.lre.usace.army.mil/Missions/
2. On the left side panel, click “Great Lakes Information”
3. On the left side panel, click “Water Level Forecasts”
4. Click “Weekly Great Lakes Water Levels”

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[1] Camoin Associates/Biohabitats, Inc., 2008. *Sandy Creeks Watersheds: Baseline Conditions Report*. Prepared for The Nature Conservancy & NYS Department of State.

[2] Hart, T. and G. Steadman, 2017. *North Pond Resiliency Project: A Comprehensive Analysis of Shoreline Change and Inlet Dynamics on the Eastern Shore of Lake Ontario.* Final Report. Prepared for Oswego County Soil and Water Conservation District.

[3] NYS Department of Environmental Conservation, 2008-2016. *0414010204-Lake Ontario/Little Sandy Creek Watershed*. Lake Ontario and Minor Tribs Waterbody Inventory/Priority Waterbodies List, Eastern Lake Ontario Basin HUC10 Watersheds.

[4] Ecologic, LLC, 2007. *Sandy Creeks Ecosystem-based Management Stakeholder Outreach Report*, prepared for New York State Tug Hill Commission.

[5] CNY RPDB, 2011. *Town of Sandy Creek, NY Community Survey – Summary Analysis*, prepared for Town of Sandy Creek comprehensive planning process.

[6] CNY RPDB, 2018. *North Sandy Pond Inlet – Alternatives for Management*. Summary report of consultation with stakeholders and local officials, February 1, 2018, Town Hall, Town of Sandy Creek.