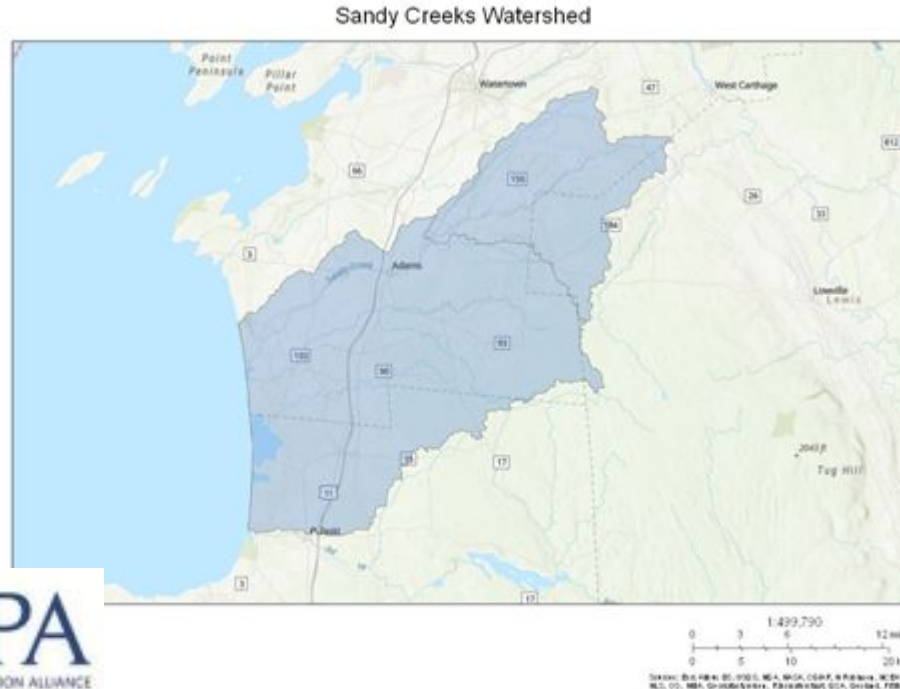


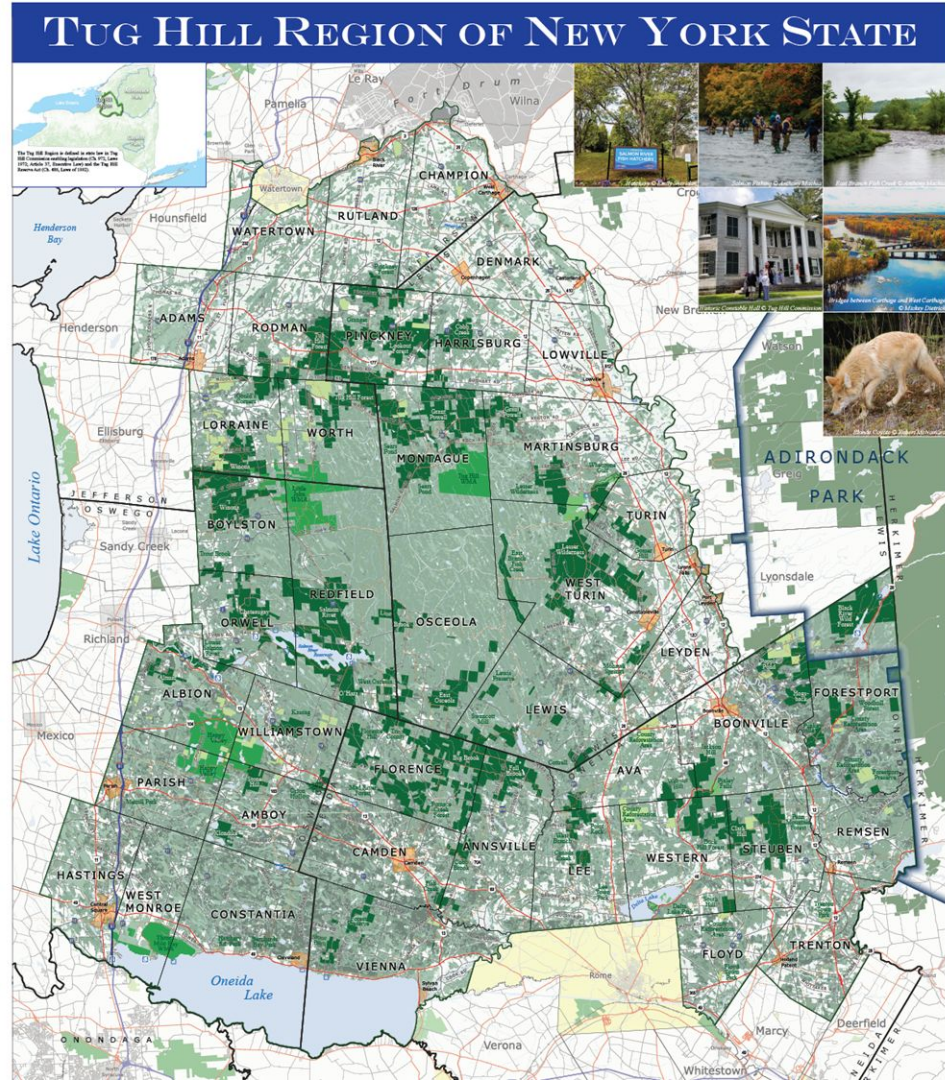
# Sandy Creeks Clean Water Planning



# About the NYS Tug Hill Commission

The NYS Tug Hill Commission is a small, non-regulatory state agency charged with “helping local governments and citizens shape the future of the Tug Hill region.” The Tug Hill region includes 41 towns and 18 villages in portions of Jefferson, Lewis, Oneida and Oswego counties.

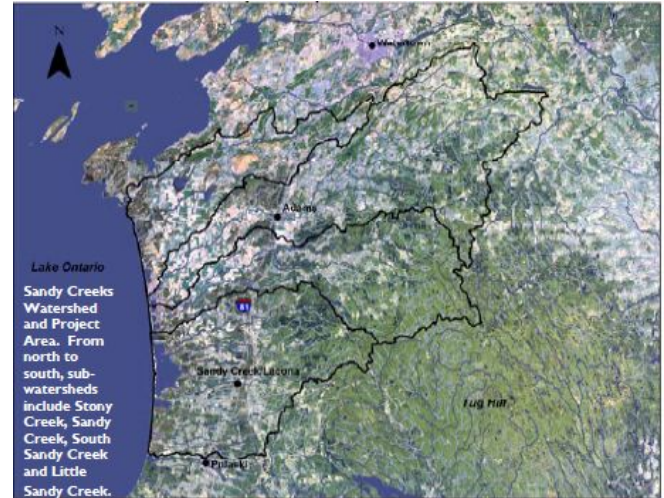
Gabriel Yerdon - Project Specialist  
Jennifer Harvill - Community and Regional Projects Director



# Sandy Creeks

## Ecosystem Based Management Initiative - 2007

- The Sandy Creeks EBM initiative was one of two demonstration areas in NYS
  - Unique ecosystems and land and water resources in the Sandy Creeks watershed
  - Barrier dune and wetland complex, lowland agriculture, and large unfragmented tracts of upland working forests
- EBM – an integrated approach to management that considers the entire ecosystem, including humans.
- Many partner agencies involved including NYSDEC, NYSDOT, Jefferson County SWCD, The Nature Conservancy, USGS, NY Sea Grant
- Implementation activities included
  - Invasive species mapping, inventory, and control
  - Forestry best management workshops
  - Agricultural riparian corridor restoration
  - USGS Tug Hill Aquifer Study
  - ATV management at Inman Gulf
- The Sandy Creeks Nine Element Plan will augment the EBM initiative and will focus mostly on water quality.



Stony Creek watershed is not included in the current Sandy Creeks 9E Plan.

# What is a Watershed

- A watershed is all of the land that water flows across or under on its way to a creek, river, lake, stream or bay.
- Water travels over farm fields, forests, suburban lawns and city streets, or it seeps into the soil and travels as groundwater.
- Watersheds are influenced by topography, and separated from each other by high points, such as hills or slopes.



NYSDEC Youtube- What is a Watershed video:

<https://www.youtube.com/watch?v=gVdq4pWUiQM>

# Clean Water Planning and the 9 Element (9E) Watershed Plan

A 9E plan is a non-regulatory clean water plan that:

- Identifies and addresses water quality concerns at the watershed scale
- Can be developed by non-agency stakeholders
- Can target waterbodies based on stakeholder interests
- Standardized framework for success to improve water quality
- Identifies Best Management Practices (BMPs) to improve water quality (WQ) in target areas
- Includes 9 Key Elements (as developed by EPA)

A regulatory plan for limiting pollutant loading to a waterway is a Total Maximum Daily Load (or TMDL)



Department of  
Environmental  
Conservation

# Nine Key Elements of a 9E Plan

- A.** Identify & quantify pollution sources in watershed
- B.** Establish pollutant load reduction targets to reach WQ goal(s)
- C.** Identify BMPs to reduce pollutants, considering landowner interests, and estimate load reduction and BMPs needed to achieve WQ goal(s)
- D.** Identify grant funding to implement BMPs identified in C
- E.** Build relationships with local stakeholders and integrate stakeholder input into plan to facilitate plan implementation
- F.** Develop BMP implementation schedule based on stakeholder input
- G.** Plan to evaluate progress on BMP implementation
- H.** Establish criteria to assess water quality improvement from BMP implementation
- I.** Develop and implement monitoring plan to collect WQ data and measure success



# Nine Element Watershed Plans in NY

## Approved 9E Plans

1. Genesee River
2. Black River
3. Suffolk County
4. Owasco Lake
5. Seneca-Keuka Lakes



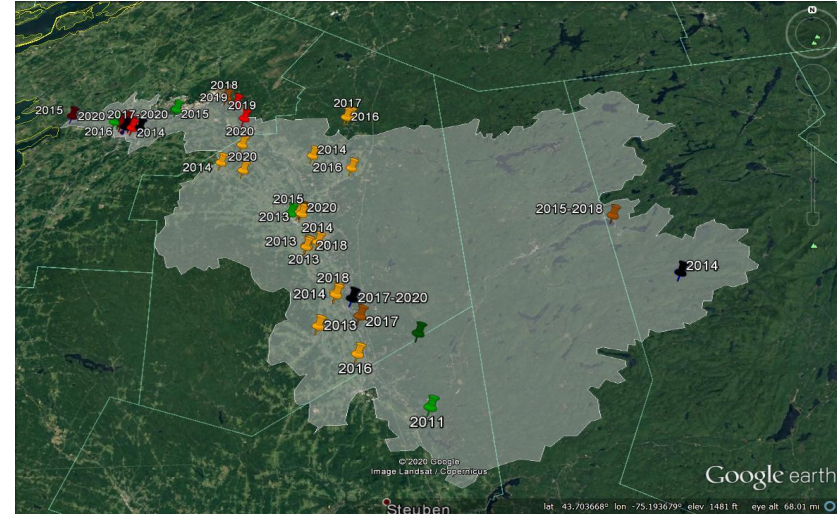
## 9E Plans Under Development

- |                     |                                                          |
|---------------------|----------------------------------------------------------|
| 1. Wappingers Creek | 6. Lake Erie Tributaries                                 |
| 2. Skaneateles Lake | 7. Nassau County                                         |
| 3. Oneida Lake      | 8. DeRuyter Lake                                         |
| 4. Canandaigua Lake | 9. Pine Brook,<br>Stephenson Brook,<br>and Burling Brook |
| 5. Hutchinson River | 10. Sandy Creeks*                                        |



# Black River 9E Watershed Management Successes

- The Black River Initiative has supported watershed management since 2010, implementing over 72 actions and leveraging over \$35 million in funding
- A 9E Plan was state approved in 2016, leading to more funding for wastewater treatment improvements, green infrastructure, implementation of agricultural best management practices, and restoration projects.



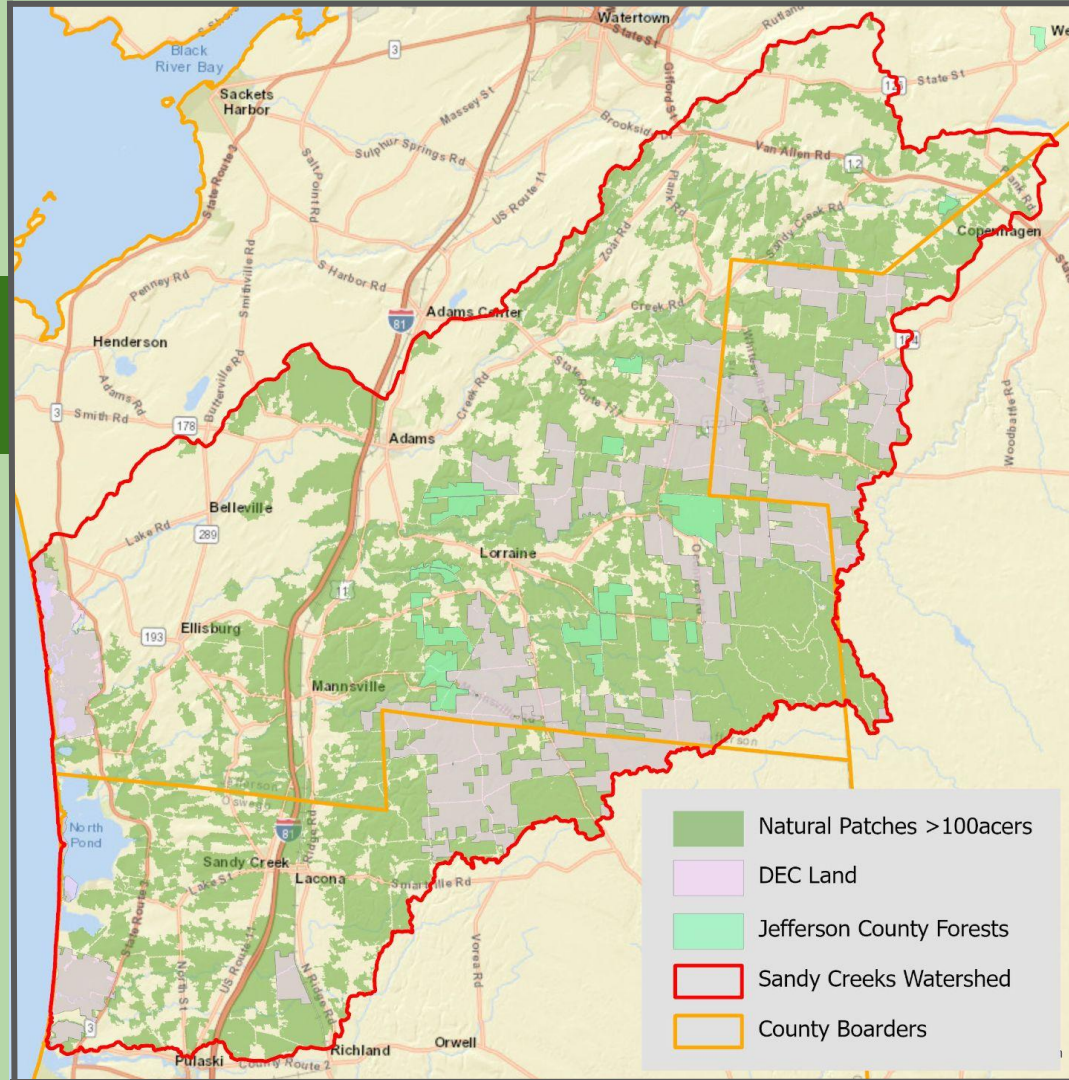
Projects implemented include remediation (red), wastewater treatment improvements (brown), Ag BMPs (orange), Restoration and green infrastructure (green), and recreation access (black). From the Black River Initiative Progress Report 2010-2020.



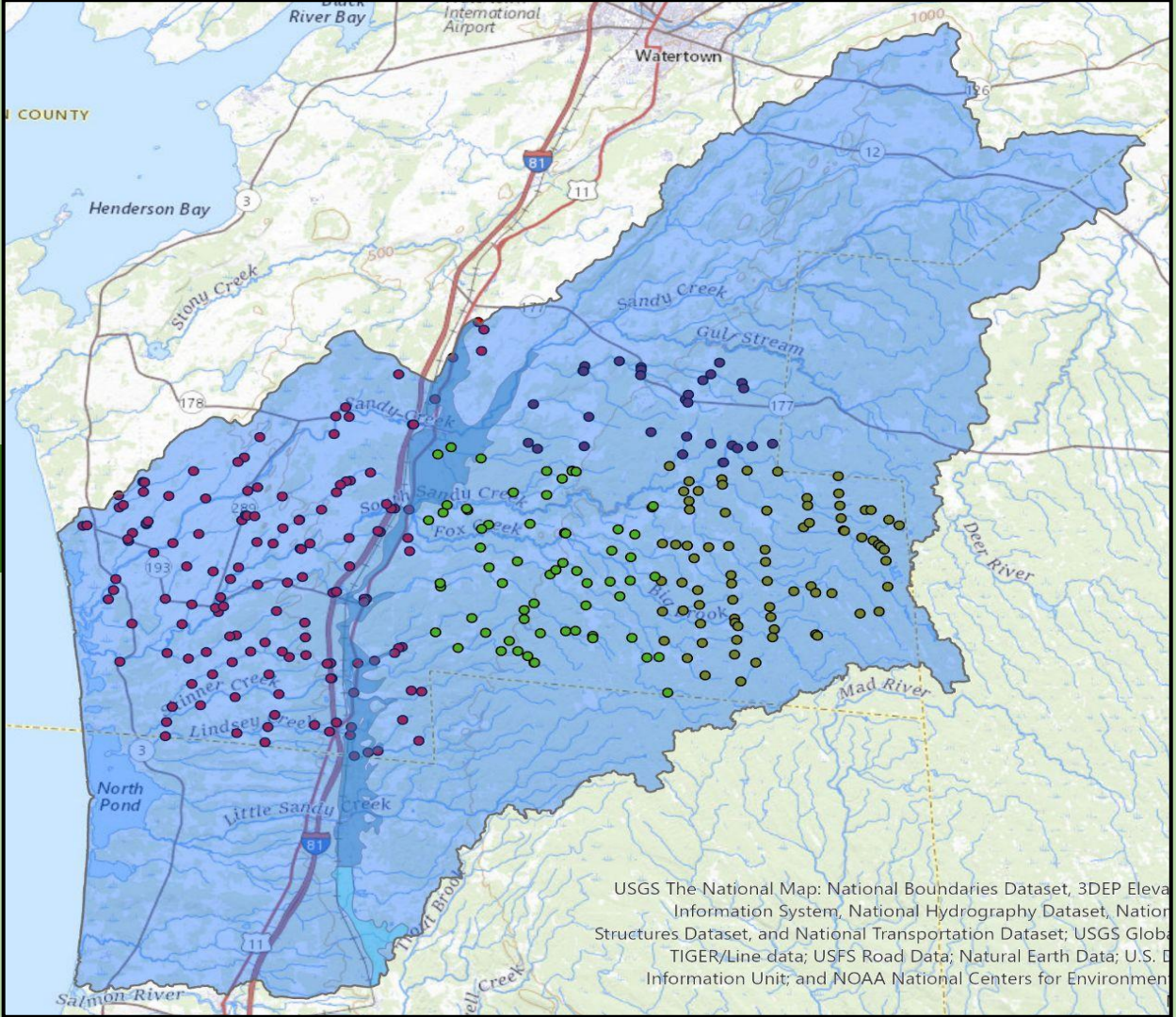
Department of  
Environmental  
Conservation

# Current Water Quality Data

## Natural Land Cover >100 Acres (2016 National Heritage Program Data)



## Completed Culvert Assessments to Date





Clogged Inlet



Failed Bank  
"support"

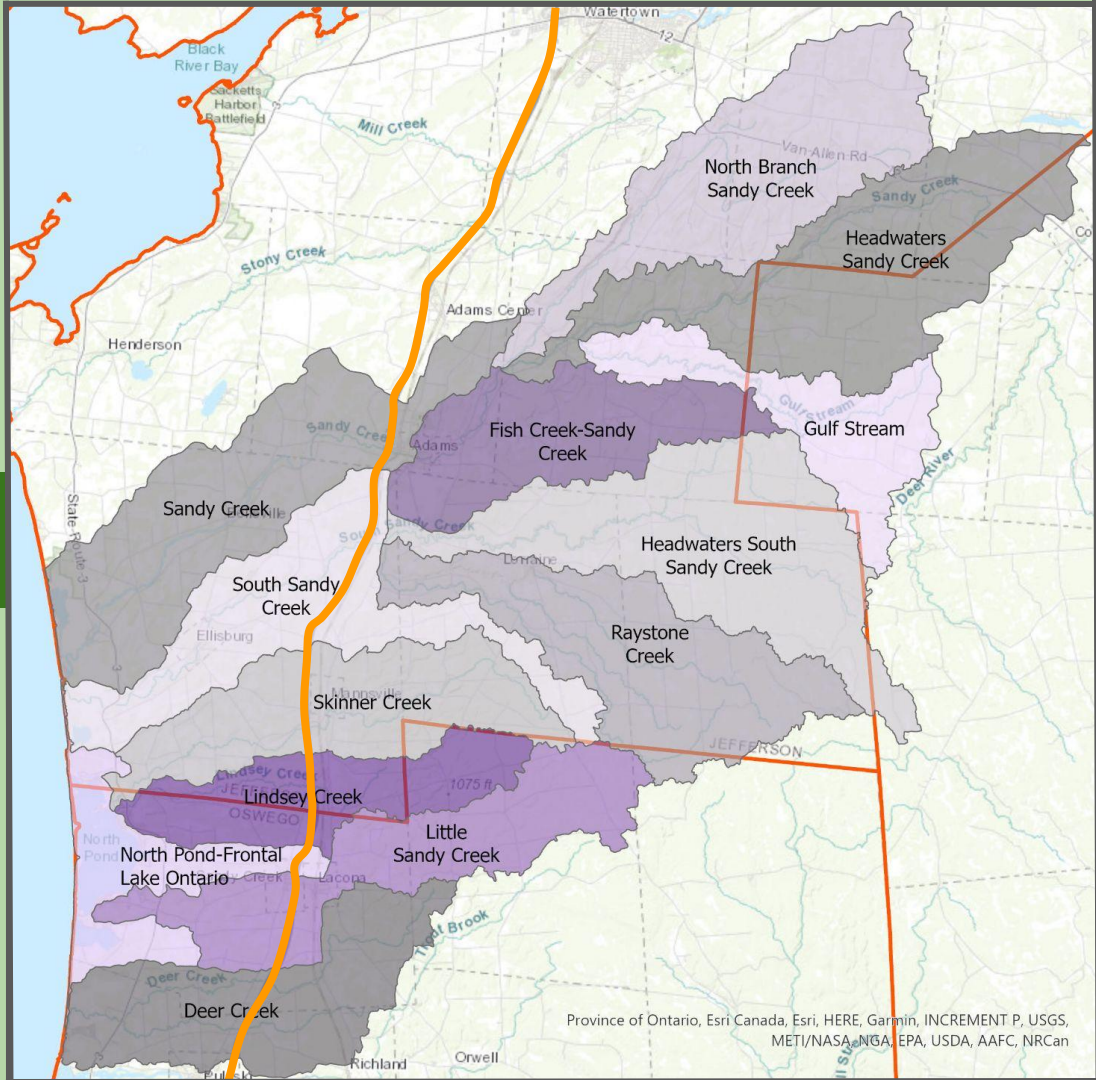


Poor Water  
Quality

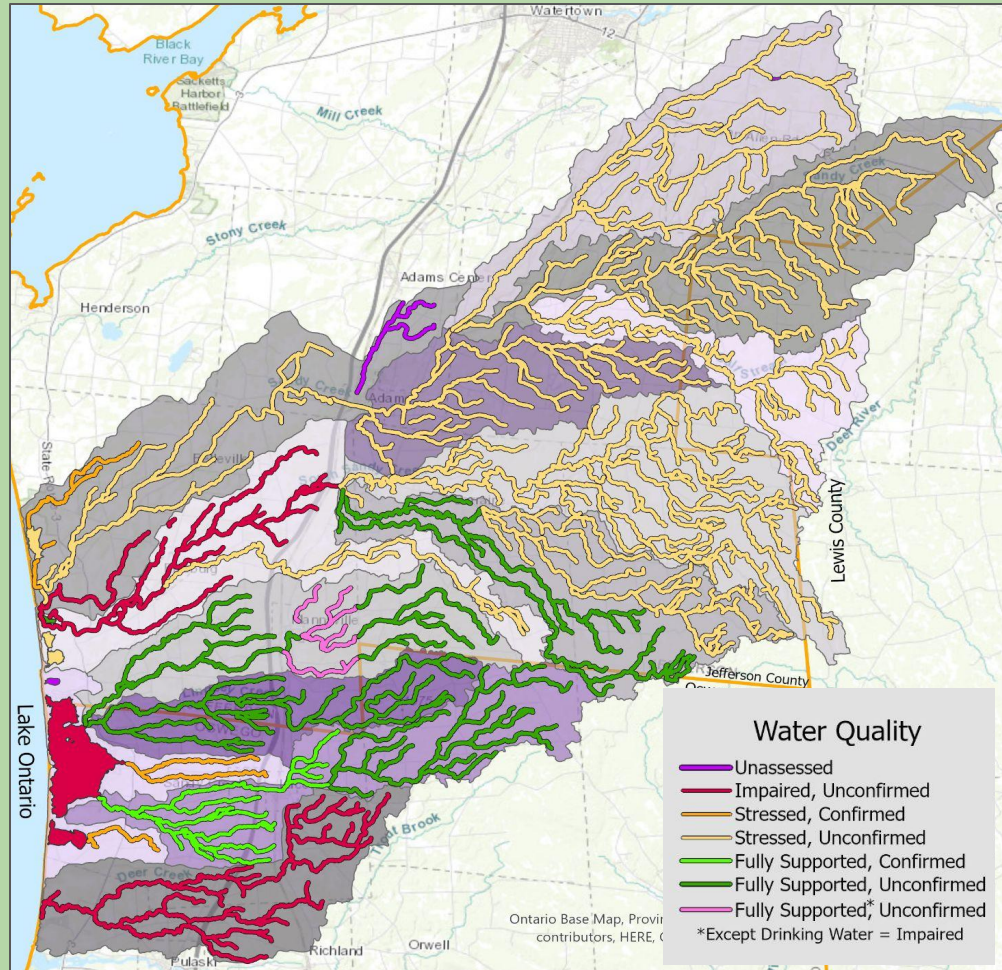


Erosion

# Sandy Creeks Subwatersheds



# DEC WQ Assessments:



## DEC Definitions:

**Fully Supported-** Data or information indicate no impact to Best Use(s)

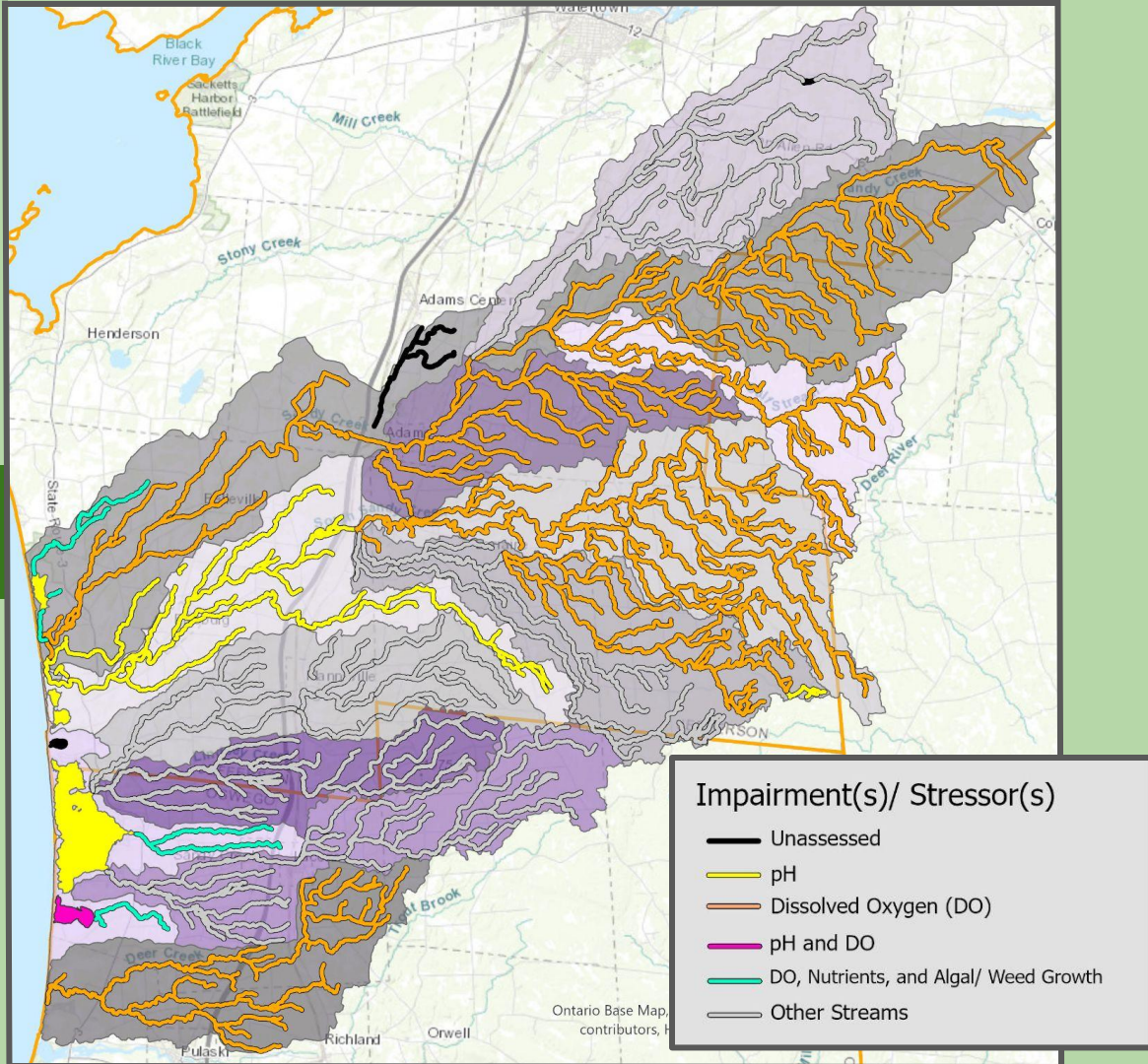
**Stressed-** Data or information indicate a potential impact to the Best Use(s)

**Impaired-** Data or information indicate failure to support a WQS

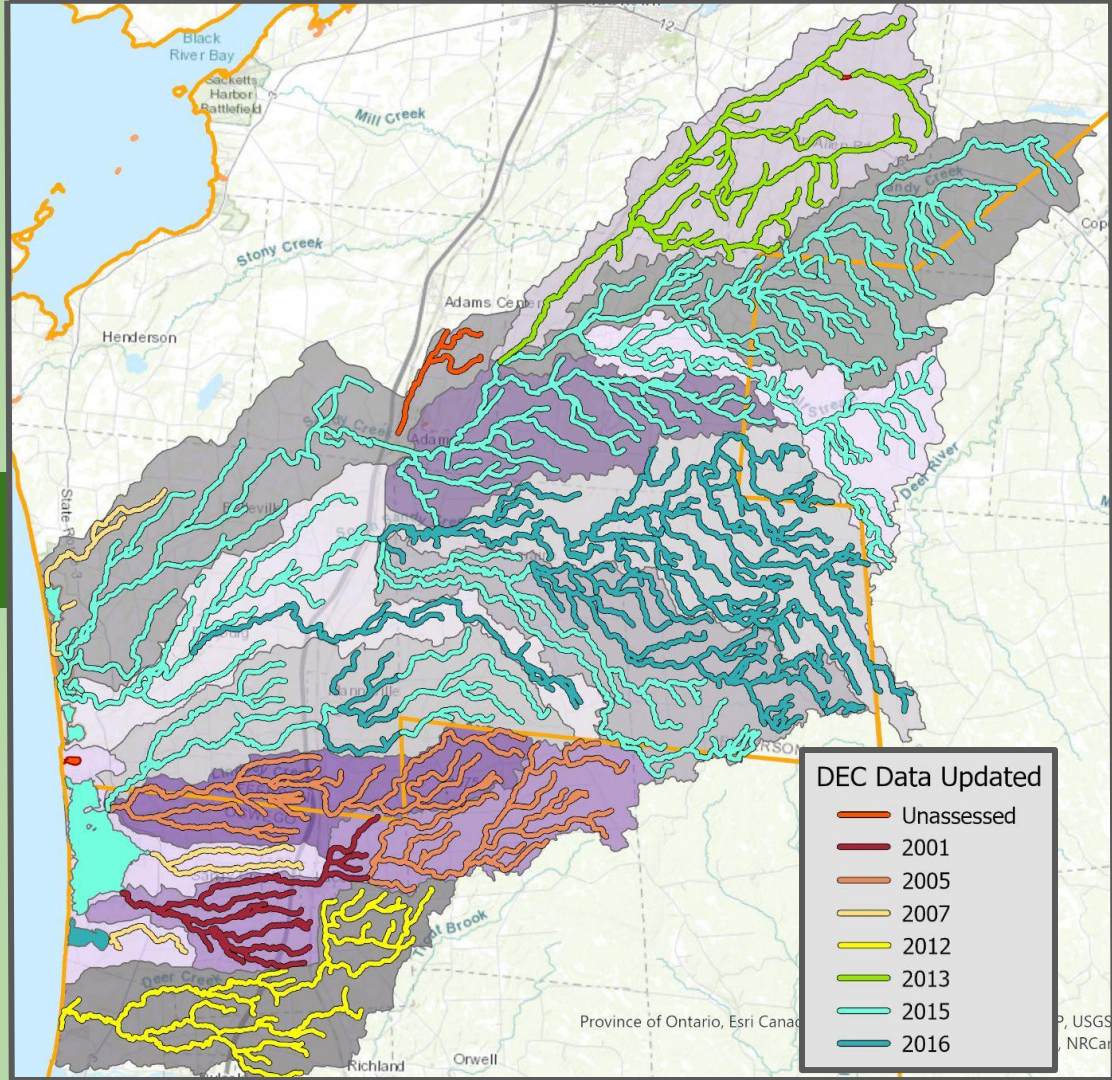
- **Confirmed Impairments-** Core Indicator presence, 2 years of WQ data, and have met minimum sample number requirements
- **Unconfirmed Impairments-** Core or Supplemental Indicator presence; lacking 2 years of WQ data or have failed to meet minimum sampling requirements

**Unassessed-** Water quality data is unavailable or does not meet water quality data requirements

## Documented Impairments of Interest



## Year of Last Available DEC Assessment



# Sandy Creeks - Monitoring Data and Plan

## Purpose of monitoring

- *Nutrients and bacteria* - impairment, areas for improvement
  - Phosphorus & nitrogen - primary nutrients for ecosystem productivity (algae, HABs, benthic *Cladophora*)
- Streams and receiving water bodies (i.e., North Sandy Pond)
- Modeling



North Sandy Pond - September 2022  
Photo credit: Ron Fisher

# Sandy Creeks - Monitoring Data and Plan

## Existing tributary data - NYSDEC (2012-2020)

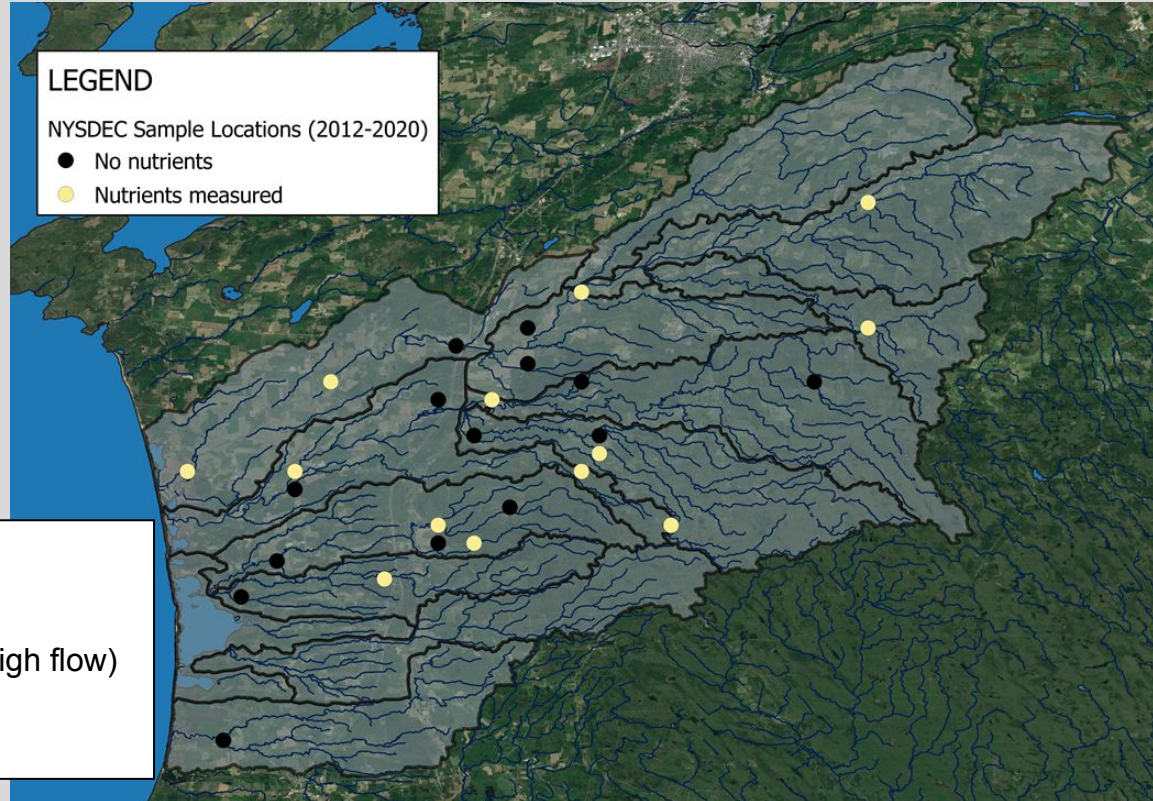
Most sites w/out nutrient  
data

*When measured, majority 1  
day in a year*

### **9EP:**

- **Geographically not representative**
- **Temporally not resolute** (wet weather, high flow)

(although still useful!)

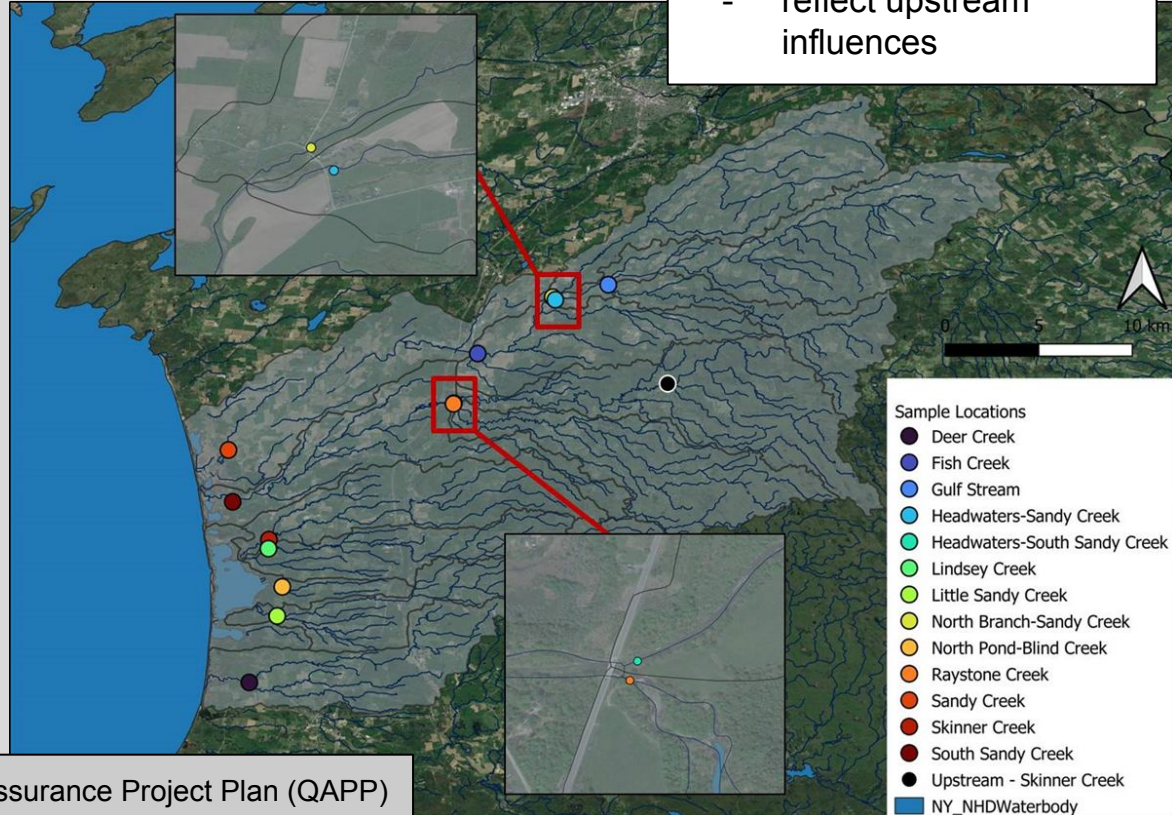


# Sandy Creeks - Monitoring Data and Plan

## Planned monitoring:

- 13 sub-watersheds
- Sampling 2x/month for 12 months
- Nutrients
  - TP, TDP, SRP
  - TN, NO<sub>x</sub>, T-NH<sub>3</sub>
- Total suspended solids
- Fecal coliform (bacteria)
- Water velocity/flow
- Temperature, pH, dissolved oxygen (DO), specific conductance, turbidity

Sample locations at terminal point of sub-watersheds  
- reflect upstream influences



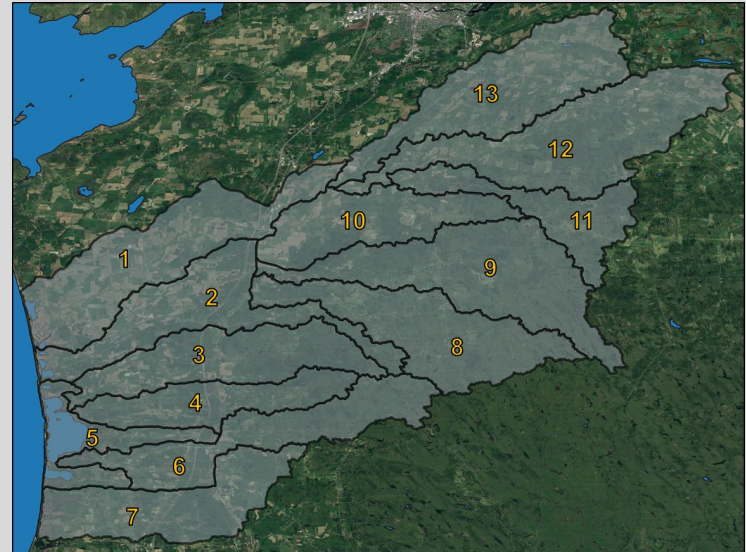
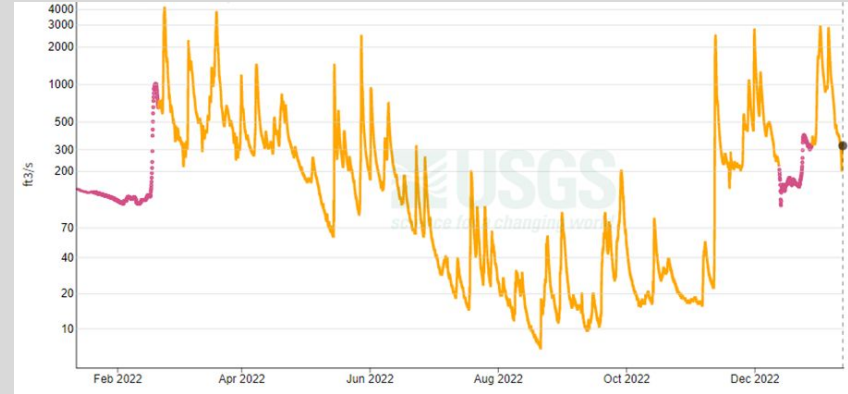
# Watershed Modeling

- Land cover
- Weather  
(precipitation/temperature)
- Nutrient concentrations and loads

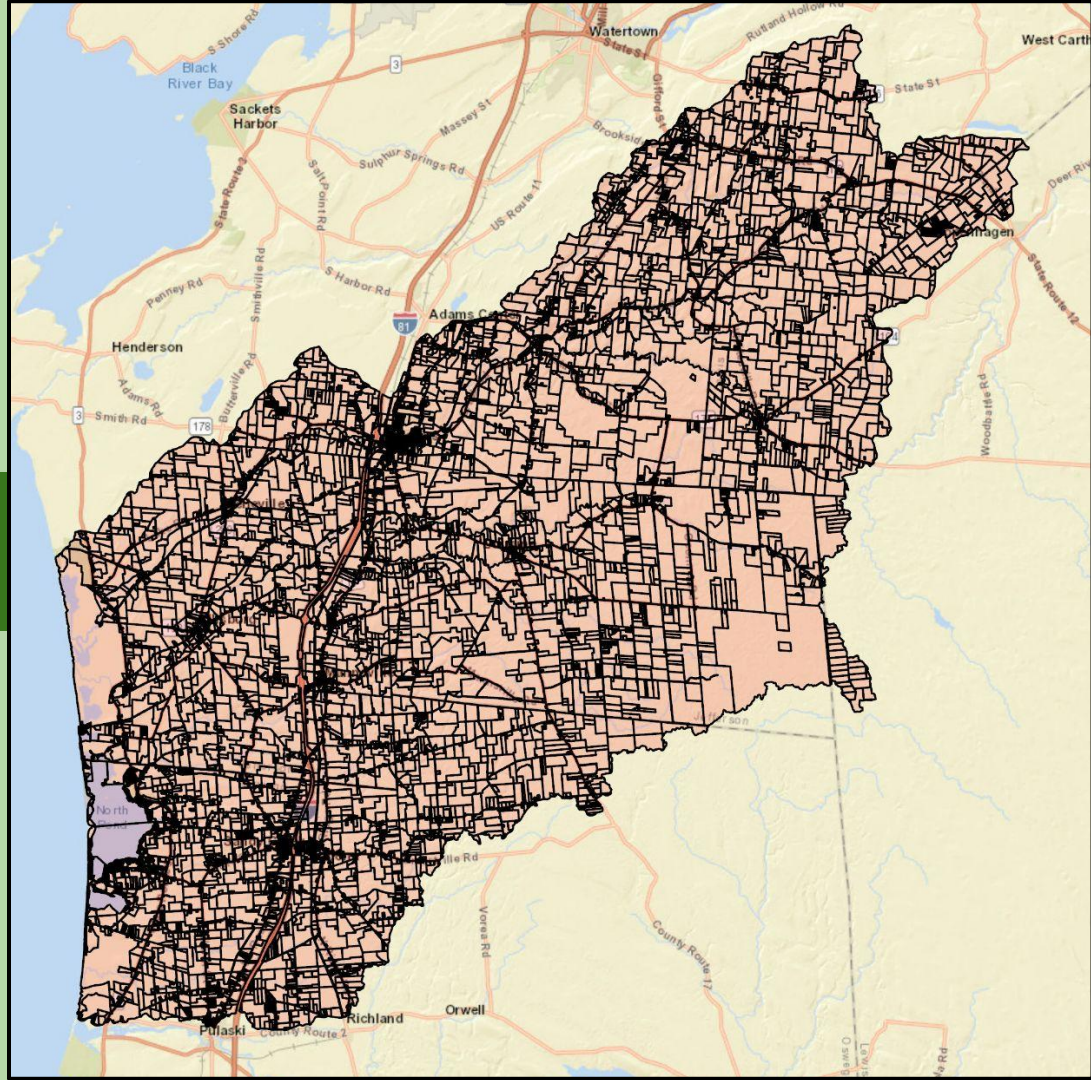
## Watershed model output for each sub-watershed (13)

- Compare (relative) contribution of nutrients, bacteria, sediment
- Identify priority areas and potential actions for 9EP

Sandy Creek USGS gage - Jan-Dec, 2022

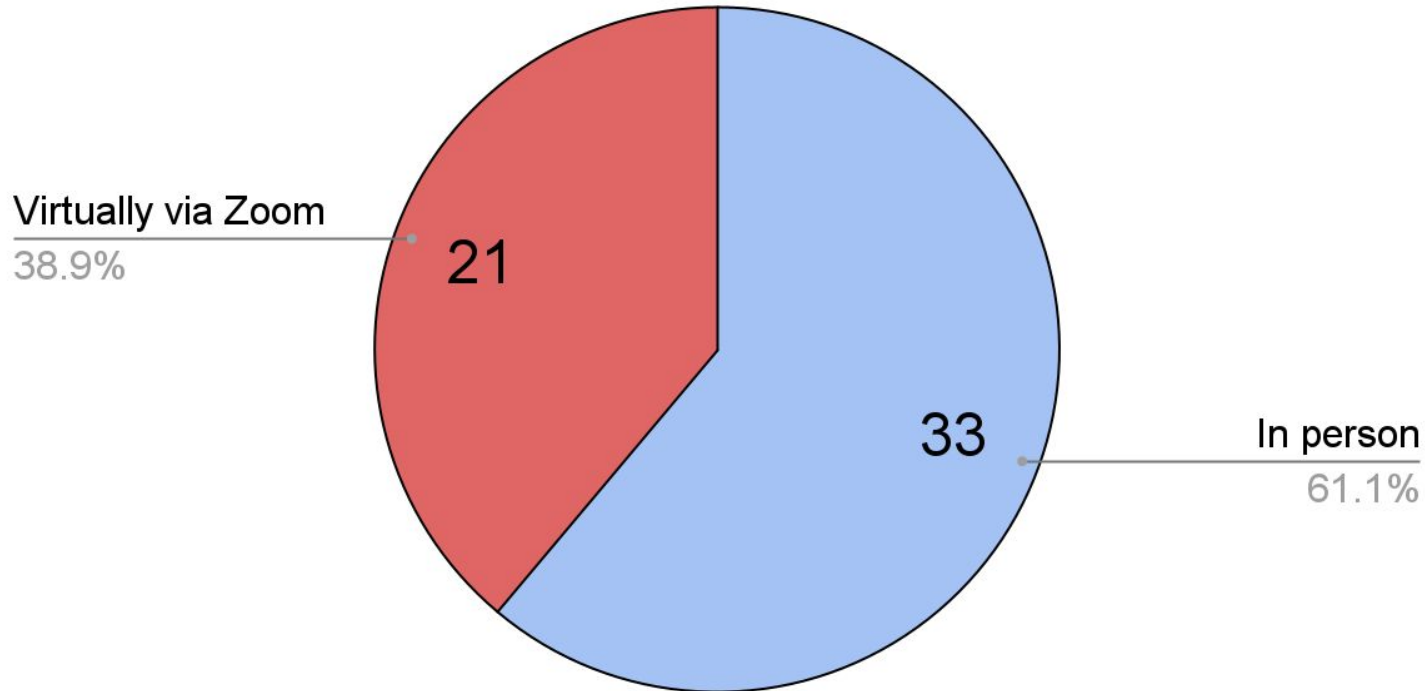


## Sandy Creeks Watershed Parcels

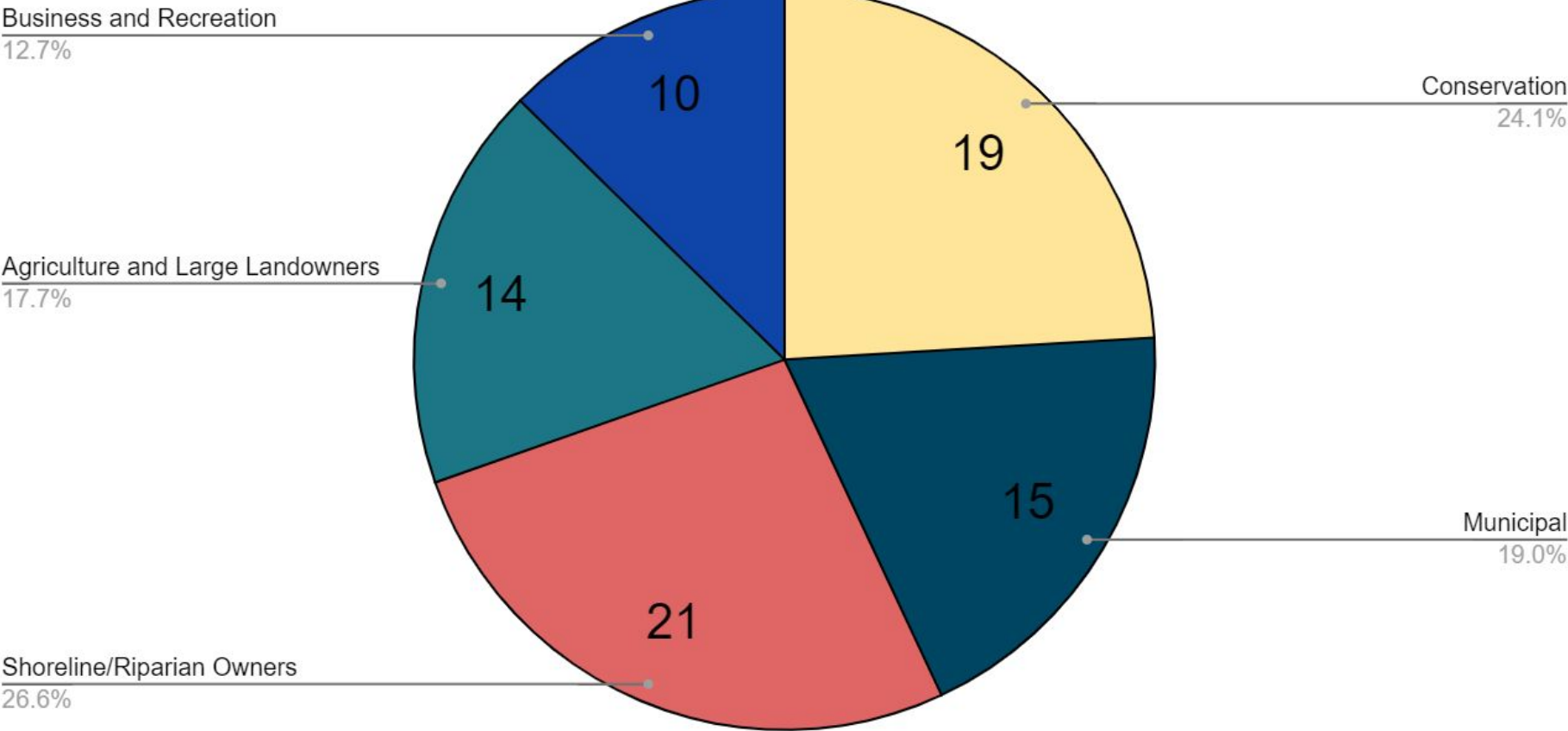


# Sandy Creeks Stakeholder Survey Results

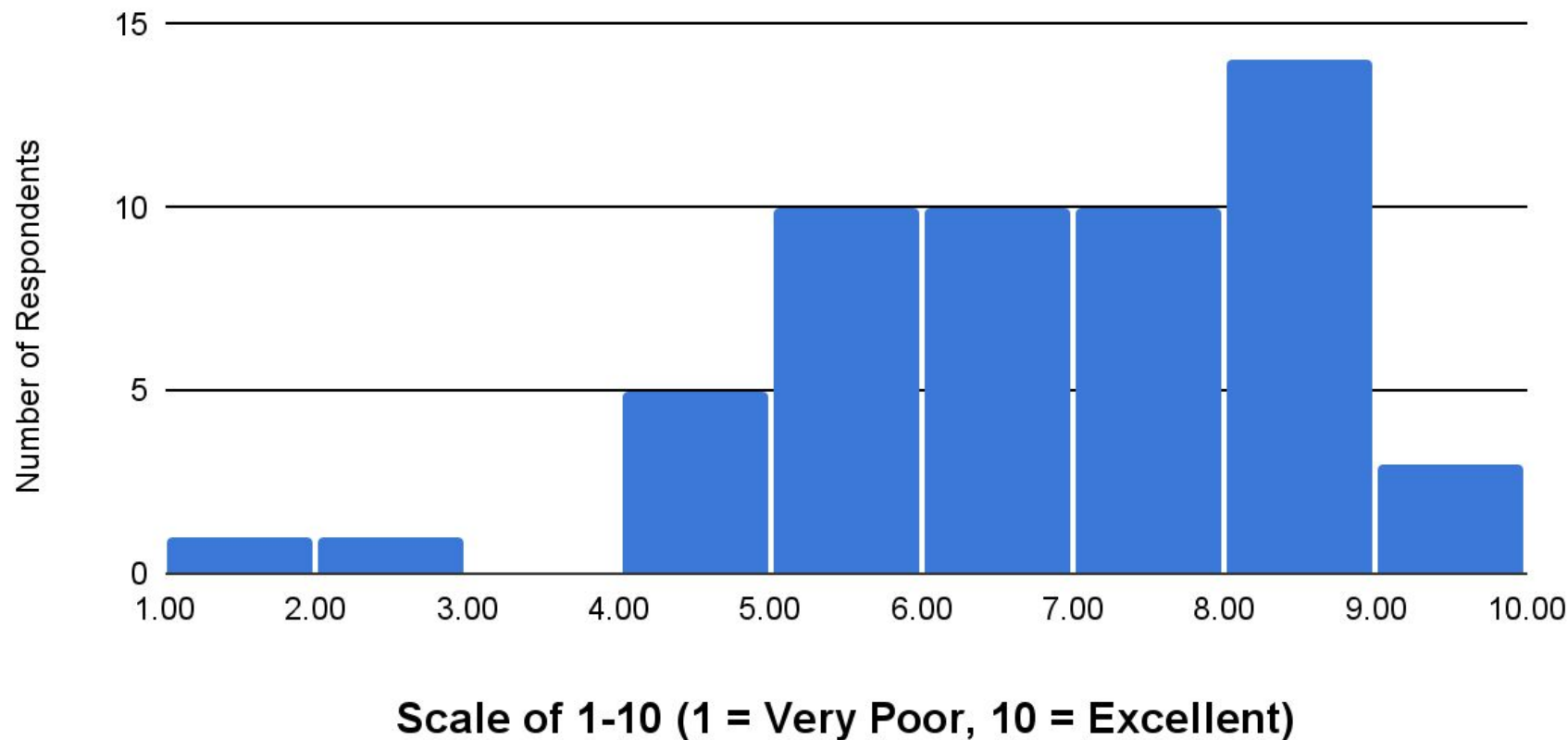
**Will you be attending the initial stakeholder meeting in person or virtually?**



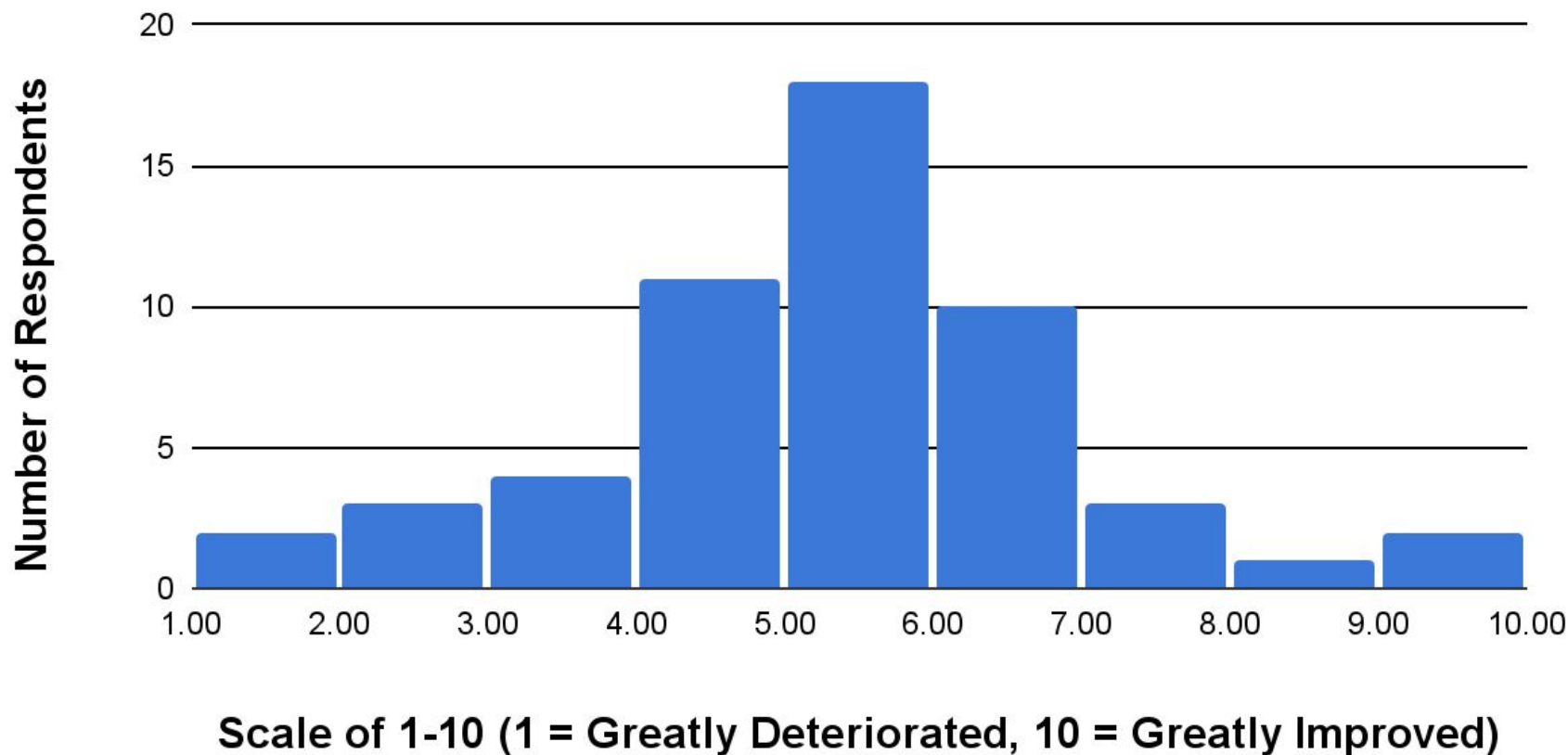
# Focus Group Interest (can choose multiple)



# How would you rate overall water quality in the Sandy Creeks Watershed?

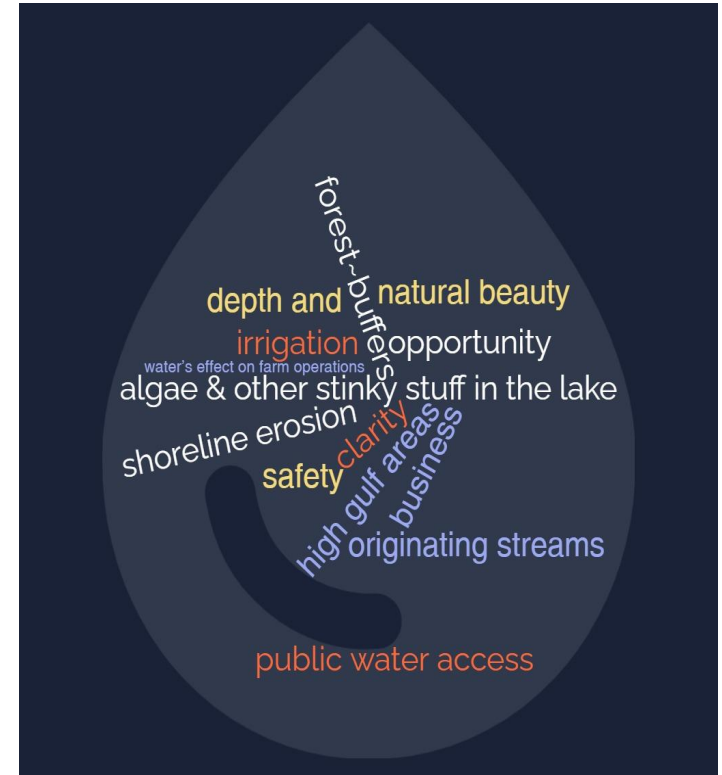


## How has water quality changed in the watershed in the past 15 years?



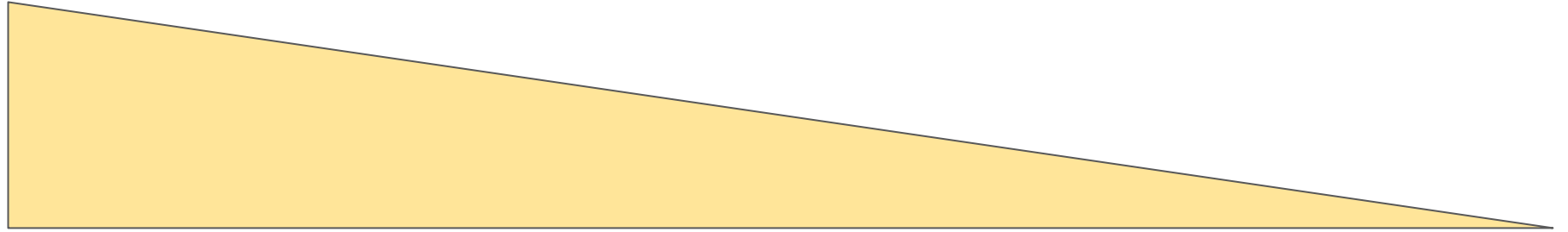
# What attributes of the Sandy Creeks Watershed are most important and of greatest value to you?

|                                                       |    |
|-------------------------------------------------------|----|
| Clean water / Water quality                           | 28 |
| Plant and animal habitat / Ecosystem health           | 9  |
| Recreation + Tourism                                  | 8  |
| Lake Ontario shoreline (water, dunes, and resiliency) | 5  |
| Healthy fisheries                                     | 4  |
| Clean well / drinking water                           | 4  |
| Not sure                                              | 4  |
| Soil restoration / creek bank stabilization / lands   | 3  |
| Sandy Pond                                            | 3  |
| Sustainable agriculture                               | 2  |
| Water level                                           | 2  |



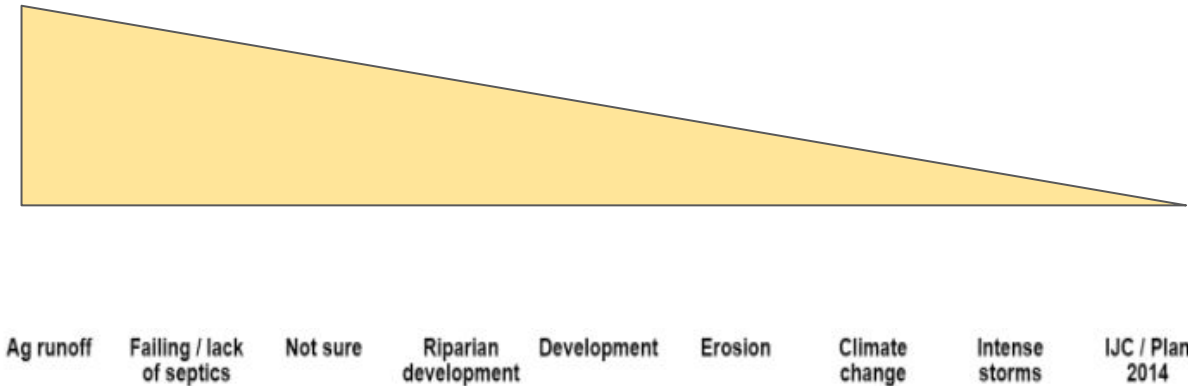
Responses received only once

## Where is additional monitoring needed to help us improve our understanding of Sandy Creeks water quality issues?



Not Sure  
Where manure in spread  
Sandy Pond  
Agricultural areas  
Entire Watershed  
Septic systems  
Riparian Development  
Invasive species  
Point source areas  
Issue Areas  
Montario Point  
Where streams meet SP  
Natural Springs

**In your experience, what changes to land use or water use have affected water quality in the Sandy Creeks watershed?**

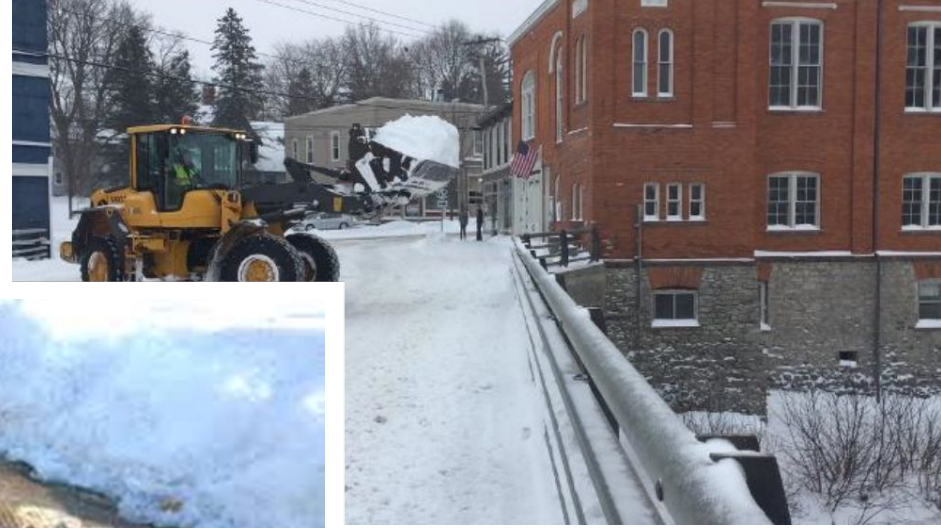


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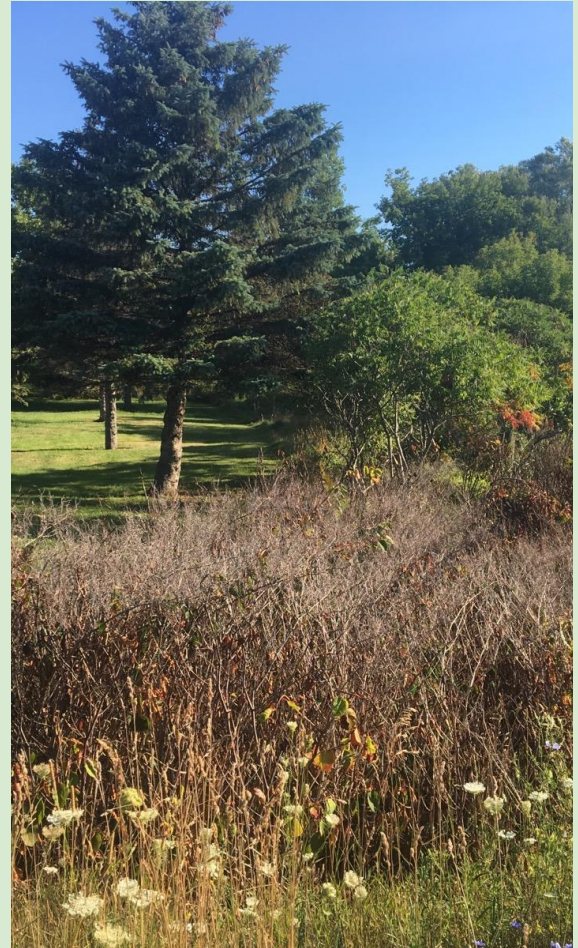




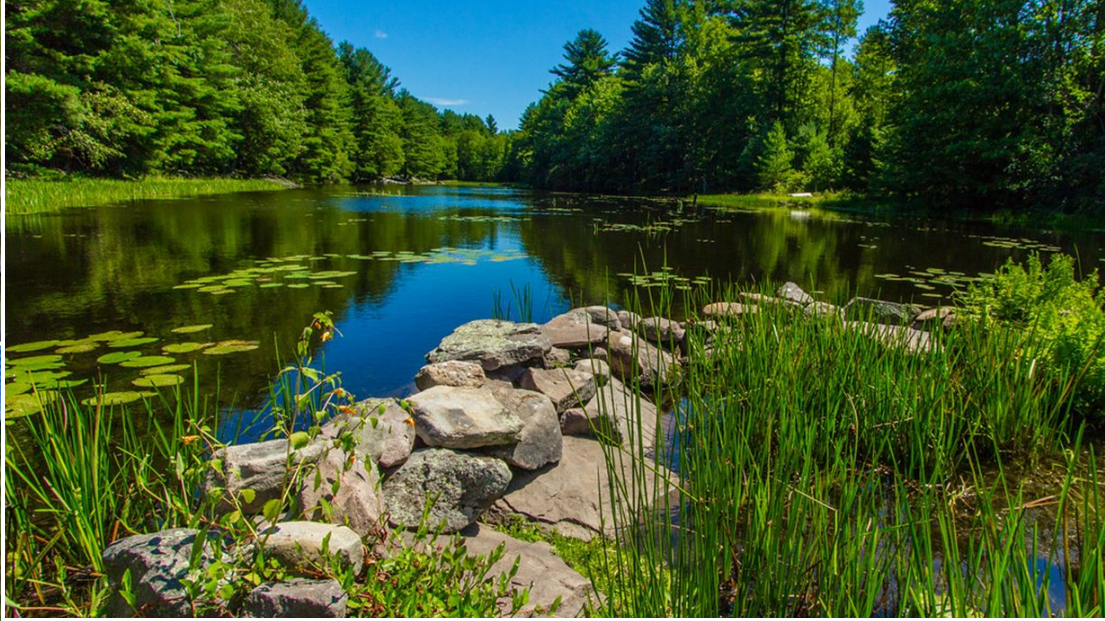


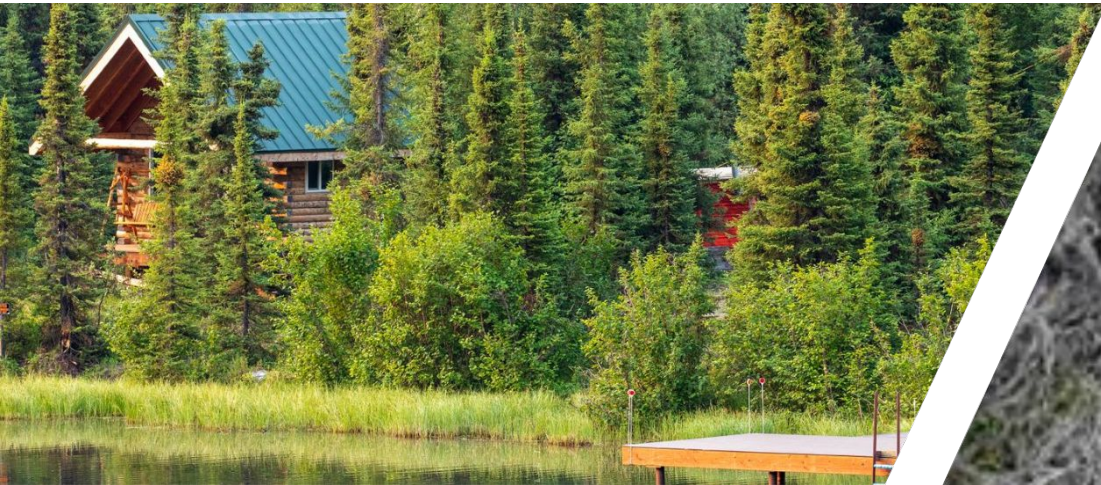
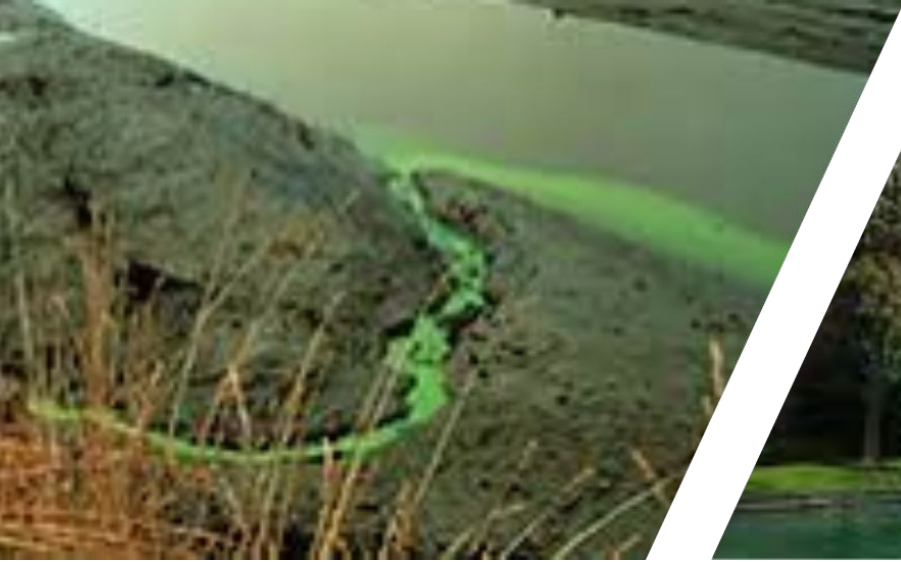














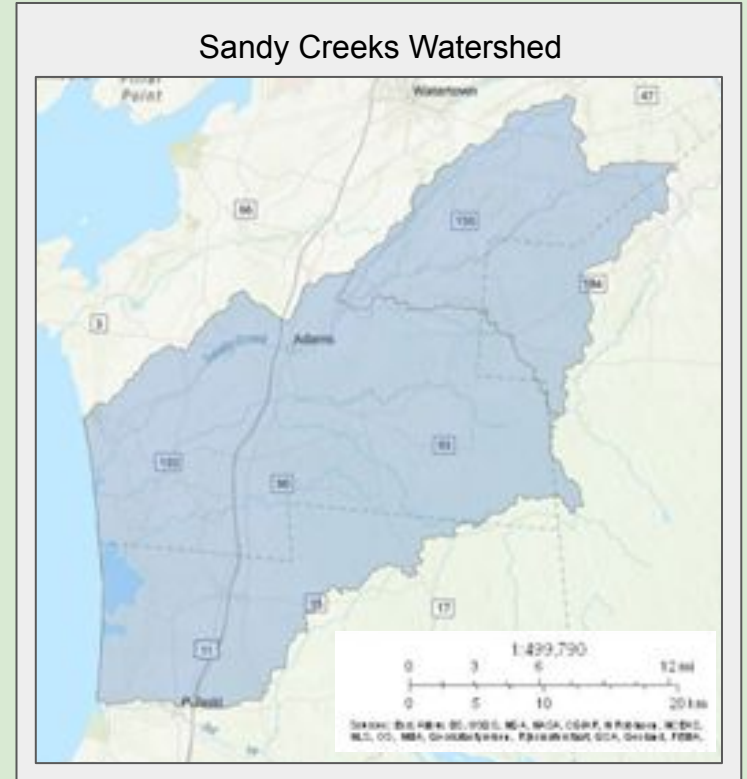
# Watershed Map Activity

What to note on the map:

- Where do you think there are water quality issues?
- Where has water quality deteriorated over time?
- Are there places that have good water quality?
- Have you seen positive or negative changes over time? Where?

Anything else?

<https://arcg.is/0LPX5W0>



# Next Steps for the Sandy Creeks 9E Plan

- Jefferson, Oswego, and Lewis SWCD staff working with Upstate Freshwater Institute, Tug Hill Commission, and other partners to develop plan, and coordinate with DEC for approval
- Identify additional water quality monitoring (with quality assurance approval) needed to support development of the plan and watershed model
- Focus group meetings for further discussion of issues and needs on **January 31st from 11am to 3pm at the Sandy Creek Town Hall** as follows:
  - 11am - Conservation
  - 12pm - Business and Recreation
  - 1pm - Shoreline and Riparian Landowners
  - 2pm - Municipal Leaders
  - 3pm - Agricultural landowners
- Virtual public meeting on **2/16** to summarize focus group engagement, share results of this meeting and finalize plans.

