Tompkins County
Water Resources Council
July 15, 2024

# Flood Watch NY:
## Documenting Local Floods through Community Science

Sea Grant
NEW YORK

NEW YORK STATE
WATER RESOURCES
INSTITUTE

# New York Sea Grant

Jess Kuonen

Hudson Estuary Resilience Specialist

Cornell University

The State University of New York

NYSG office locations and Hudson River Estuary Watershed in blue

# MyCoast NY Outreach Team

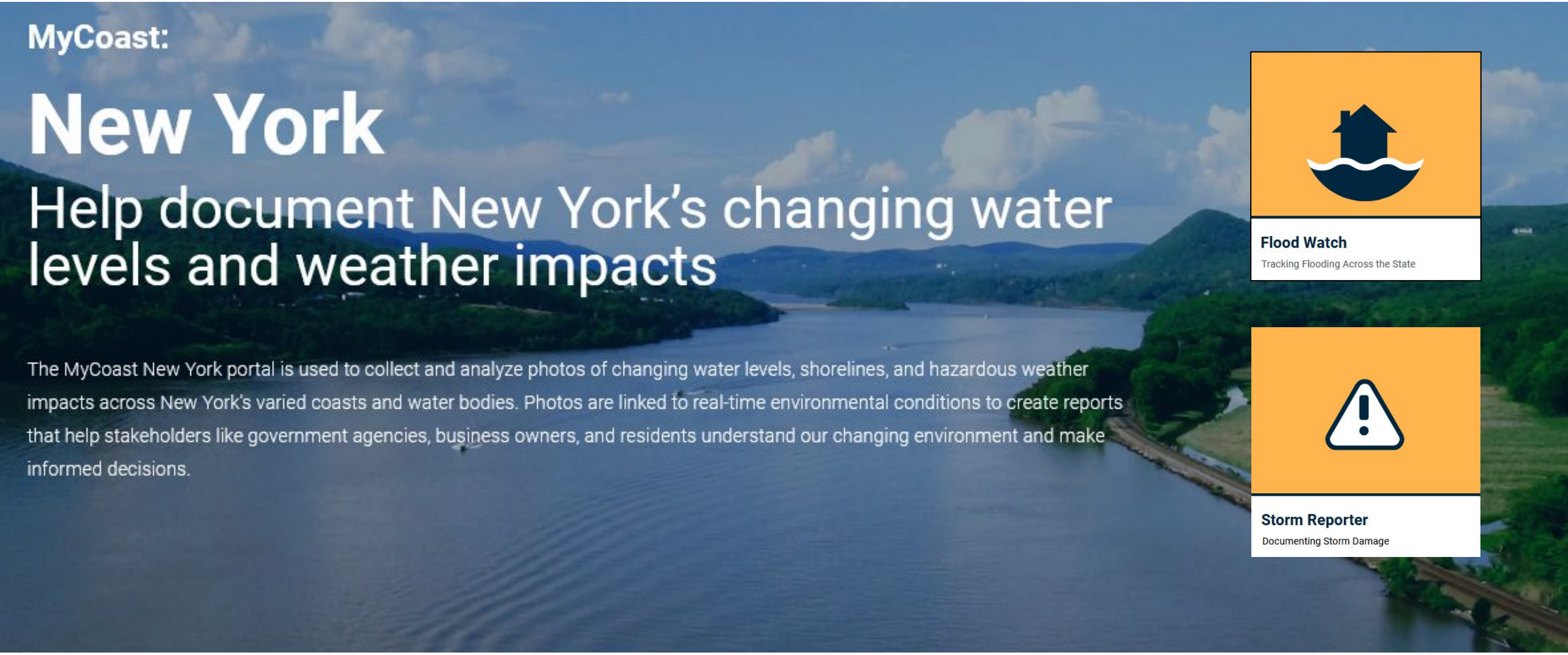
New York Sea Grant

- Jess Kuonen, *Estuary Resilience Specialist* - **Hudson River Estuary**
- Kathleen Fallon, *Coastal Processes Specialist* - **Long Island**
- Hannah Eisler Burnett, *Coastal Resilience Specialist* - **Jamaica Bay/NYC**
- Lilli Genovesi, *Outreach Coordinator* - **Long Island Sound (NYC/Westchester)**

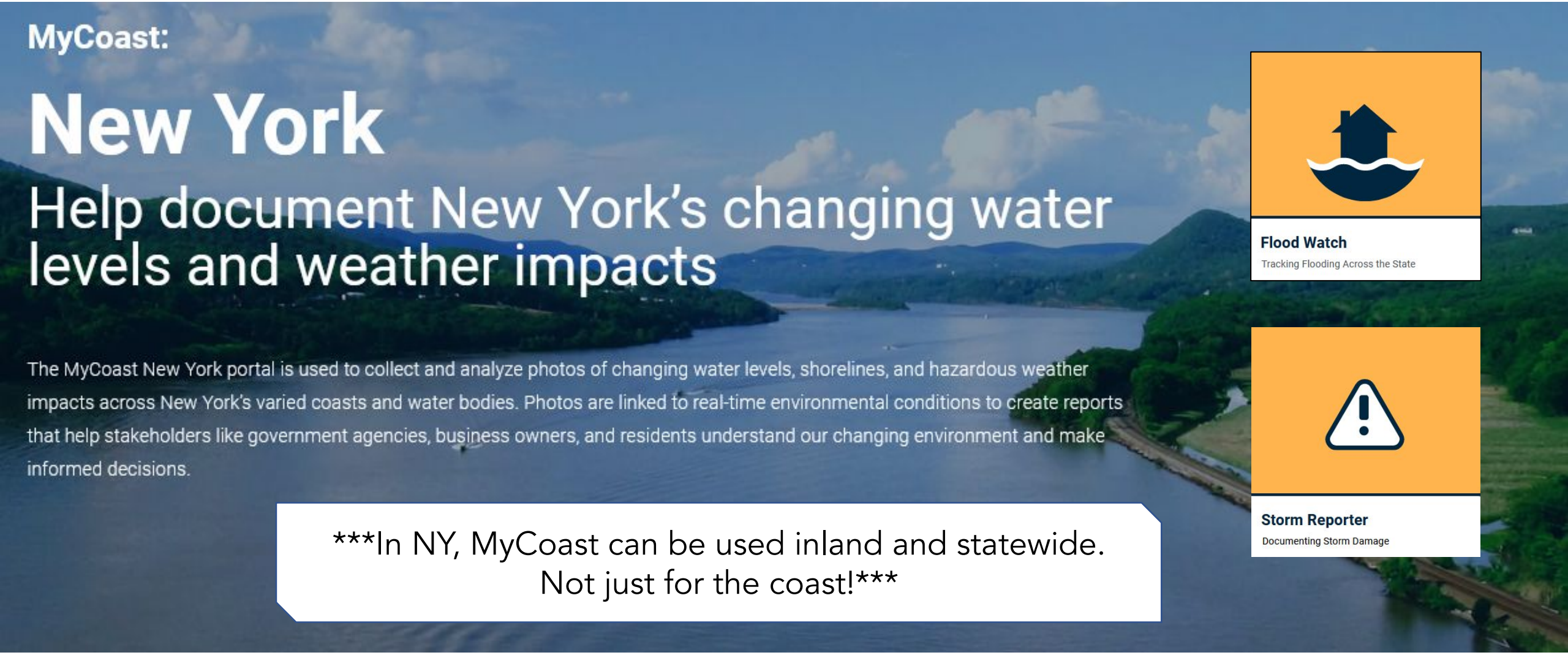
NYS Water Resources Institute

- Kristen Hychka, *Research and Outreach Specialist*, **Ithaca (Cornell)**
- Rewa Phansalkar, *Research and Outreach Specialist*, **Ithaca (Cornell)**

# www.mycoast.org/ny



# www.mycoast.org/ny




***In NY, MyCoast can be used inland and statewide.
Not just for the coast!***

# How it Works

1

## You Add Your Picture or Report

Take your picture via our mobile app (below) or submit it via your browser when you get back to your computer.

2

## We Fetch Background Data

Our servers retrieve weather and tidal information to add context to your photo.

3

## Your Report Informs Decisions

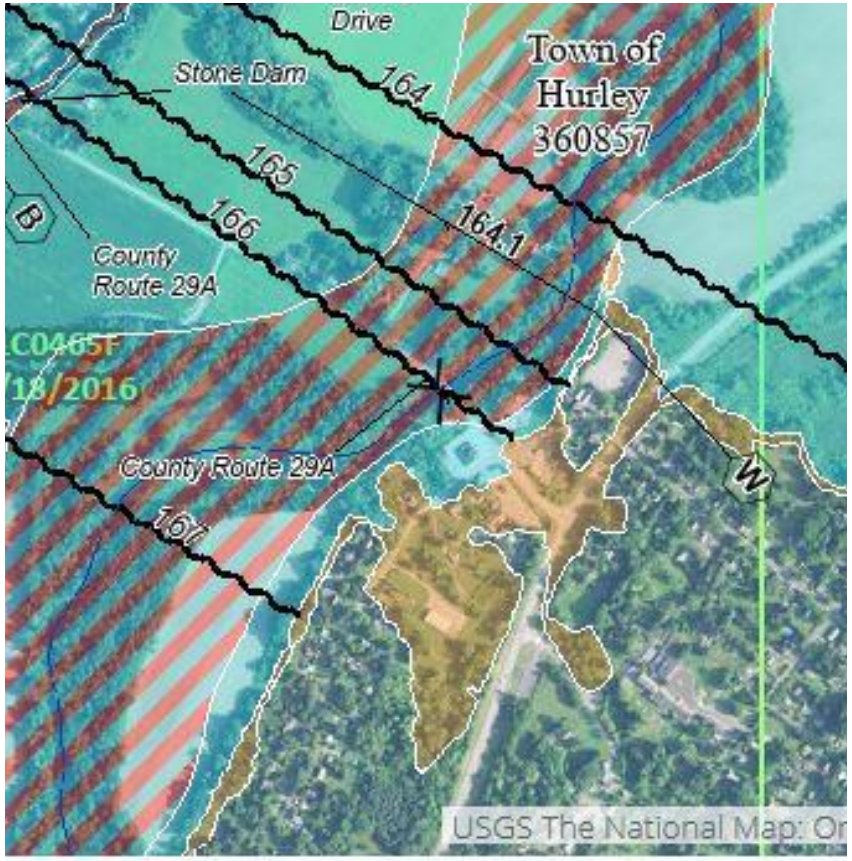
Coastal leaders and groups can use your data to make better decisions.

# Why document floods?

- Storms and floods are increasing in frequency and severity
- Lack of documentation during and after weather events

Edgemere, NY
https://mycoast.org/reports/103950

Beacon, NY
https://mycoast.org/reports/101081



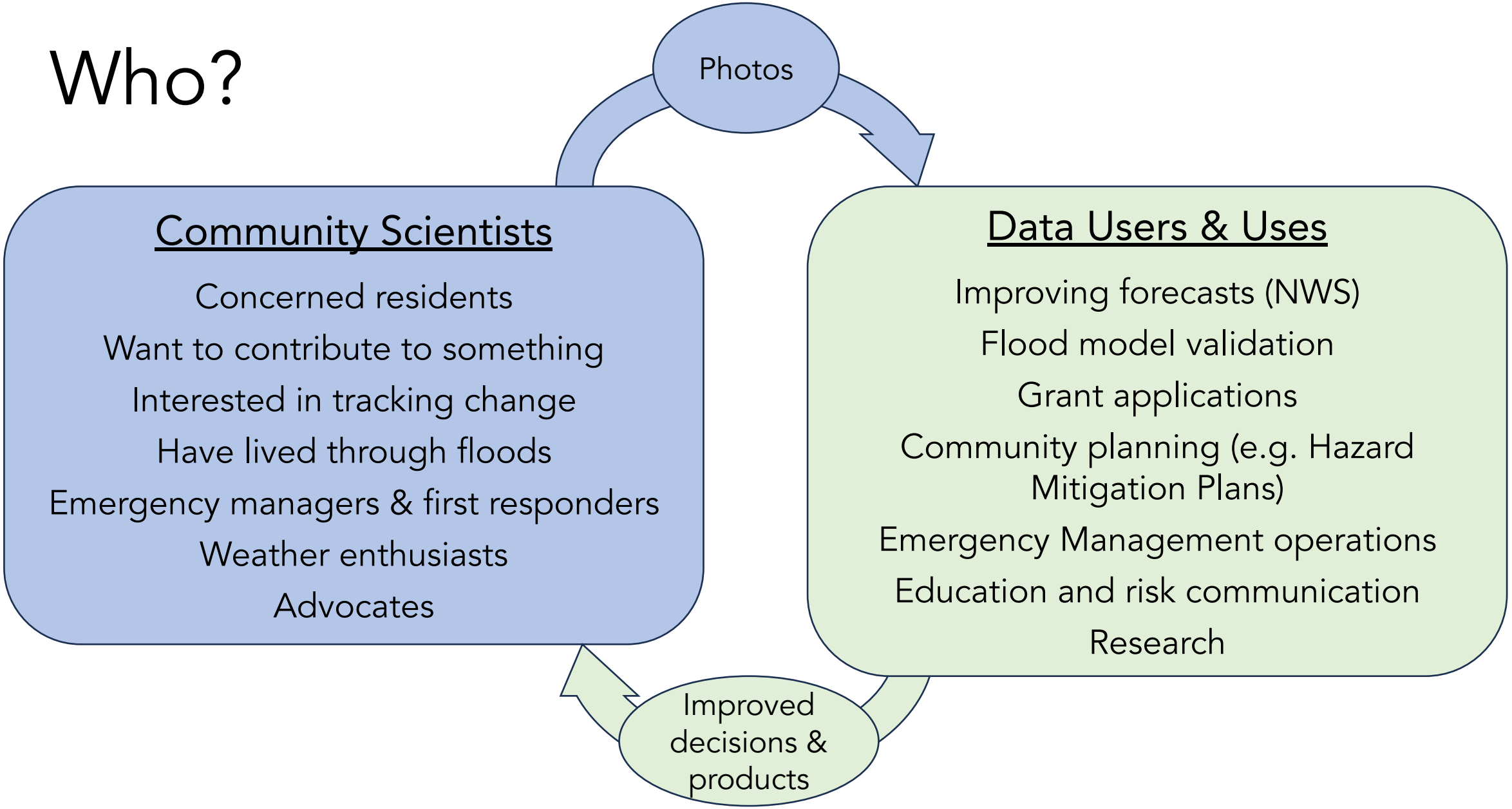

- Current data used for decisions doesn't consider climate change
- Photos can complement these data

# Photos as data

- Hyperlocal data
- All models have limitations
- "A picture is worth 1000 words"
- *Value of engaging community members*

"This section of Springtown Road, located within the 1% annual flood zone along the Wallkill River, was inundated 5 times in the past 2 years."

# Who?

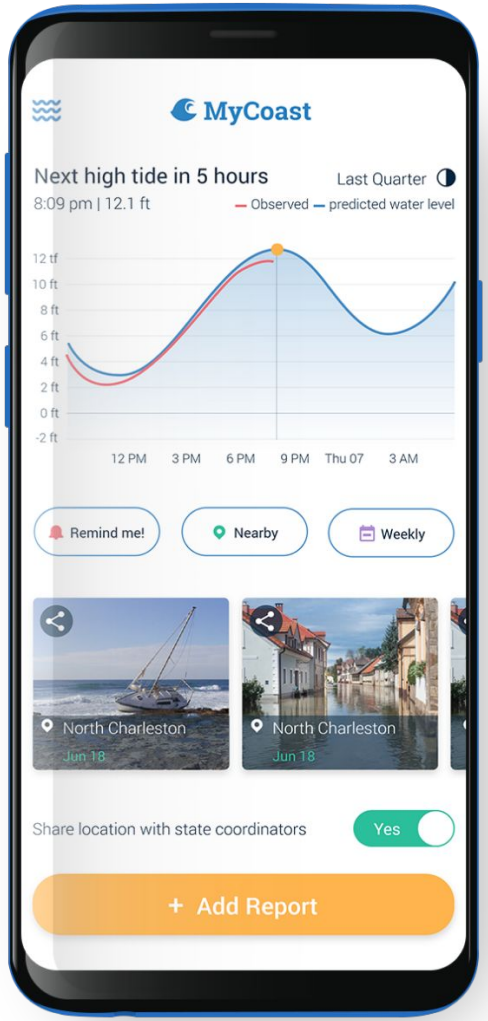

Photos
Community Scientists
Concerned residents
Want to contribute to something
Interested in tracking change
Have lived through floods
Emergency managers & first responders
Weather enthusiasts
Advocates
Data Users & Uses
Improving forecasts (NWS)
Flood model validation
Grant applications
Community planning (e.g. Hazard Mitigation Plans)
Emergency Management operations
Education and risk communication
Research
Improved decisions & products

# Become a MyCoast / Flood Watch NY volunteer

1. Download the MyCoast app or visit MyCoast.org/ny
2. Register
3. Snap photo
4. Submit photo report

Download on the App Store

GET IT ON Google Play



# Flood Watch Report

## Tracking flooding across the state

- Flooding - water on land that is normally dry
- Many different causes and types
  - river, ice jam, runoff, stormwater, ag drainage failure, high tide, storm surge, local waves, high water, groundwater

Blocked storm drain

High water event

Tidal flooding

# Storm Reporter Report

Documenting damage after a storm

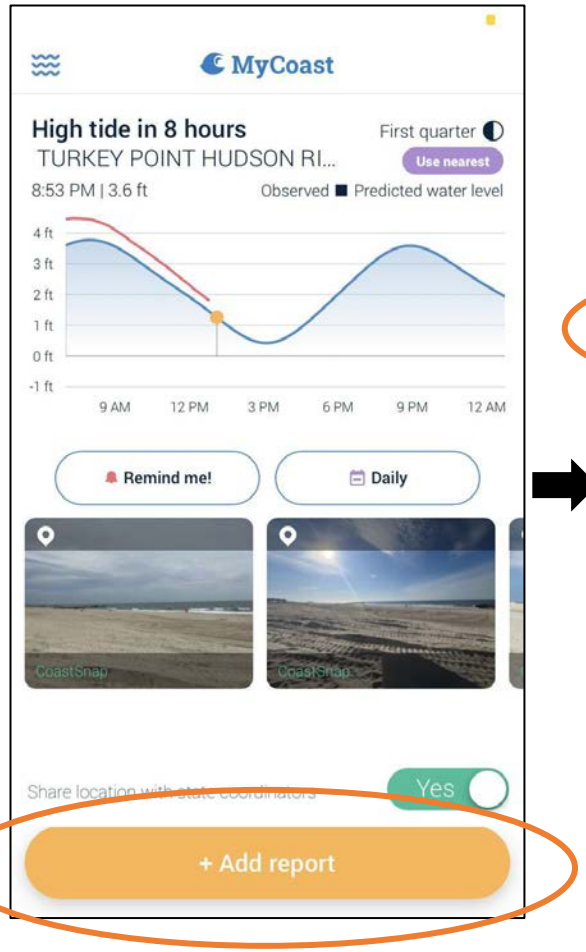
- Damage from wind, water, ice, snow
- Damage to infrastructure, natural environment, etc.

Damage to bridge

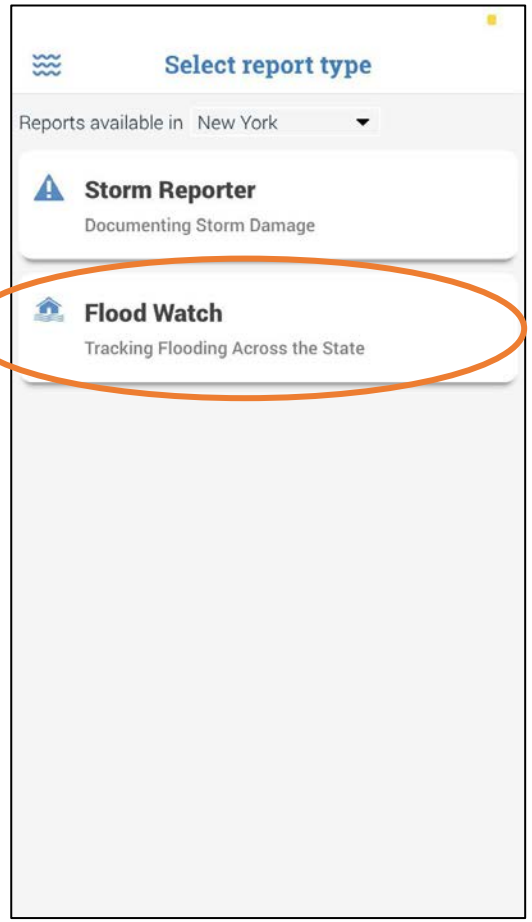
Downed trees & powerlines (be careful)

Impassable roads due to floodwater

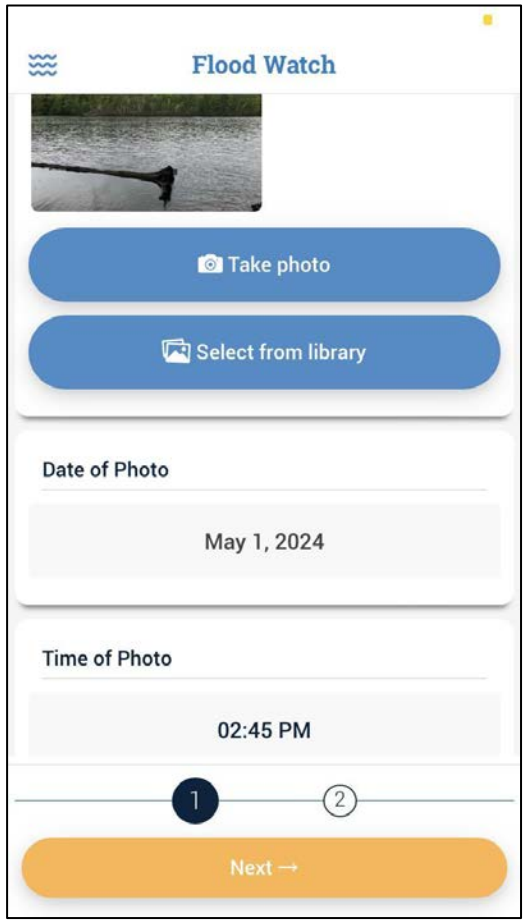
# How to upload a photo



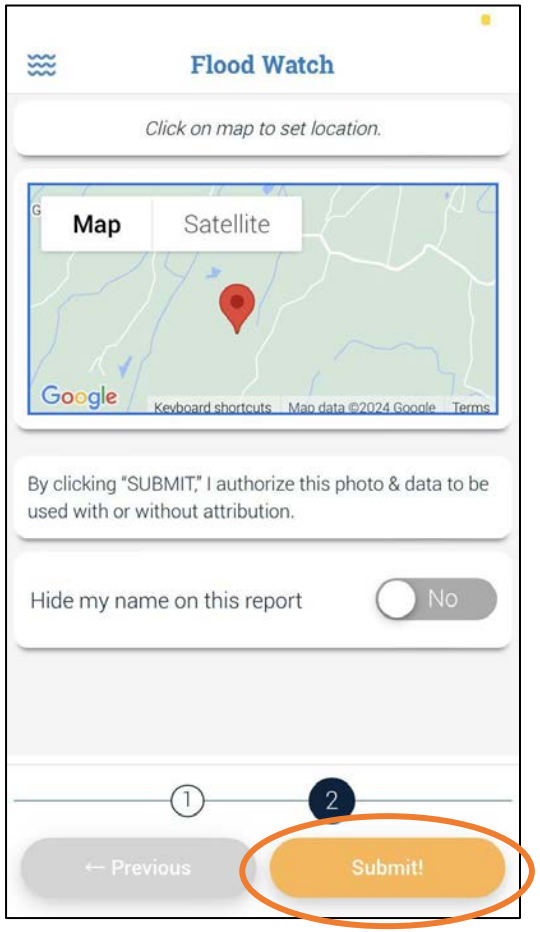

Select: + Add Report




Select: Report type




Upload/take photo, check date/time, add additional info, Next □




Check location, Submit!

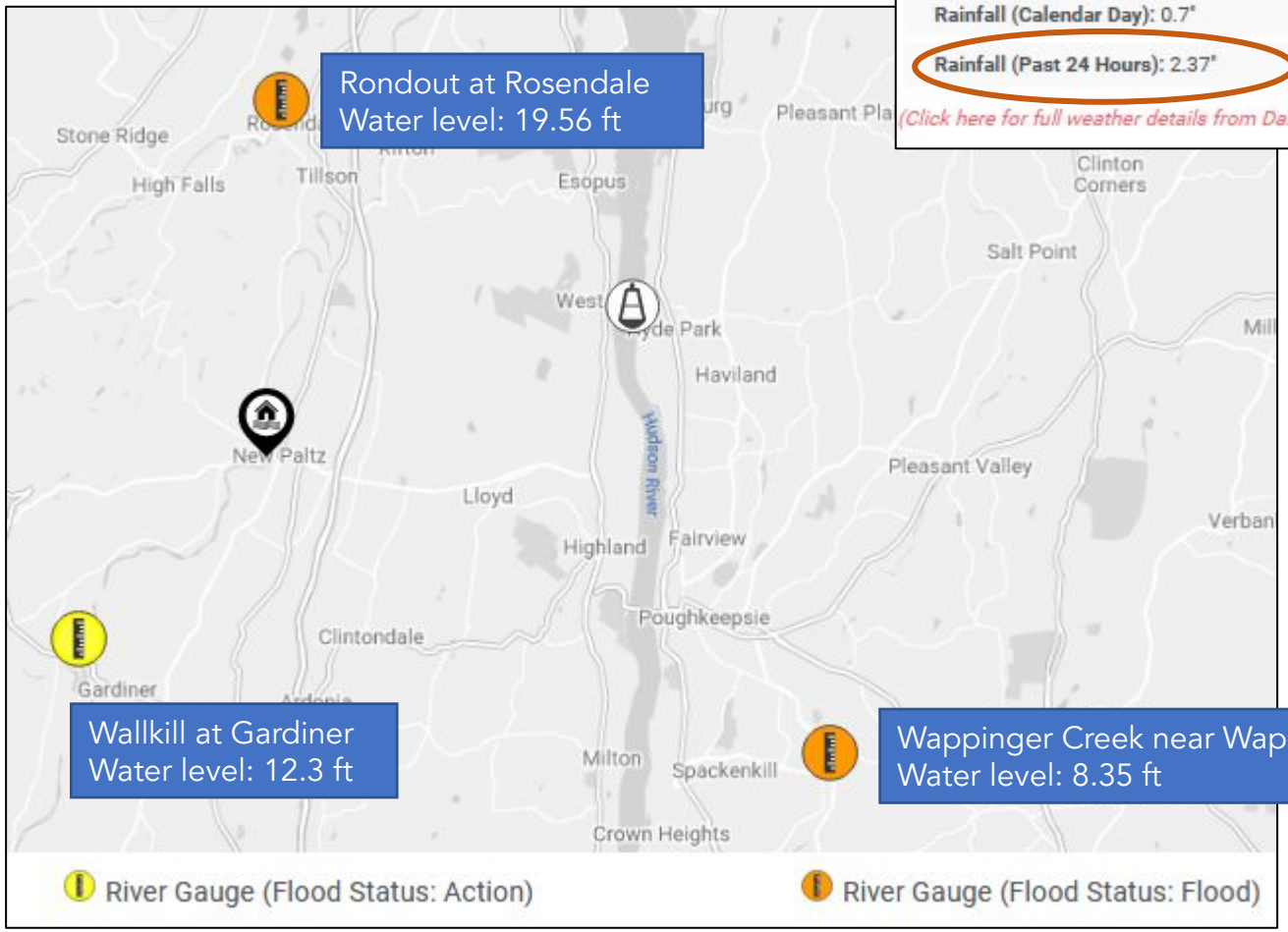
# Photos linked to nearby weather and USGS river gauge

https://mycoast.org/reports/95822

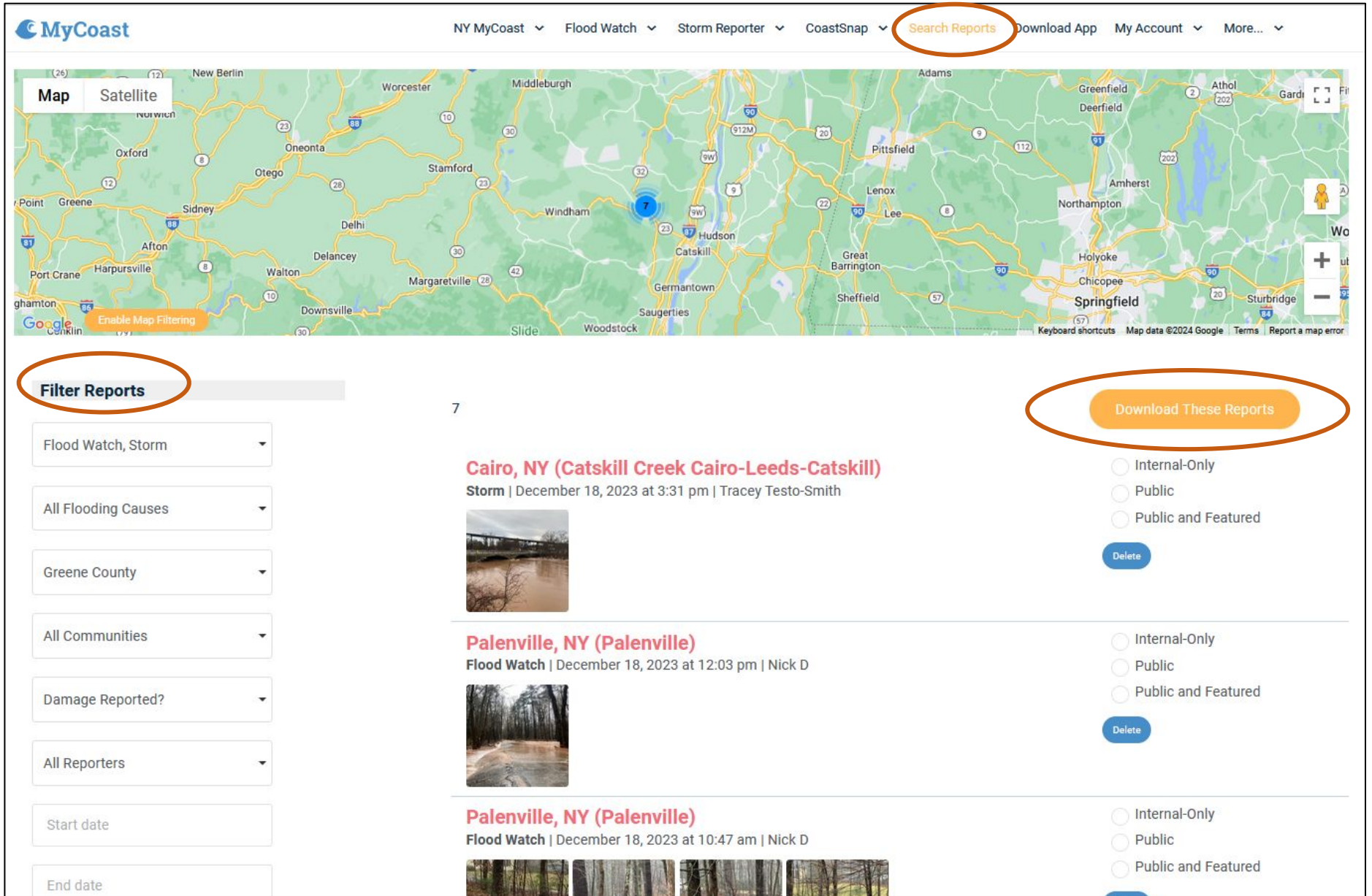
Location: Route 299 & Springtown Rd, New Paltz
Date/time: 4/8/2022 10:43 am

**Weather Overview**

**Wind Speed:** 7.1 MPH
**Wind Direction:** W (272°)
**Temperature:** 54°F
**Rainfall (Calendar Day):** 0.7"
**Rainfall (Past 24 Hours):** 2.37"
*(Click here for full weather details from DarkSky)*

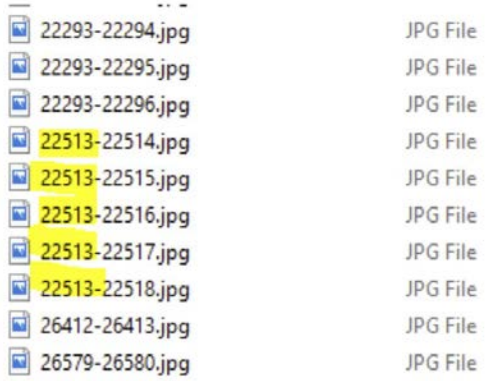


# Access reports on website



# Bulk Download MyCoast Photos & Data

Images




CSV

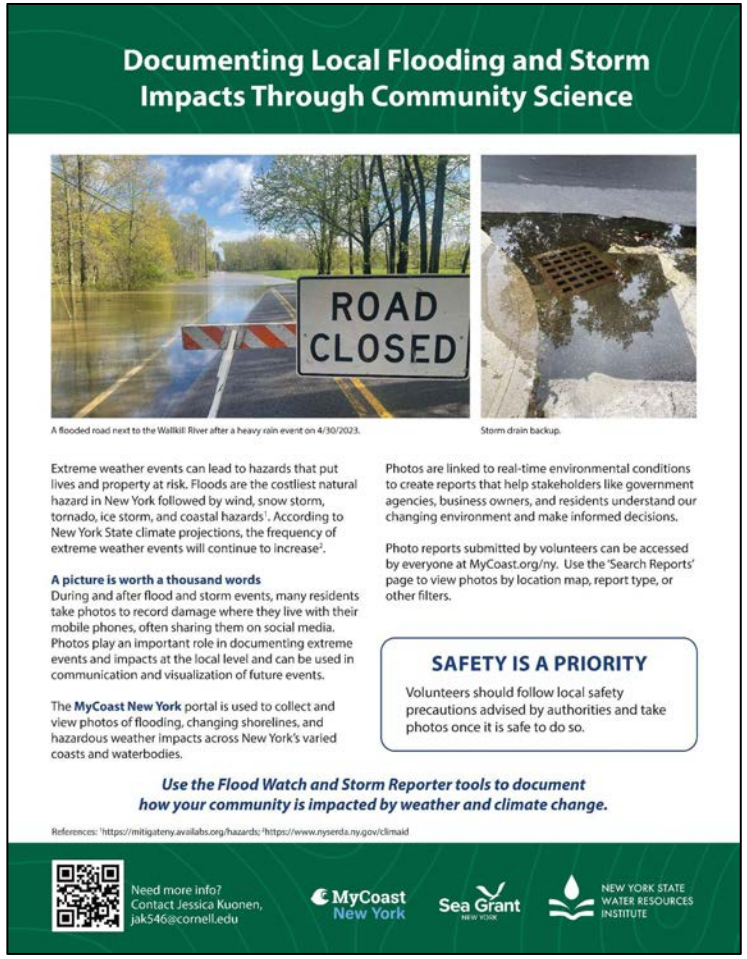
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID # | reportType | photo_date | photo_time | from_devic | AuthorNam | AuthorEma | URL | images | location_lo | location_la | geo_admin | geo_admin | geo_localit | geo_neighb | geo_route | weather_te | weather_wi | weather_wi | weather_ca | TideDataOI | TideDat |
| 144882 | Storm | 12/18/2023 | 3:31 PM | iOS 16.6.1 | | | https://myc | https://rep | -74.0123 | 42.32068 | NY | Greene Cor | Cairo | Frank Hitch | Frank Hitch | 44 | 10.4 | 271 | 2.376 | https://tide | https:// |
| 143455 | Flood Watch | 12/18/2023 | 12:03 PM | iOS 17.1.2 | | | https://myc | https://rep | -74.0042 | 42.19423 | NY | Greene Cor | Palenville | Pennsylvar | Pennsylvar | 53 | 15 | 280 | 2.289 | https://tide | https:// |
| 143326 | Flood Watch | 12/18/2023 | 10:47 AM | iOS 17.1.2 | | | https://myc | https://rep | -74.0042 | 42.19421 | NY | Greene Cor | Palenville | Pennsylvar | Pennsylvar | 54.9 | 13.9 | 220 | 2.23 | https://tide | https:// |
| 101415 | Storm | 12/23/2022 | 3:17 PM | iOS 16.1.1 | | | https://myc | https://rep | -73.7969 | 42.35249 | NY | Greene Cor | Coxsackie | Reed St | Reed St | 34.6 | 16.4 | 257 | 1.115 | https://tide | https:// |
| 104651 | Flood Watch | 12/23/2022 | 2:24 PM | | | | https://myc | https://rep | -73.79 | 42.463641 | NY | Greene Cor | New Baltim | NY-144 | NY-144 | 45.8 | 12 | 158 | 1.112 | https://tide | https:// |
| 100337 | Flood Watch | 12/23/2022 | 12:27 PM | Android 10 | | | https://myc | https://rep | -73.8554 | 42.21089 | NY | Greene Cor | Catskill | Main St | Main St | 47.3 | 15.4 | 167 | 1.18 | https://tide | https:// |
| 100334 | Flood Watch | 12/23/2022 | 12:24 PM | Android 10 | | | https://myc | https://rep | -73.8543 | 42.21045 | NY | Greene Cor | Catskill | Main St | Main St | 47.3 | 15.3 | 167 | 1.18 | https://tide | https:// |

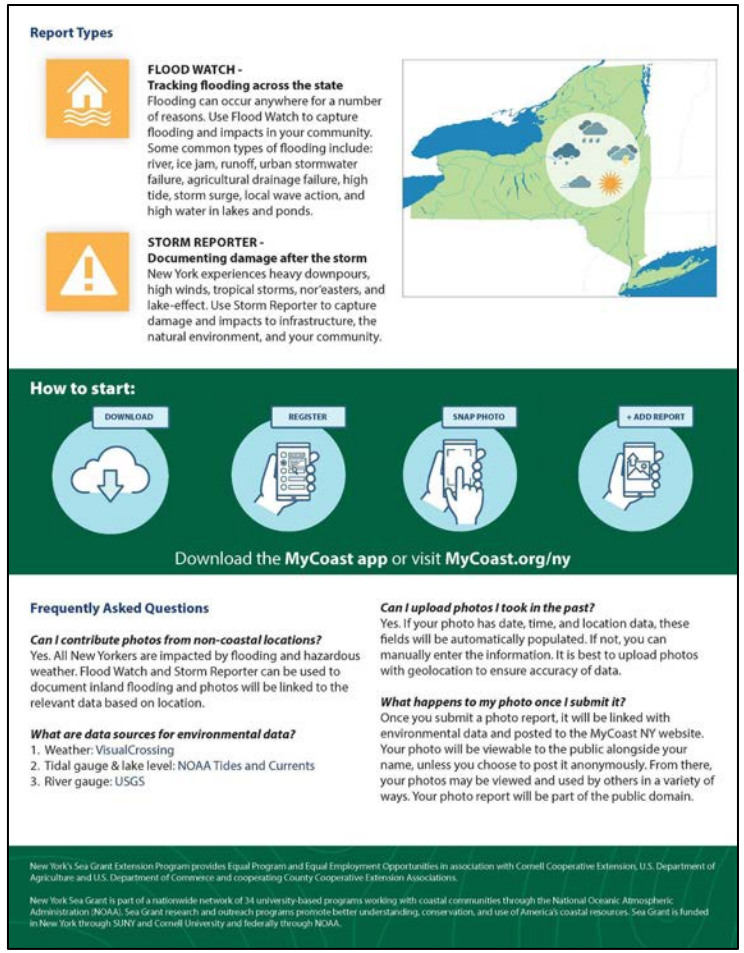
| AU | AV | AW | AX | AY | AZ | BA | BB |
|---|---|---|---|---|---|---|---|
| guessCause | cause-other | whatFlooded | flooded-other | guessDept | road_damage_detail | response_damage | |
| | | | | | | | |
| Overland flooding (Nearby waterbody) | | Roads/streets | | 4 | | | |
| Rainfall (Water pooling from direct rainfall) | | Lawns/vegetation | | 0 | | | |
| | | | | | Impacted, but passable | None | |
| Overland flooding (Nearby waterbody) | high tide from Hudson River | Other | Flood plain south of Hannacroix Creek, west of Hudson River. Swamp forest and meadow. | | | | |
| Overland flooding (Nearby waterbody) | Storm surge | Roads/streets | | 0 | | | |
| Overland flooding (Nearby waterbody) | Storm surge | Roads/streets | | 0 | | | |

# Resources

- Flyer
- Factsheet
- Newsletters
- Recordings

# Rebranding for inland communities

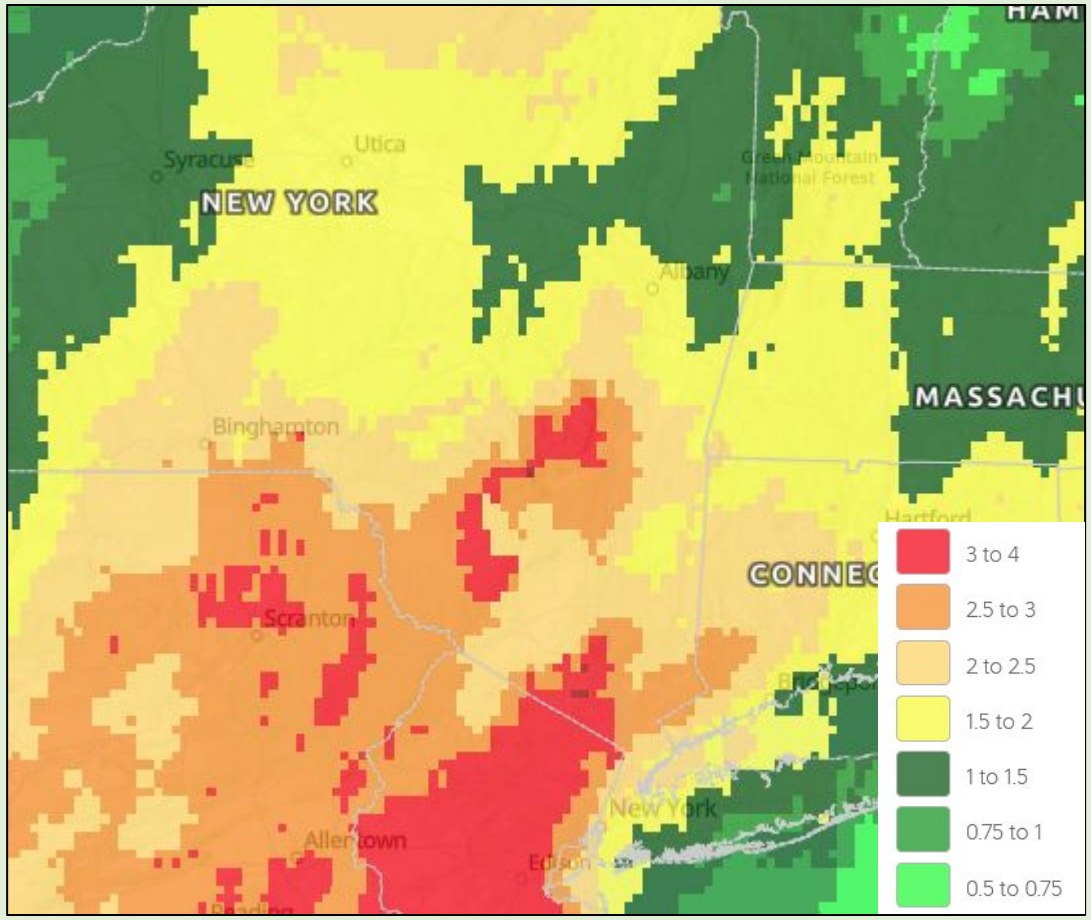


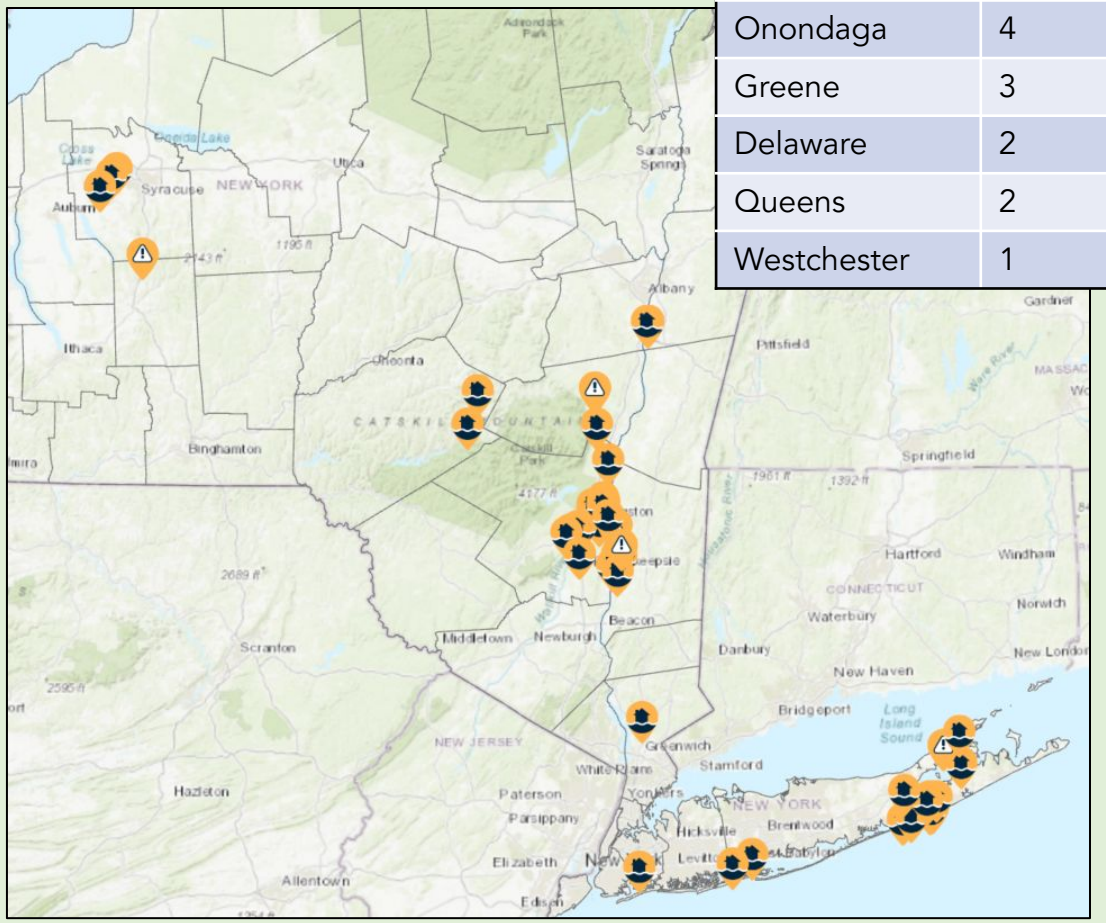
# What are we seeing?

# Documenting the storm: December 18, 2023

| County | # Reports |
|---|---|
| Dutchess | 29 |
| Suffolk | 24 |
| Ulster | 17 |
| Albany | 8 |
| Onondaga | 4 |
| Greene | 3 |
| Delaware | 2 |
| Queens | 2 |
| Westchester | 1 |




Observed 1-day precipitation estimate in inches (12/18/2023)
National Water Prediction Service, NOAA




90 MyCoast photo reports were submitted: 12/17-12/19/23

# Volunteer highlight: Cortland Onondaga Federation of Kettle Lakes Association

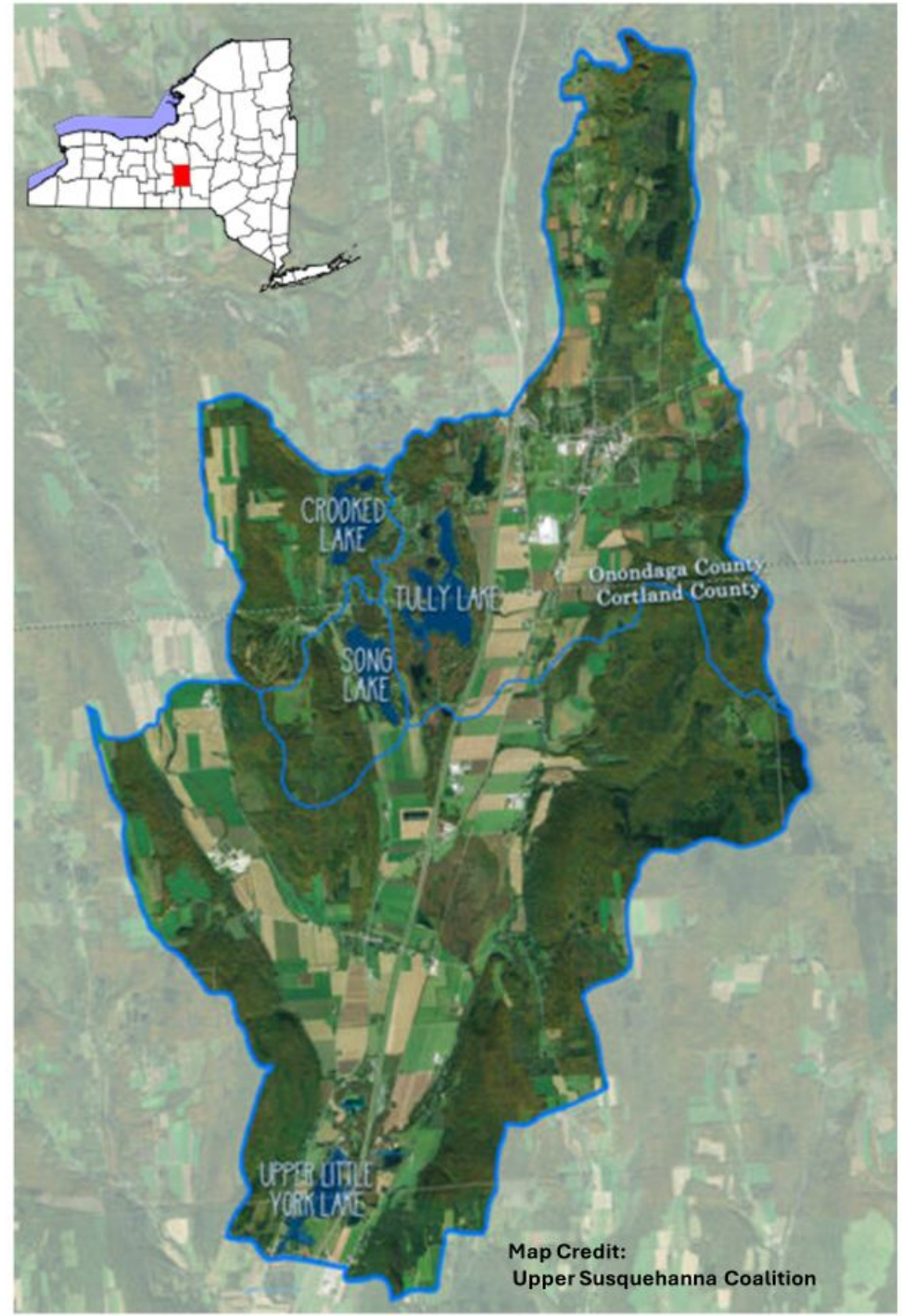
## Using MyCoast as a data repository in support of Storm Response Plan

KETTLE LAKES

CORTLAND-ONONDAGA FEDERATION OF KETTLE LAKE ASSOCIATIONS

Counties: Cortland & Onondaga

Municipalities: Tully, Preble, Homer, & Little York



## Table 9.35-4. Potential Flood Losses to Critical Facilities

| Name | Type | Exposure | | Potential Loss from 1% Flood Event | | Addressed by Proposed Action |
|---|---|---|---|---|---|---|
| | | 1% Event | 0.2% Event | Percent Structure Damage | Percent Content Damage | |
| Verizon Facility | Major Communication Facility | X | X | - | - | V. Tully-4 |
| WEP Tully Sewage Treatment Plant | Waste Water Treatment Plant | X | X | 0% | 0% | - |

*Source: FEMA 2016, SOCPA 2018*

The village noted that the Sewage Treatment Plant is protected from flooding.

WEATHER

# Tully slammed by rain. State of emergency declared after sewage plant floods

Updated: Mar. 06, 2023, 4:40 p.m. | Published: Aug. 18, 2021, 7:29 a.m.

Syracuse.com

Tully, N.Y. – The village of Tully was hit with nearly 4 inches of rain last night, causing a creek to overflow and flood the wastewater treatment plant

https://spectrumlocalnews.com/nys/central-ny/news/2021/08/18/flooding-triggers-state-of-emergency-in-tully

42.794404395486296, -76.10633416737238 Community Drive

# Kettle Lakes Storm Response Team

- **MISSION: support neighbors with addressing the growing number of significant storm events that result in runoff and flooding through prevention, mitigation, and immediate response**

- ACTIONS:
  - Strategic tree planting
  - Developed clearinghouse for information on storm event response, and recovery
  - Survey of impacts
  - Collect photo documentation

I started using the MyCoast App in the summer of 2023, and was immediately impressed with how **easy it was to upload pictures** of some of the significant storm runoff events that we have had in our Central New York kettle lakes community.

It was **quick, user friendly, and it accurately located each photo** using geolocations- even those from a massive hailstorm event from back in 2011.

At our annual meeting, residents decided that we are all going to begin thinking about more about high water levels, and **using the MyCoast App as a data repository** to look at trends, both in flood water levels, locations, and proximity to tributaries.

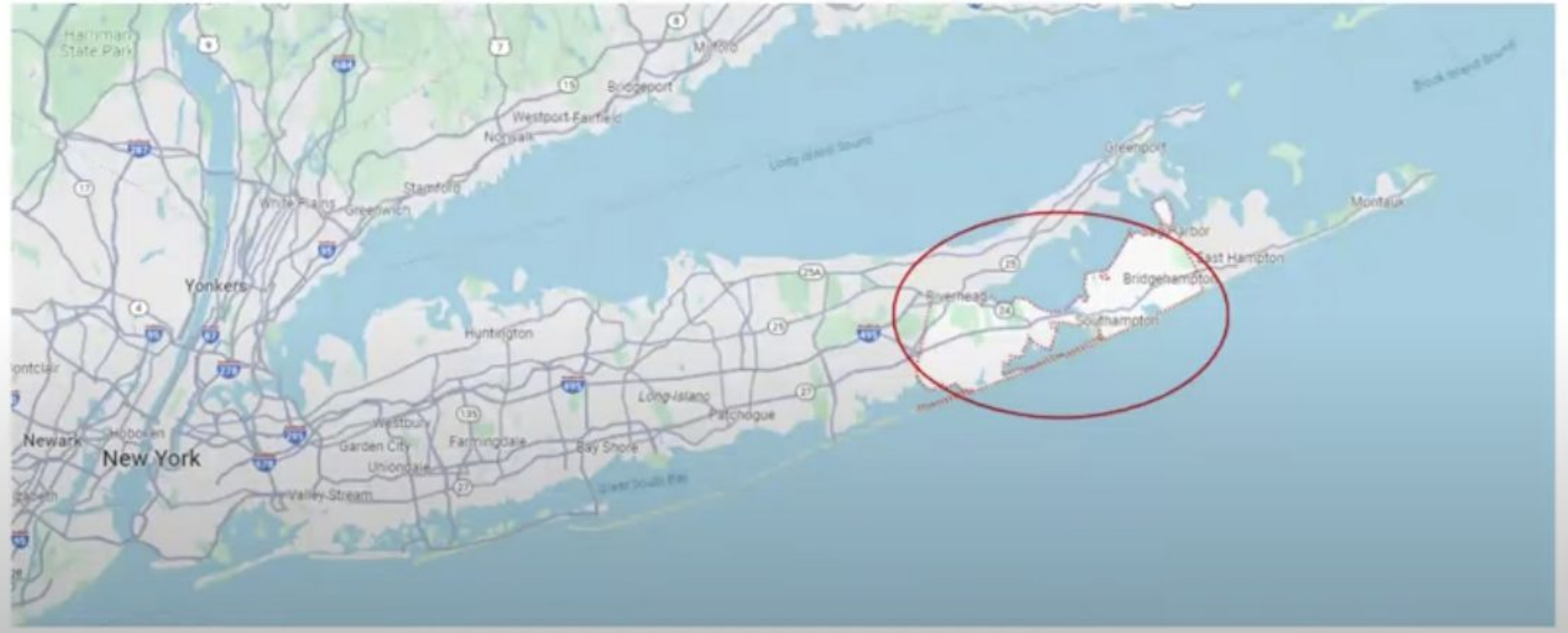
It might give us **ideas to mitigate in the future**. What a great way of keeping **track of growing frequency and severity of storm** info MyCoast is. I was happy to share it with my lake Association members.

**Colleen Zawadzki,**
President/Tully Lake Property Owners Association
COFOLKLA

# Municipal websites

# MyCoast User

Ryan J. Murphy, Emergency Manager for Town of Southampton

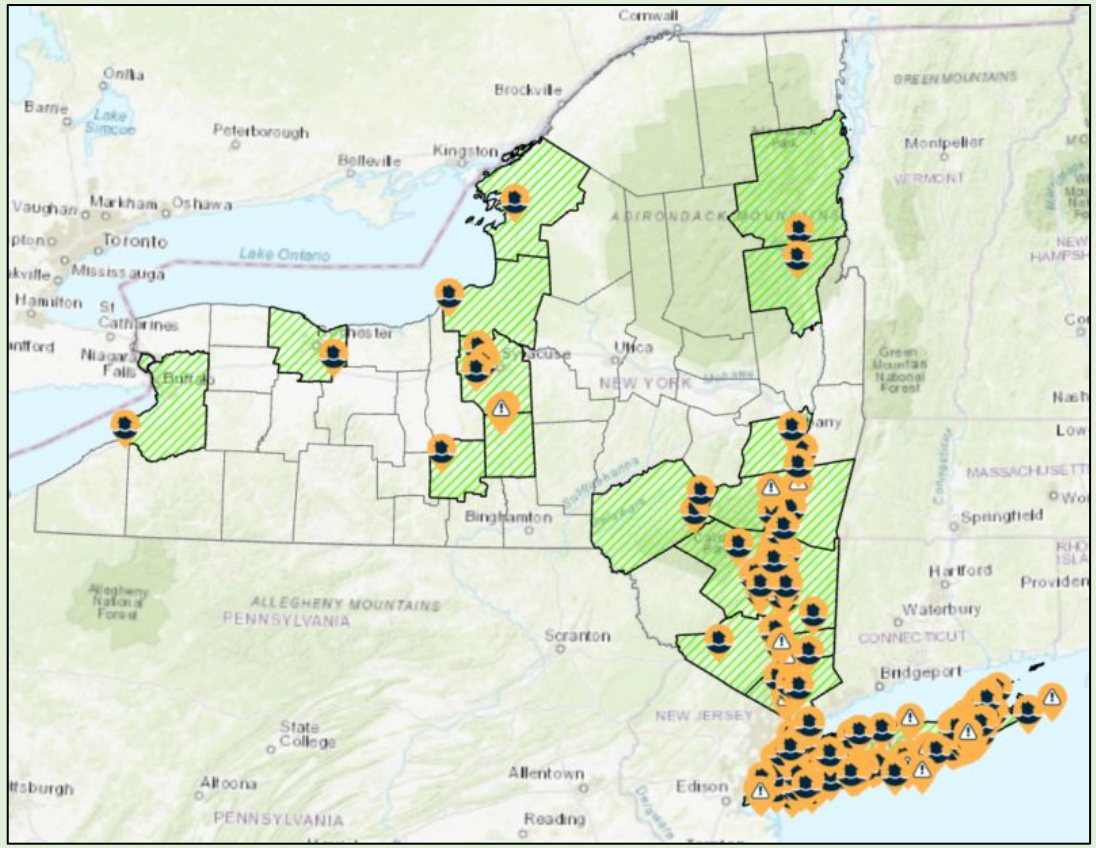


Timing: 9:34-15:36 https://www.youtube.com/watch?v=naE8u3b9XCg&t=860s

# All photos collected

7/1/2022 – 5/3/2024

- Registered users: 723
  - 265 users have submitted reports
  - 315 "Anonymous" reports
- Number of reports: 1,293
  - Flood Watch: 1,194
  - Storm Reporter: 99
- 24 counties

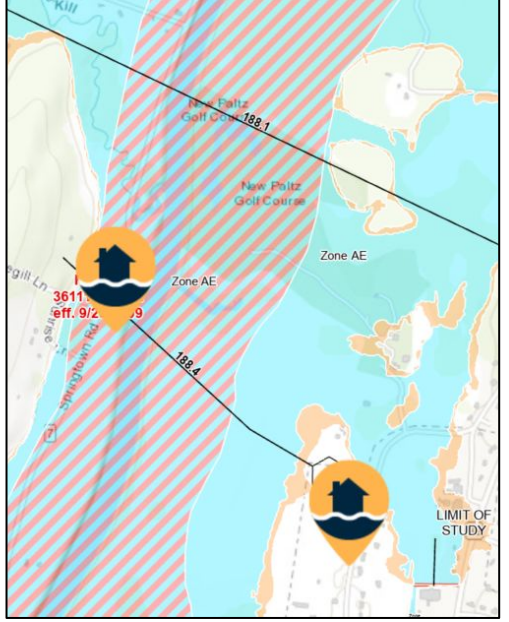


Storm surge flooding along Coxsackie waterfront (12/23/2022)
https://mycoast.org/reports/101415

# Challenges and limitations of the tool

- The name: MyCoast NY
- Shows tide chart as soon as you open the app
- Can’t search photo reports easily through the app
- No cell/wifi in many areas
- Environmental data
  - As the crow flies
  - Accurate?

# Next steps for the program




- Funding secured through June 2026 (2 years)
- Data will be added to NYS GIS Gateway!
- Upcoming virtual meetings:
  - Quarterly forum with MyCoast NY community
  - Fall series: Linking photos to state programs and planning processes
- Packaging data for communities, decision makers, etc.
- Continue to explore partnerships while promoting use
  - NYS Division of Homeland Security and Emergency Services Hazard Mitigation Planning
  - Municipal Historians of Tompkins Co

# Thank you! Questions?

Visit
Mycoast.org/ny

Get in touch!

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Sea Grant
NEW YORK

NEW YORK STATE
WATER RESOURCES
INSTITUTE