Salt Marsh Restoration Project

Funded by: Nature Smart Climate Solutions (NSCSF)

Trout River Environmental Committee

Human Impacts on Salt Marshes

- 40% of the worlds population live in coastal regions
- Agricultural and industrial waste
- Nutrient loading
- Garbage
- Erosion control hard engineering
- Damming, dikes, rock walling
- Land conversion
- Invasive species
- Sea level rise
- Climate change

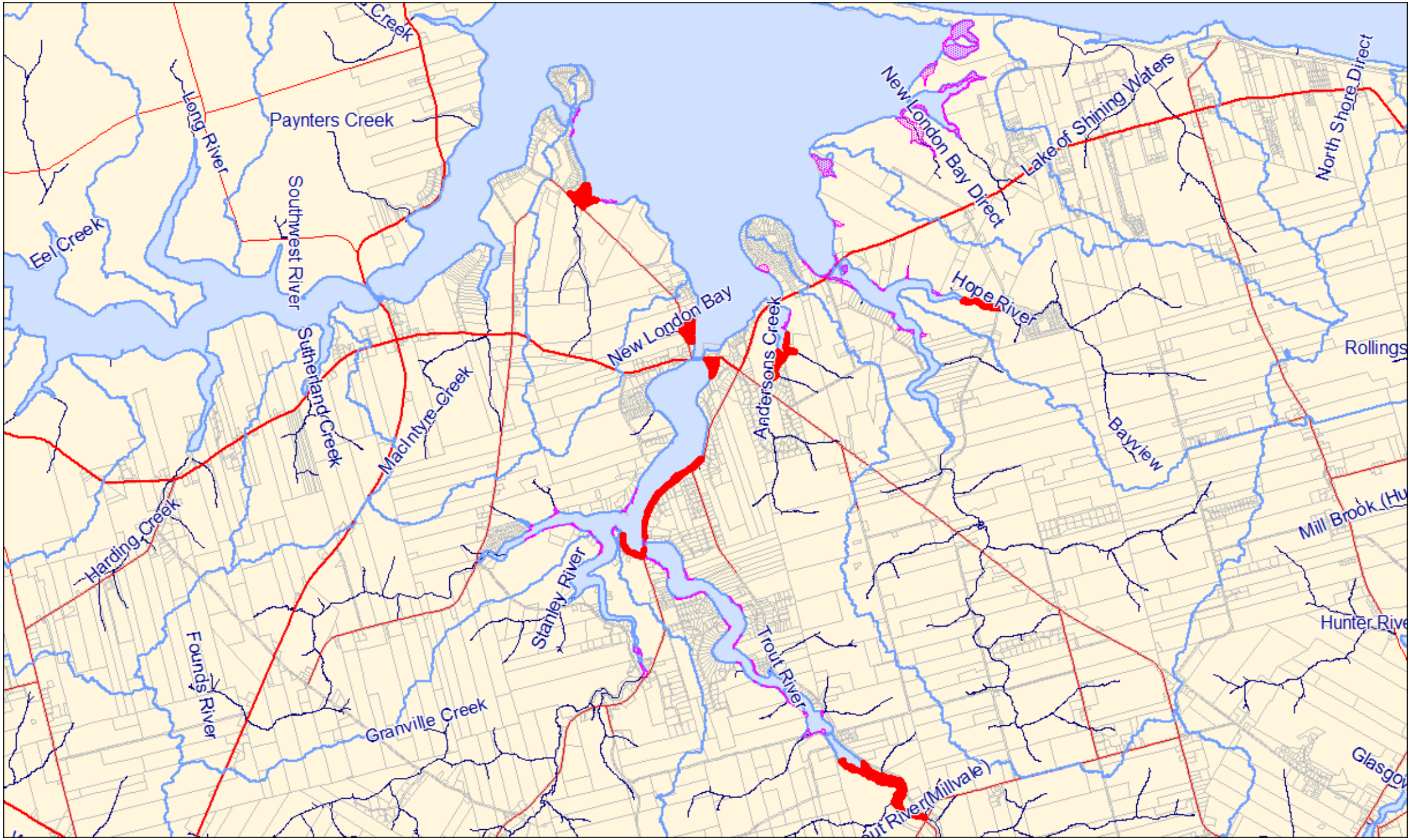
How Salt Marshes Protect Against Storm Surge

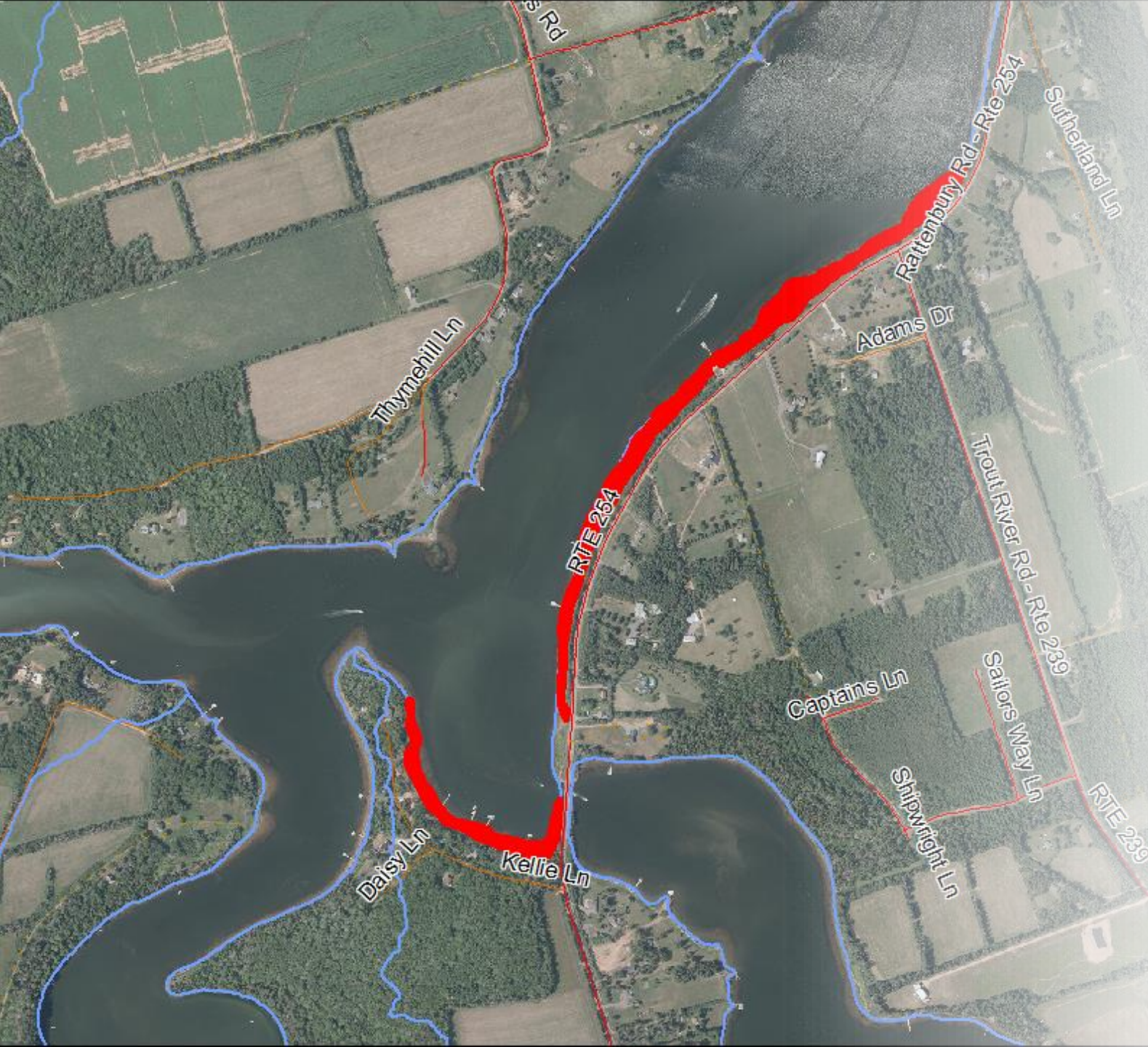
- First line of defence against coastal erosion and flooding
- Buffer waves and trap sediment
- Absorb rainfall and filter runoff protecting aquatic ecosystems
- Act as a natural barrier slowing water, preventing upland flooding
- Can reduce height of damaging waves by close to 20%
- But they can only do these things if they are healthy

Goals

Restore salt marshes in the Stanley/Hope River Watershed by:

- Increasing sediment holding capacity
- Removing invasive species and
- Planting native species in salt marshes and upland
- Reducing input of excess nutrients and other pollutants by stopping upland runoff
- Increasing resilience against storm surge
- Increasing ability as a natural barrier to slow storm surge


Paynters Creek
Long River
Southwest River
Eel Creek
Sutherland Creek
MacIntyre Creek
Harding Creek
Founds River
Granville Creek
Stanley River
New London Bay
Andersons Creek
New London Bay Direct
Lake of Shining Waters
North Shore Direct
Hope River
Bayview
Rollings
Mill Brook (Hu
Hunter Rive
Trout River
Glasgo



Morris's Bridge Salt Marsh's

Impacts:

- Debris and garbage from Fiona
- Die off and die back of native vegetation
- Runoff from road

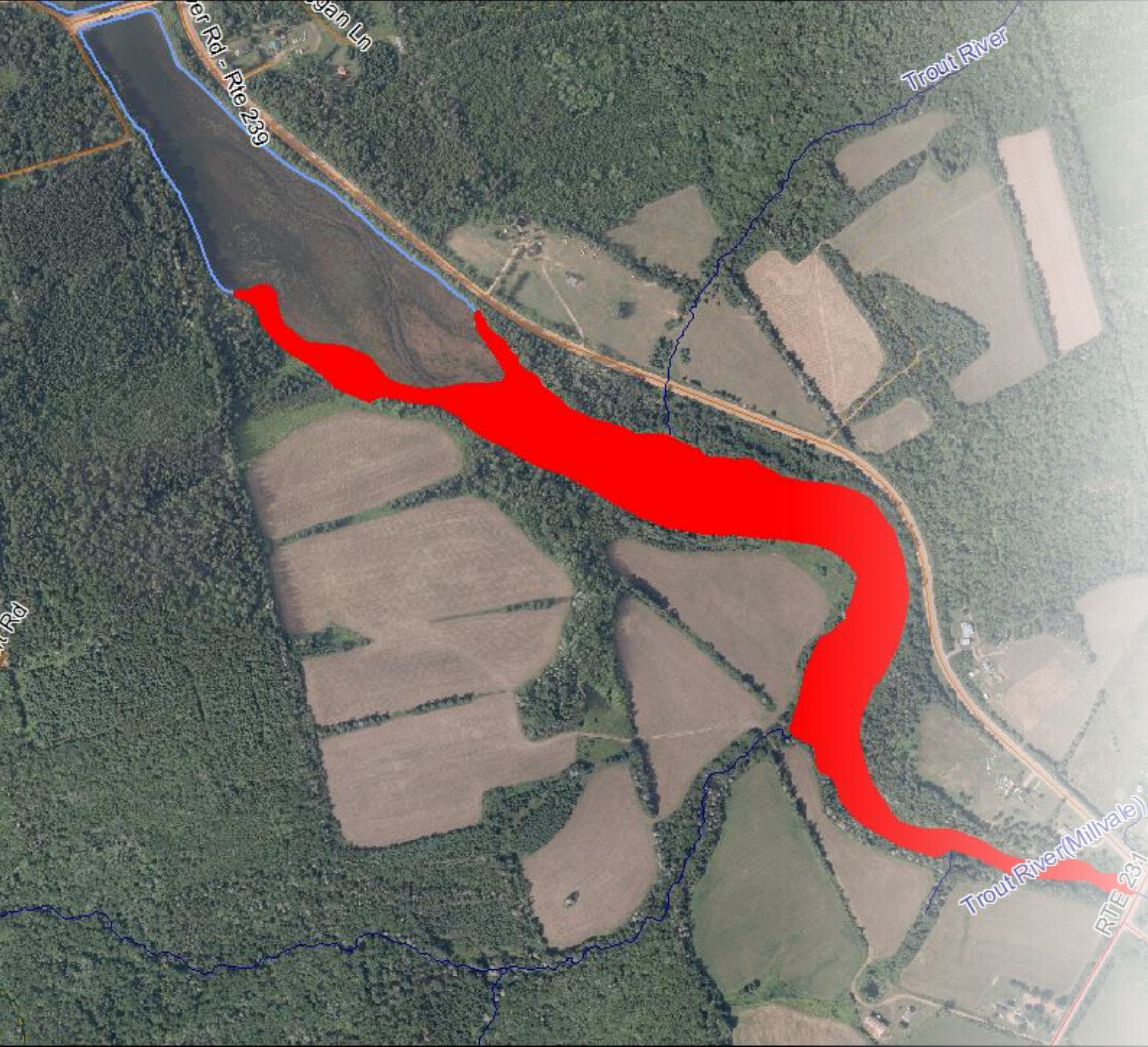
Restoration:

- Increase resilience to storm surge
- Remove garbage and debris from the salt marsh and clean up the area
- Plant native salt marsh vegetation
- Replant trees lost to reduce upland impacts
- Work with transportation to reduce impacts from road runoff

Carr's Salt Marsh and Stanley Bridge Salt Marsh

Restoration

- Increase resilience against storm surge
- Expand salt marsh area through planting of native plants
- Increase resilience against road runoff and upland use
- Restore health of springs that feed into salt marsh's
- Reduce agricultural runoff and nutrient loading



Trout River Salt Marsh

Impacts:

- Agricultural runoff
- Congestion from Gunn's Bridge
- Annual anoxic conditions

Restoration:

- Remove invasives
- Reduce agricultural runoff and nutrient loading
- Remove excess sediment
- Plant native species in salt marsh
- Plant willow and other native trees and shrubs to reduce runoff and fix nitrogen
- Reduce impacts from bridge congestion
- Control upstream sediment loading
- Install natural structures to improve sediment trapping and native plant success
- Increase resilience to storm surge, work with salt marshes further downstream as well

Resources

- https://www.cam.ac.uk/research/news/salt-marsh-plants-key-to-reducing-coastal-erosion-and-flooding
- https://oceanservice.noaa.gov/facts/saltmarsh.html#:~:text=Salt%20marshes%20occur%20worldwide%2C%20particularly,located%20along%20the%20Gulf%20Coast.
- https://davidelmore.com/djv/greenwich-np-pei/
- https://www.researchgate.net/profile/Mark-Bertness/publication/255981269_Salt_marsh_communities/links/5ea2eb48458515ec3a030975/Salt-marsh-communities.pdf
- https://books.google.ca/books?hl=en&lr=&id=bGMECAAAQBAJ&oi=fnd&pg=PR5&dq=salt+marsh+&ots=xB7BfUXTcN&sig=Y5aCEy-T_5eRjHj5BjCtP6lp62k&redir_esc=y#v=onepage&q=salt%20marsh&f=false
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- https://www.sciencedirect.com/science/article/abs/pii/0272771483900021
- https://www.sciencedirect.com/science/article/abs/pii/0025326X94001737
- https://esajournals.onlinelibrary.wiley.com/doi/abs/10.2307/1942303

Thank you!

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