

Overview of Presentations

- Eurasian Watermilfoil and ProcellaCOR EC
- P2023-0017; Lake George Park Commission
- P2023-0018; Lake George Park Commission
- P2024-0083; Highland Forests, LLC
- P2024-0090; Chateaugay Lake Foundation

Eurasian Watermilfoil and ProcettaCOR EC

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Overview Of this presentation

- Invasive Species: Eurasian watermilfoil
- Treatment Options
- Chemical Profile: ProcellaCOR EC
- Adirondack Treatments

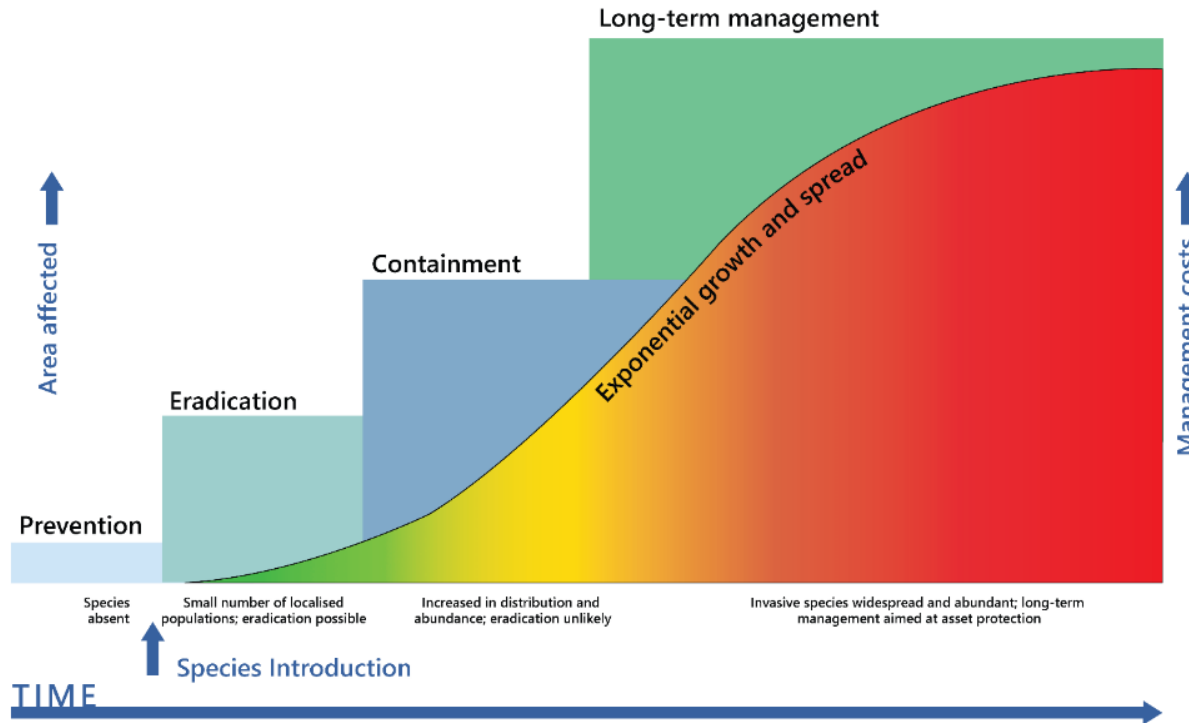
Invasive Species: Eurasian Watermilfoil (EWM)

Invasive Species

“species that are non-native to an ecosystem ... whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health” - Presidential Order 13122



Once an invasive species becomes established, early detection and rapid response is critical to mitigating impacts and achieving successful eradication.



As infestations spread and grow, they become more difficult and more expensive to manage - and may never be completely eradicated.

Eurasian watermilfoil – *Myriophyllum spicatum*

- Native to eastern Europe, Asia and North Africa
- Broad tolerances (depth, pH, temperature, turbidity)
- No native predators
- Prolific reproduction → auto fragmentation
- Forms dense canopies at and near the surface of the water







Agency's Charge: To protect the resources of the Adirondack Park

Invasive Species Best Management Practices



**INVASIVE SPECIES
MANAGEMENT**
ADIRONDACKS



Updated April 2023

Contact Information

The Nature Conservancy's
Adirondack Park Invasive Plant Program
8 Nature Way, Keene Valley, NY 12943
(518) 576-2082 • www.adkinvasives.com

Treatment Options

Hand Harvesting & Diver
Assisted Suction
Harvesting (DASH)

Benthic Barriers

Mechanical Harvesting

Chemical Management

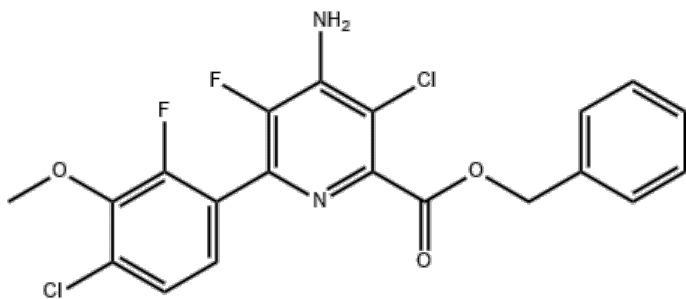
- Minerva Lake
- Lake George (Sheep Meadow)
- Lake George (Blairs Bay)
- Paradox Lake
- Lake Luzerne
- Brant Lake
- Caroga Lakes

Florpyrauxifen-benzyl (ProcellaCOR EC)

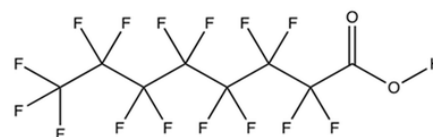
- Does not possess the chemical stability and persistence associated with per- and poly fluoroalkyl substances (PFAS)
- Degrades relatively quickly in the environment through photosynthesis and microbes
 - Because of this – it does not bio-accumulate
- The definition of PFAS adopted by the state of Minnesota is much broader than the EPA/DEC definition (or the 8 others used in the field of Organic chemistry; Hammel et al. 2022)
 - Minnesota Law (Minn. Stat. 18B.01 subd. 15(c)) defines PFAS as “a class of fluorinated chemicals containing at least **one** fully fluorinated carbon atom.”

US Environmental Protection Agency (2017). Environmental Fate and Ecological Effects Risk Assessment for the Registration of the New Herbicide for the Use on Rice and Aquatics Florpyrauxifen-benzyl (D429728)

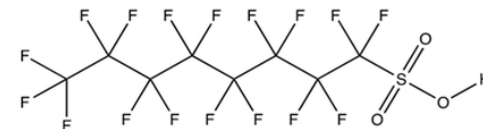
Chemical structure comparison



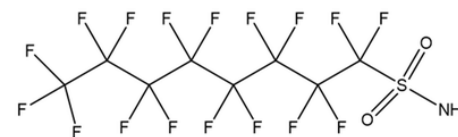
Florpyrauxifen-benzyl



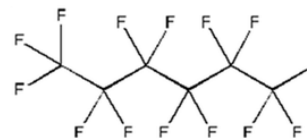
PFOA



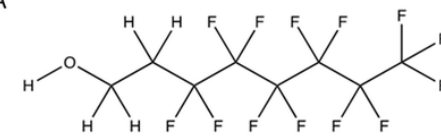
PFOS



PFOSA



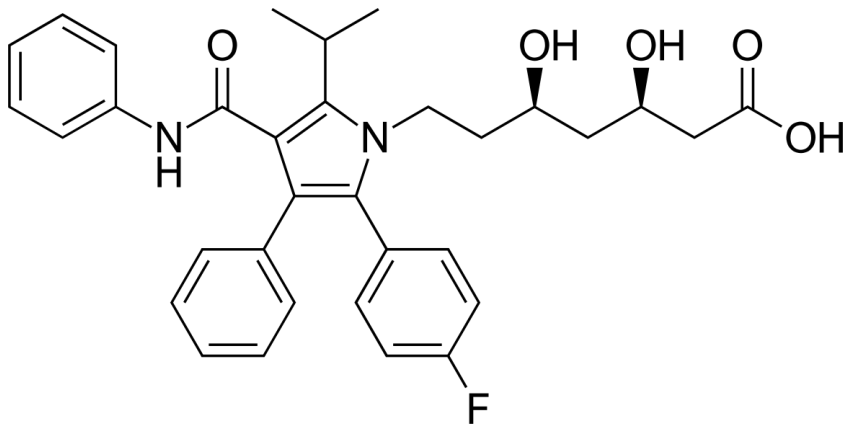
PFHxI



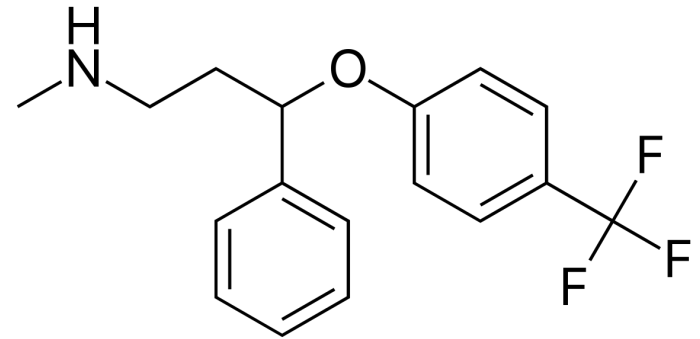
6:2 FTOH

per- and poly fluoroalkyl substances

Other chemicals MDA has listed as PFAS



Atorvastatin – Lipitor



Fluoxetine – Prozac

Reviews and Registrations

USEPA registration approved: 2018

European Union approval for agricultural use: 2019

NYSDEC registration approved: 2019

(NYSDOH, Division of Fish and Wildlife)

“The product application was fully reviewed regarding human health as well as ecosystem health. There were no objections to the registration of this product in New York State”

Health Canada Pest Management Regulatory Agency: 2022

“When used according to label directions, florpiauxifen-benzyl and its transformation products do not pose a risk to wild mammals, birds, beneficial invertebrates, earthworms, bees, aquatic invertebrates, fish, amphibians, or algae.”

ProcellaCOR EC

A Selective Systemic Herbicide

- Limited non-target impacts
- Rapid plant uptake (2-6 hours)
- Low dosage (<8 parts per billion)
 - 1 ppb = 3 seconds in a century
 - = 1 pinch of salt in 10 tons of potato chips
 - = 1 sheet in a toilet paper roll stretching from New York to London
- Fast degradation (Photolysis)

Auxin Mimic

Active Ingredient Florpyrauxifen-benzyl

Mimics plant growth hormone - causes uncontrolled rapid growth that ultimately kills the plant

- Leaves grow larger and become twisted,
- Stems lengthen,
- Leaf and shoot tissue becomes fragile
- Initial symptoms in hours to days
- Plant death and decomposition within 2-3 weeks.

Plant fragments are not viable.

Applied while plants are growing for efficient product uptake.

Half Life of ProcellaCOR EC		
Aquatic	Aerobic	4 to 6 Days
	Anaerobic	2 Days
Sediment	Aerobic	8 Days
	Anaerobic	3 Days
Metabolites in Sediment	Aerobic	21.5 Days
	Anaerobic	28.9 Days

Toxicity

Fish	Practically NonToxic (Lowest Value Assigned by EPA)
Invertebrates	Slightly Toxic (Second Lowest Value Assigned by EPA)
Birds, Mammals, Amphibians, Reptiles	Practically NonToxic (Lowest Value Assigned by EPA)

US Environmental Protection Agency (2017). Environmental Fate and Ecological Effects Risk Assessment for the Registration of the New Herbicide for the Use on Rice and Aquatics Florpyrauxifen-benzyl (D429728)

ProcellaCOR EC

Maximum Treatment Concentration Allowed by Label for Controlling EWM is 7.72 parts per billion (ppb)

NYSDEC Use Restrictions:

- Drinking Water: No restrictions under 50 ppb. Can and has been used in public drinking supplies
- Swimming / Fishing : No restrictions
- Irrigation & Livestock Watering: Restriction until concentration is <1 ppb

Overview of Regional Treatments

	Number of Treatments	Total Treatment Area	Range of Treatment Area
New York	NYS: ≈ 30 5' in Region 5 2 in Adirondack Park	NYS: Undocumented ADK's: 41 ac	NYS: Undocumented ADK's: 41 ac
Vermont	18 Undertaken	480 ac	4 to 70 ac
New Hampshire	43 Undertaken	990 ac	0.75 to 78

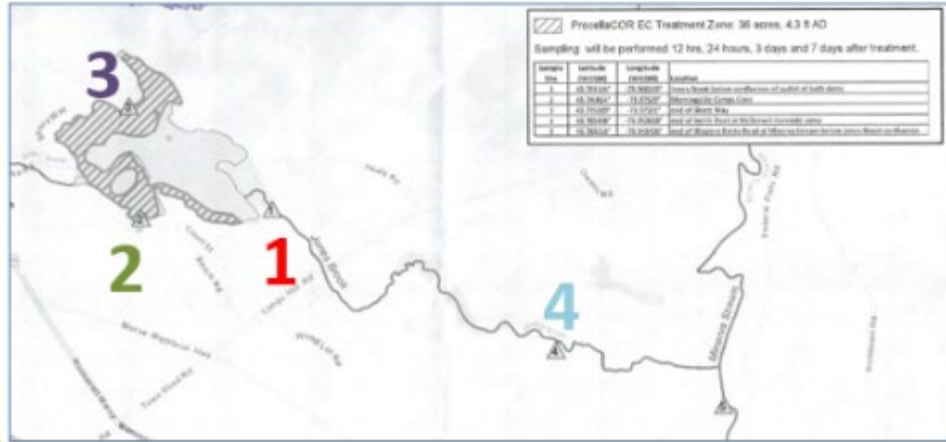
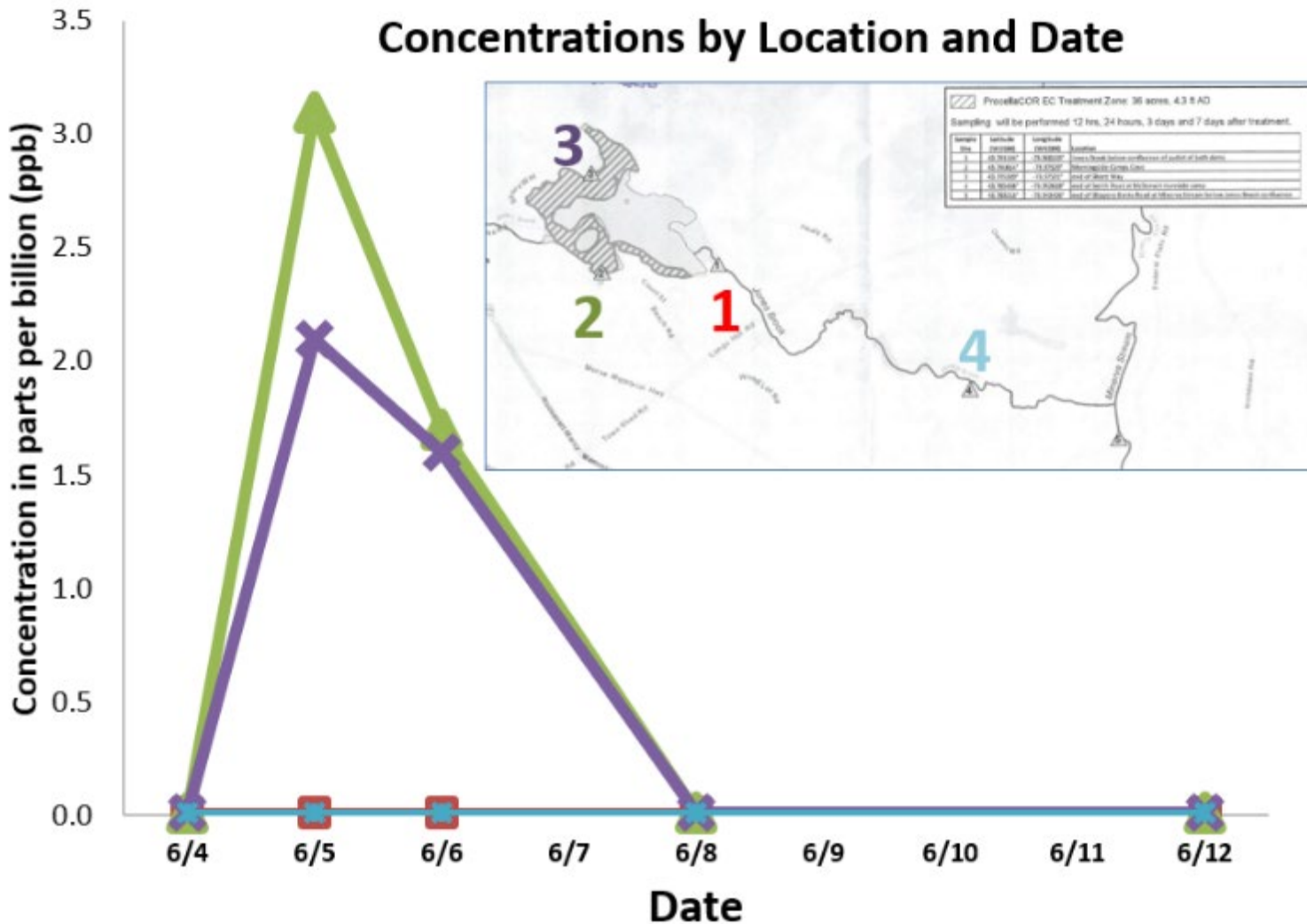
Table 2: 4 Year Change in common species abundance from 2019-2023.

COMMON NAME	SCIENTIFIC NAME	2019	2020	2021	2022	2023	CHANGE
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>	66%	0%	0%	2%	1%	Decrease
Common waterweed	<i>Elodea spp.</i>	60%	63%	74%	71%	24%	Decrease
Flat-stem pondweed	<i>Potamogeton zosteriformis</i>	50%	54%	59%	65%	48%	Decrease
Southern naiad	<i>Najas guadalupensis</i>	41%	60%	10%	68%	46%	Decrease
Macroalgae	<i>Chara/Nitella spp.</i>	38%	48%	23%	24%	16%	Decrease
Thin-leaf pondweed	<i>Potamogeton pusillus</i>	44%	21%	33%	16%	13%	Decrease
Watershield	<i>Brasenia schreberi</i>	37%	26%	20%	21%	11%	Decrease
Bassweed/Large-leaf pondweed	<i>Potamogeton amplifolius</i>	30%	37%	52%	43%	34%	Decrease
Ribbon-leaf pondweed	<i>Potamogeton epihydrus</i>	18%	34%	28%	7%	16%	Increase
Northern naiad (2019) Slender naiad (2020, 2021)	<i>Najas gracilima</i>	17%	9%	2%	0%	0%	No change
Slender naiad (2019) Nodding naiad (2020, 2021)	<i>Najas flexilis</i>	16%	35%	82%	43%	16%	Decrease

June 5, 2020 Treatment of Minerva Lake.

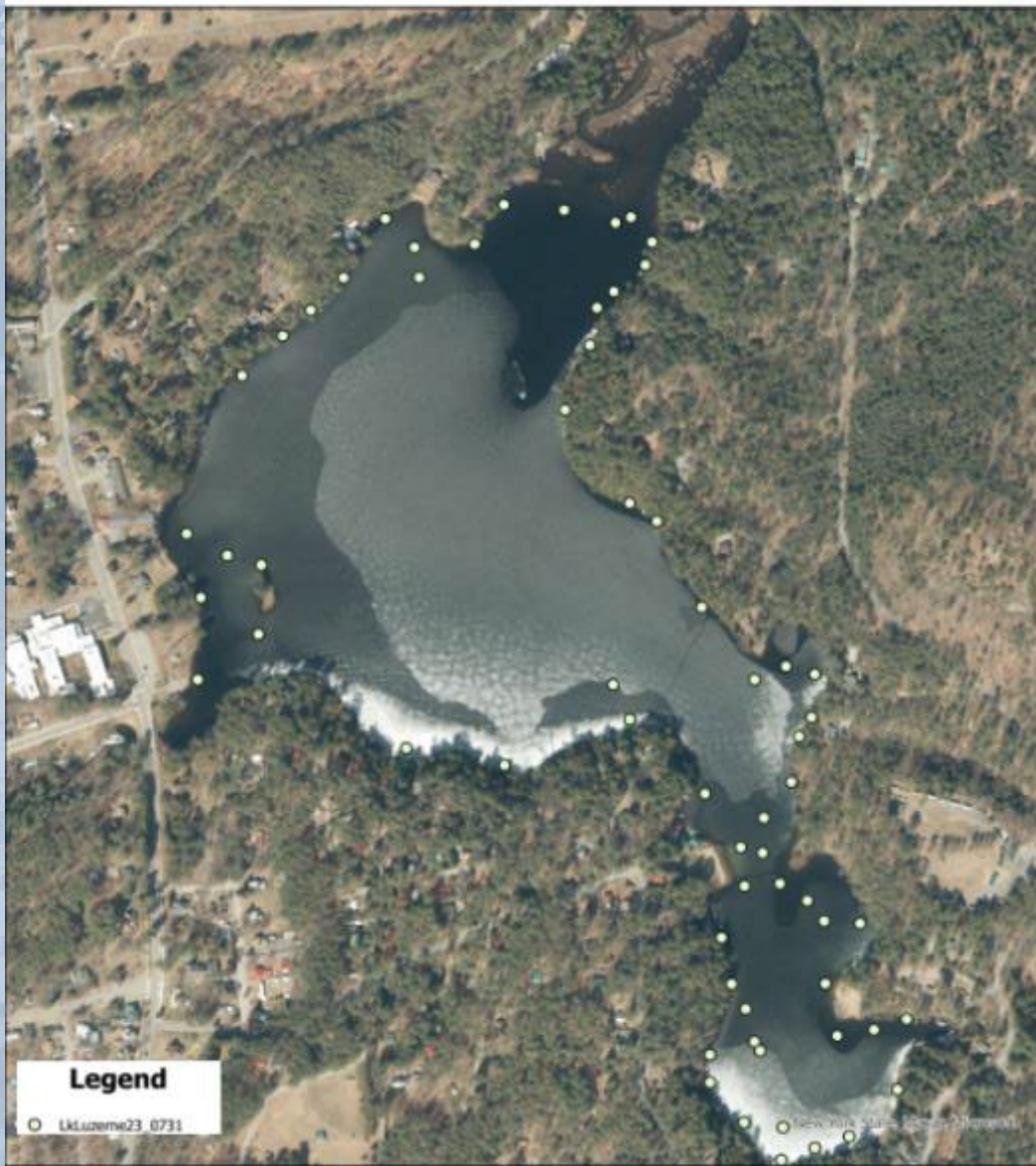
Treatment Concentration 3.82 ppb, non-detectable in 3 Days

Minerva Lake ProcellaCOR EC Treatment Concentrations by Location and Date

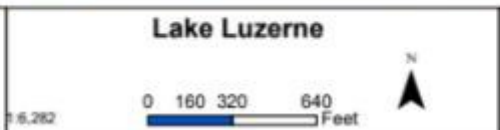


Approved

1, 2023

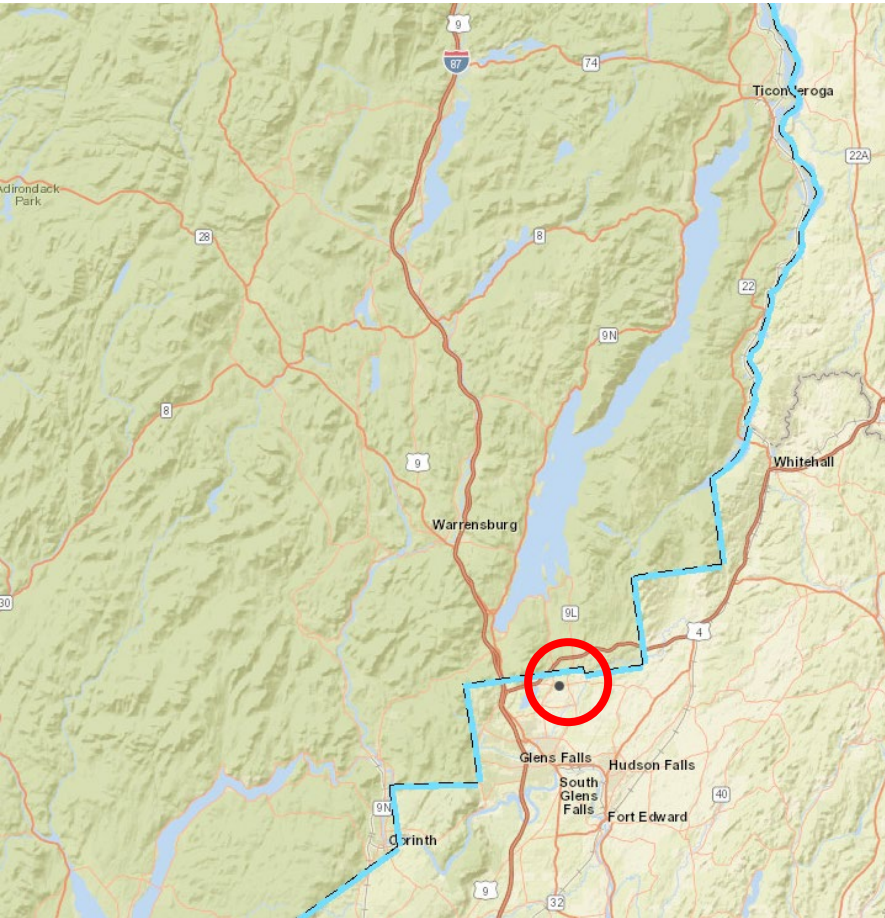


Lake Luzerne
Luzerne, NY



Map Date: 8/10/2023
File: LkLuzerne23_0731
Prepared by: KV
Office: Shrewsbury, MA

Lake Sunnyside: Aquatic Filming



Pre-Treatment

<https://www.youtube.com/watch?v=U4LjBYqyDj0>

Post-Treatment

<https://www.youtube.com/watch?v=E5TTwrahyd4>