



# ProcellaCOR Overview for Fairlain Lake Community Association

Mark A. Heilman, Ph.D.

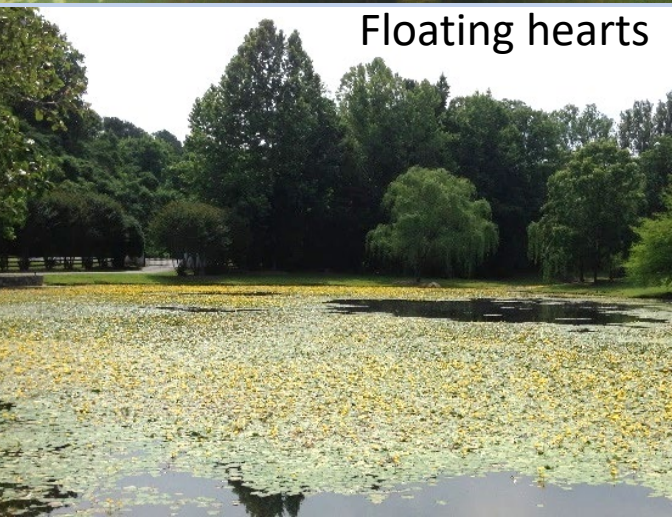
Director of Aquatic Technology

SePRO - Carmel, Indiana USA





# ProcellaCOR (a.i., florpyrauxifen-benzyl)



Hydrilla

Invasive watermilfoils

Floating hearts

- **High selective, short-exposure (hrs to days) systemic activity** on multiple major North American invasive aquatic weeds
- **United States EPA approval in late February 2018**
- **USEPA Reduced Risk Classification and ACS/EPA Green Chemistry Award**
  - **100X or greater reduction in use rates** versus older herbicides
  - **Excellent environmental profile**
- **Full aquatic registration by Health Canada PMRA in May 2023**
  - **ProcellaCOR FX is Canadian-registered formulation**





# Past published science

- **Past collaborative development at all scales**

- **Screening of target and non-target aquatic plants** (Netherland and Richardson 2016, Richardson et al. 2016, Haug 2018)
- **Aquarium / small tank systems** (Richardson et al. 2016, Corps Aquatic Plant Control Research Program )
- **Large mesocosm systems** (Beets and Netherland 2018, Beets et al. 2019)
- **Initial field demonstrations** (e.g., Sperry et al. 2020)
- **Specialized aquatic ecotoxicology** (Buzcek et al. 2020 - mussels, Crosson et al. (in prep) - salmon)





# Selective Milfoil Control @ 1 MAT



Untreated



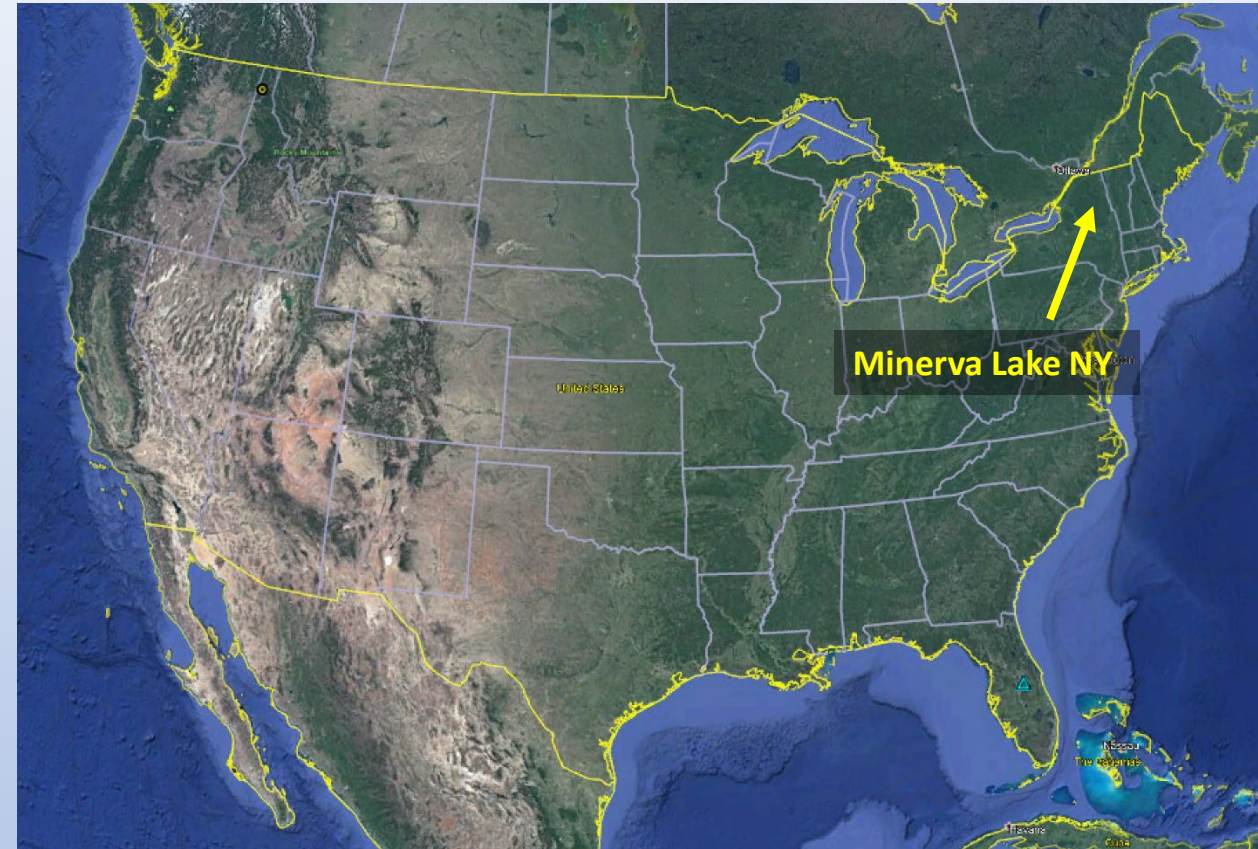
4 weeks after short exposure (6h) of ProcellaCOR



# Past US Management Examples: Eurasian watermilfoil

Hundreds of US projects and associated quantitative assessments confirm efficacy and selectivity of Eurasian watermilfoil control.

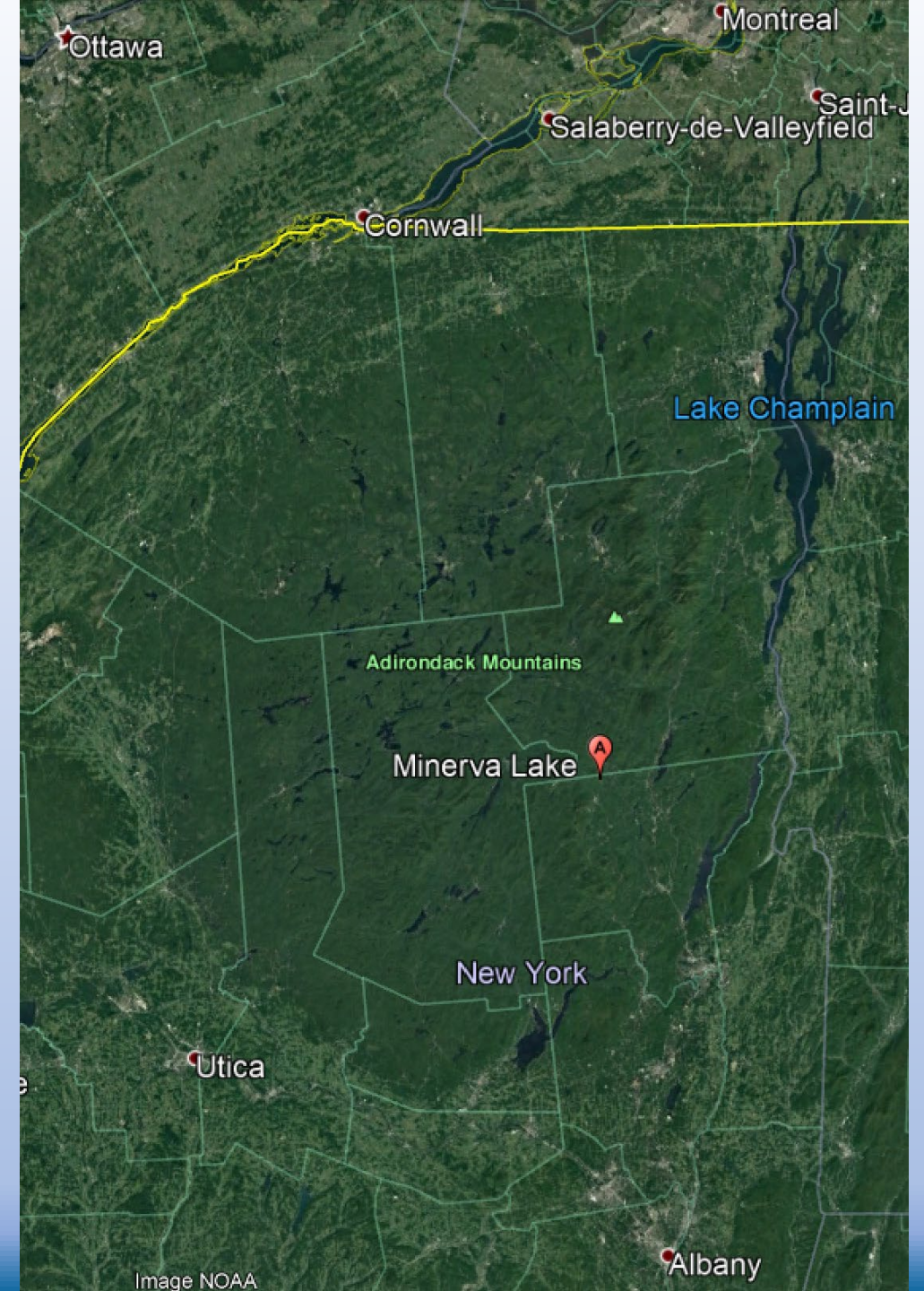
- Highlighted project:
  - **Minerva Lake, NY**





# Minerva Lake NY

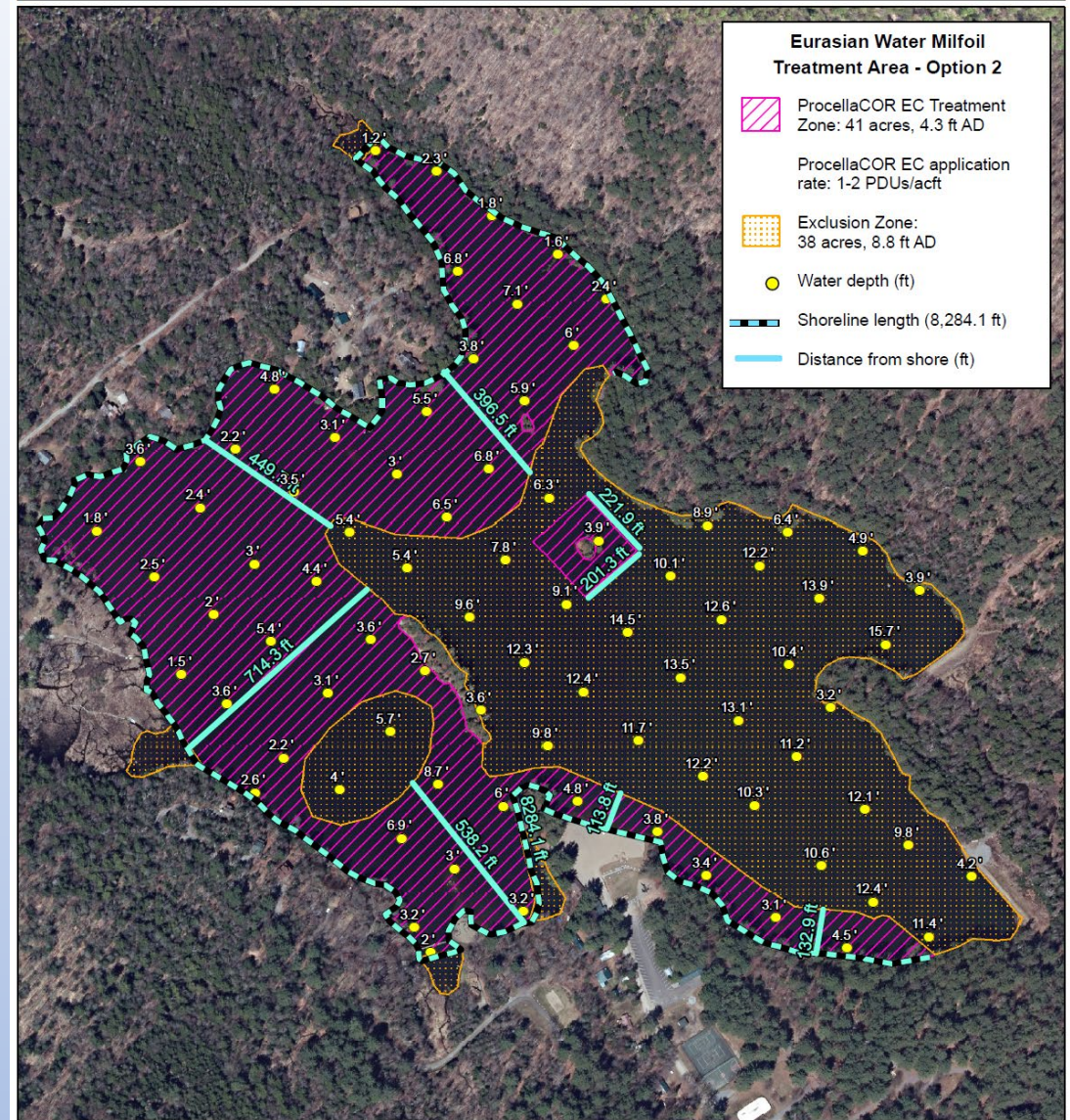
- Located in Adirondacks
  - sensitive sites with oversight by the Adirondack Park Agency (APA)
- EWM found in 2007 and managed with aggressive hand harvesting and DASH
  - 400-500 hours of DASH annually in recent years
- ProcellaCOR used in 2020 to selectively control EWM at scale and allow more efficient diver removal in future integrated efforts.





# Minerva Lake NY

- 41 acres out of 79-acre lake treated June 5, 2020 with ProcellaCOR
- Lake with 66% littoral FOO of EWM in late summer 2019 survey.
- ProcellaCOR dissipated (<1 ppb ai) by 24 hours post treatment



MINERVA LAKE  
Minerva Lake Rd  
Minerva, New York  
[Essex County]

43.793°, -73.975°

MINERVA LAKE

79 acres, 6.3 ft AD



0 250 500  
Feet



# Minerva Lake NY

- No EWM detected in August 2020 (YOT) post-treatment survey...or August 2021 survey (YAT)
- Excellent post-treatment native plant abundance
  - species richness = 4.7 (species per site)
- Most sensitive non-target plant was watershield.
- Assessment data courtesy of SOLitude Lake Management

## Frequency of Occurrence

Summer Prior to Treatment  
August 30, 2019

	Total	
	Sites	%
Total Sites	82	
Overall Abundance	81	99%
Eurasian Watermilfoil	54	66%
Common Waterweed	49	60%
Flatstem Pondweed	41	50%
Berchtold's Pondweed	36	44%
Southern Naiad	34	41%
Macroalgae	31	38%
Watershield	30	37%
Large-leaf Pondweed	25	30%
Ribbon-leaf Pondweed	15	18%
Northern Naiad	14	17%
Slender Naiad	13	16%
Yellow Waterlily	13	16%
White Waterlily	10	12%
Small Pondweed	7	9%
Alpine Pondweed	4	5%
Sago Pondweed	3	4%
Water Stargrass	3	4%
Creeping Bladderwort	2	2%
Robbin's Pondweed	2	2%
Small Duckweed	2	2%
Greater Duckweed	2	2%
Common Bladderwort	2	2%
Benthic Filamentous Algae	2	2%
Floating-leaf Pondweed	1	1%
Flat-leaf Bladderwort	1	1%
Quillwort	1	1%
Spikerush	1	1%

2 months after ProcellaCOR  
August 6, 2020

	Total	
	Sites	%
Total Sites	82	
Overall Abundance	82	100%
Common waterweed	52	63%
Southern Naiad	49	60%
Flatstem Pondweed	44	54%
Macroalgae	39	48%
Large-leaf Pondweed	30	37%
Northern Naiad	29	35%
Ribbon-leaf Pondweed	28	34%
Watershield	21	26%
White Waterlily	15	18%
Yellow Waterlily	12	15%
Small Pondweed	10	12%
Slender Naiad	7	9%
Floating-leaf Pondweed	6	7%
Variable Pondweed	3	4%
Sago Pondweed	2	2%
Brittle Naiad	2	2%
Benthic Filamentous Algae	2	2%
Alpine Pondweed	1	1%
Greater Duckweed	1	1%
Quillwort	1	1%
Eurasian Watermilfoil	0	0%
Humped Bladderwort	0	0%
Robbin's Pondweed	0	0%
Greater Duckweed	0	0%
Common Bladderwort	0	0%
Spikerush	0	0%
Water Stargrass	0	0%



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Brittle Naiad	2	2%
Benthic Filamentous Alga	2	2%
Alpine Pondweed	1	1%
Greater Duckweed	1	1%
Quillwort	1	1%
Eurasian Watermilfoil	0	0%
Humped Bladderwort	0	0%
Robbin's Pondweed	0	0%
Greater Duckweed	0	0%
Common Bladderwort	0	0%
Spikerush	0	0%
Water Stargrass	0	0%

14 months after ProcellaCOR  
August 11, 2021

	Total	
	Sites	%
Total Sites	82	
Overall Abundance	82	100%
Northern naiad	66	80%
Common waterweed	61	74%
Flatstem pondweed	47	57%
Large-leaf pondweed	43	52%
Berchtold's pondweed	26	32%
Ribbon-leaf pondweed	23	28%
Small pondweed	23	28%
Macroalgae	19	23%
White waterlily	17	21%
Watershield	16	20%
Yellow waterlily	13	16%
Southern naiad	8	10%
Sago pondweed	6	7%
Floating-leaf pondweed	5	6%
Brittle naiad	5	6%
Variable-leaf pondweed	3	4%
Sparganium sp.	3	4%
Slender naiad	2	2%
Alpine pondweed	2	2%
Robbins pondweed	1	1%
Giant duckweed	1	1%
Bladderwort sp?	1	1%
Blunt-leaved pondweed?	1	1%
Eurasian watermilfoil	0	0%



# Farlain Lake treatment with ProcellaCOR

- Small, localized management zones relative to known, scattered distribution of EWM
- Treatment by SOLitude Lake Management currently planned for Wed Sept 6
- Water uses after treatment per Health Canada label
  - provincial permit still pending but should be identical
  - No label restrictions on swimming, fishing, potable uses etc.
  - Irrigation restriction is 1 day based on scale of treatment in lake (no restriction on just irrigating turfgrass)
- EWM injury will progress over several weeks...
  - Some natural senescence of tolerant native plants may occur.





7 DAT



EWM



Naiad



Illinois Pondweed

14 DAT



EWM (Dead)



Naiad



Illinois  
Pondweed



Sago  
Pondweed







# Farlain Lake treatment with ProcellaCOR

- Control objectives
  - Eliminate EWM completely from the lake
  - Three-year guaranteed control program to push for eradication (only first year is currently permitted)
  - Future management will be aligned with detailed surveys of the aquatic plant community
- Thanks to FLCA leadership and the community for the sustained interest and partnership
  - Elizabeth, Dale, Kelli, Brian, (Tom H)
  - And a special thanks to Pete Andrews





Questions?

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