

Unified Lower Eagle River Chain of Lakes Commission

Eagle River Chain of Lakes EWM Management Project *Informational Meeting*

November 15, 2023



Eddie Heath
Onterra LLC
Lake Management Planning

Unified Lower Eagle River Chain of Lakes
Commission 

Presentation Outline

- Project Overview
- EWM Population in the ERC
 - Lake-Specific Survey Results
 - Chain-Wide Survey Results
- 2024 Strategy Development Discussion
- Future Management Planning
- New Trends in EWM Mgmt. BMPs
- Concluding Comments



Project Overview

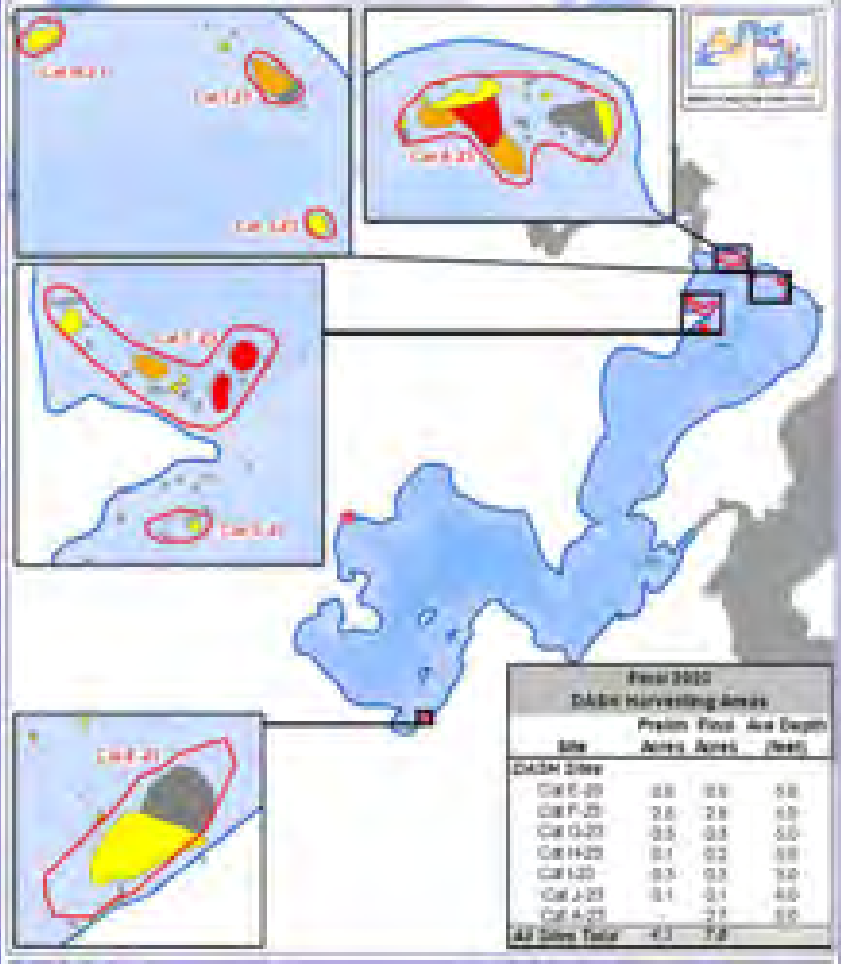
- Coordinated EWM monitoring & management
 - 2007-current w/ Onterra (8 WDNR Grants)
 - ULERCLC-sponsored
 - Involvement with WDNR/USACE research
- Comprehensive Management Plan – Final Dec 2019
 - 4 phases/WDNR grants (2013-2017)
 - ERCLA-sponsored
- February 2020 WDNR AIS Grant Award (65%)
 - Originally for 3 yrs of monitoring & hand-harvesting (2020-2022), extend through 2023, working towards extending with 2024 with cost amendment.
 - Chain-wide point-intercept surveys (2022, 5yr interval)
 - New grant program (NR193) instituted after this award

ERC's Evolved IPM Strategy

- **EWM populations have been greatly reduced**
 - Remnant areas too small to effectively controlled using herbicides
 - Most colonies below levels that cause ecological impacts or cause impacts to navigation or recreation
 - Herbicide Treatment Trigger:
 - colonized EWM of *dominant* or greater density, with preference to high-use areas, that have a high likelihood of the treatment being effective (factors discussed in previous slide on spot treatment BMPs)
 - ✓ No areas met this threshold since 2014 (spring 2015 treatment)
- **Maintain positive strides through hand-harvesting**
 - Need to balance a level of EWM population tolerance while not allowing population to return to pre-management levels

2023 Hand-Harvesting Plan

- Primary Strategy (7.0 acres)
- Educate and encourage riparians on legal EWM removal



Final 2023 DABM Harvesting Areas			
Site	Pre-Harvest Acres	Post-Harvest Acres	Ave Depth (feet)
DABM Sites			
Cat E-20	0.8	0.8	5.8
Cat F-20	2.8	2.8	6.0
Cat G-20	0.5	0.5	5.0
Cat H-20	0.1	0.2	6.8
Cat I-20	0.3	0.3	7.0
Cat J-20	0.1	0.1	4.0
Cat A-23	-	2.1	0.0
All Sites Total	4.6	7.6	

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***2023 Late-Season
EWM Survey Results***

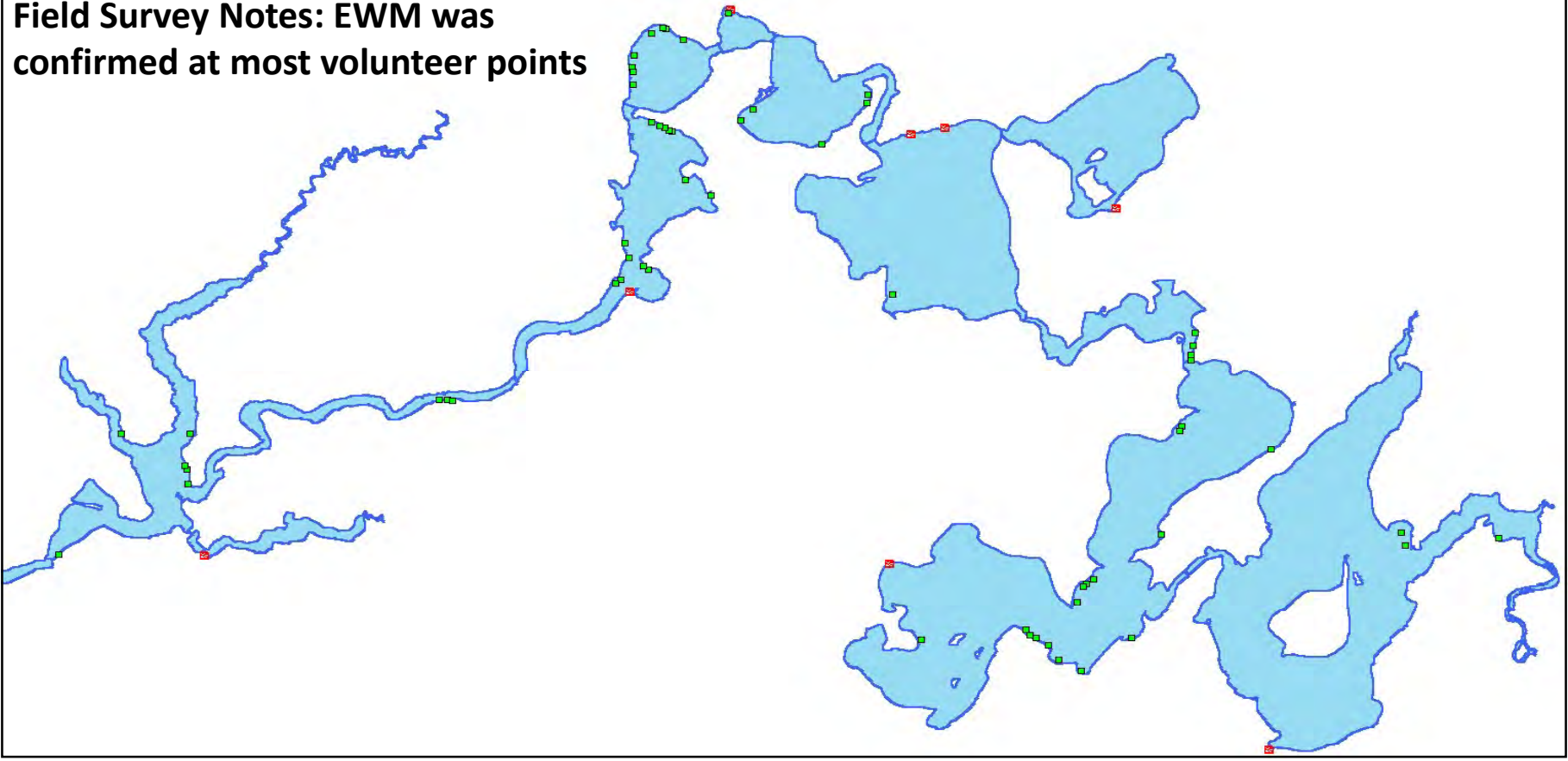
Current EWM Mapping Program

- Onterra surveys entire littoral zone of ERC in late-June/early-July (ESAIS Survey)
- Data are loaded onto dedicated GPS units
- Volunteers mark all EWM occurrences outside of where found during ESAIS
- Onterra conducts Late-Season EWM Mapping Survey (aka EWM Peak-Biomass Survey) visiting
 - All EWM locations mapped during ESAIS Survey
 - All current and previous years' management areas
 - All areas identified through volunteer surveillance

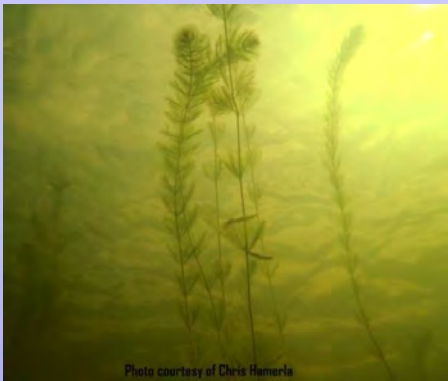


Volunteer EWM Survey Findings

Field Survey Notes: EWM was confirmed at most volunteer points

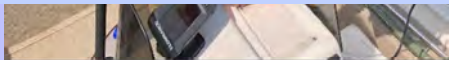


Professional EWM Mapping



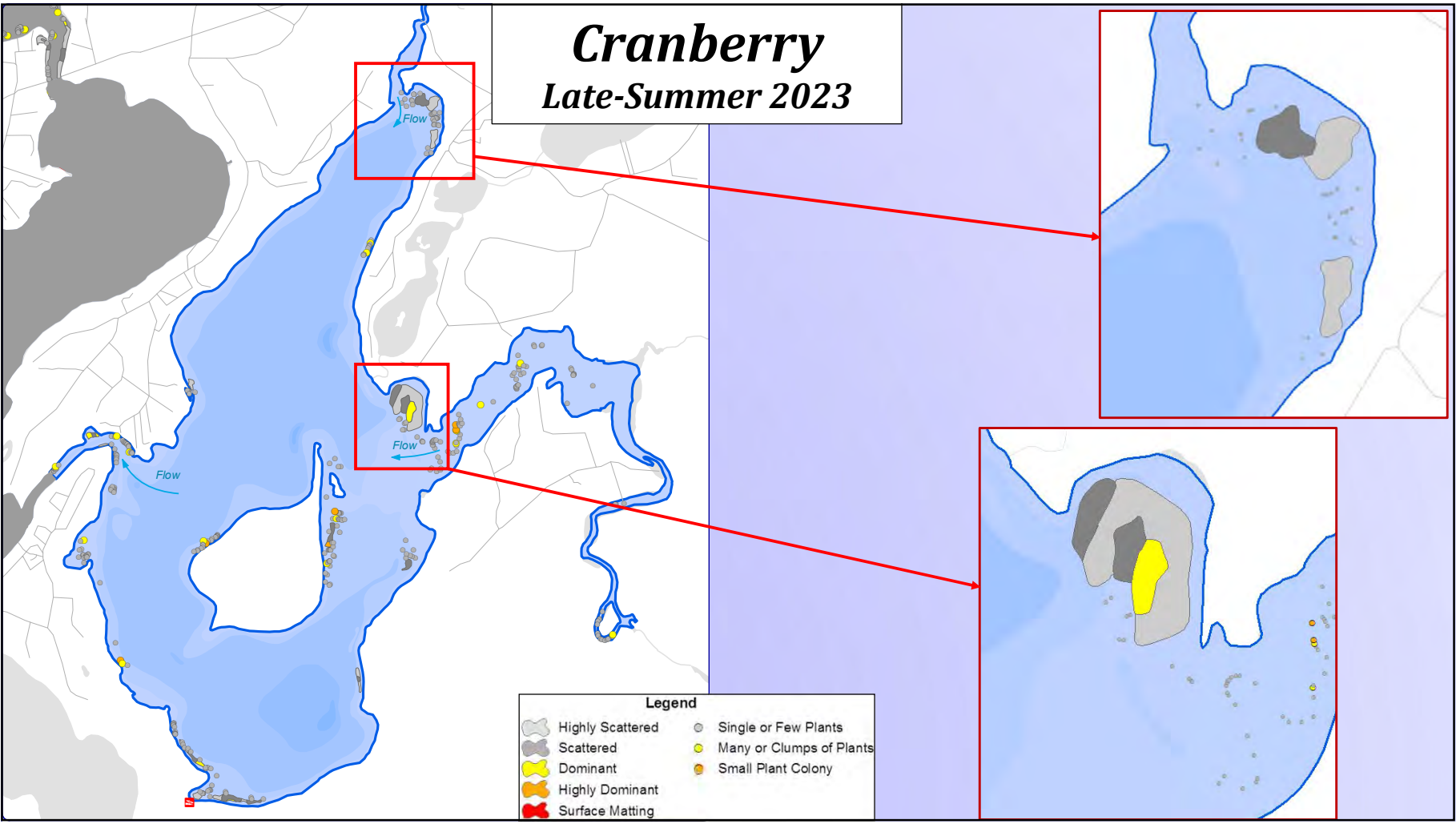
Point-Based Mapping

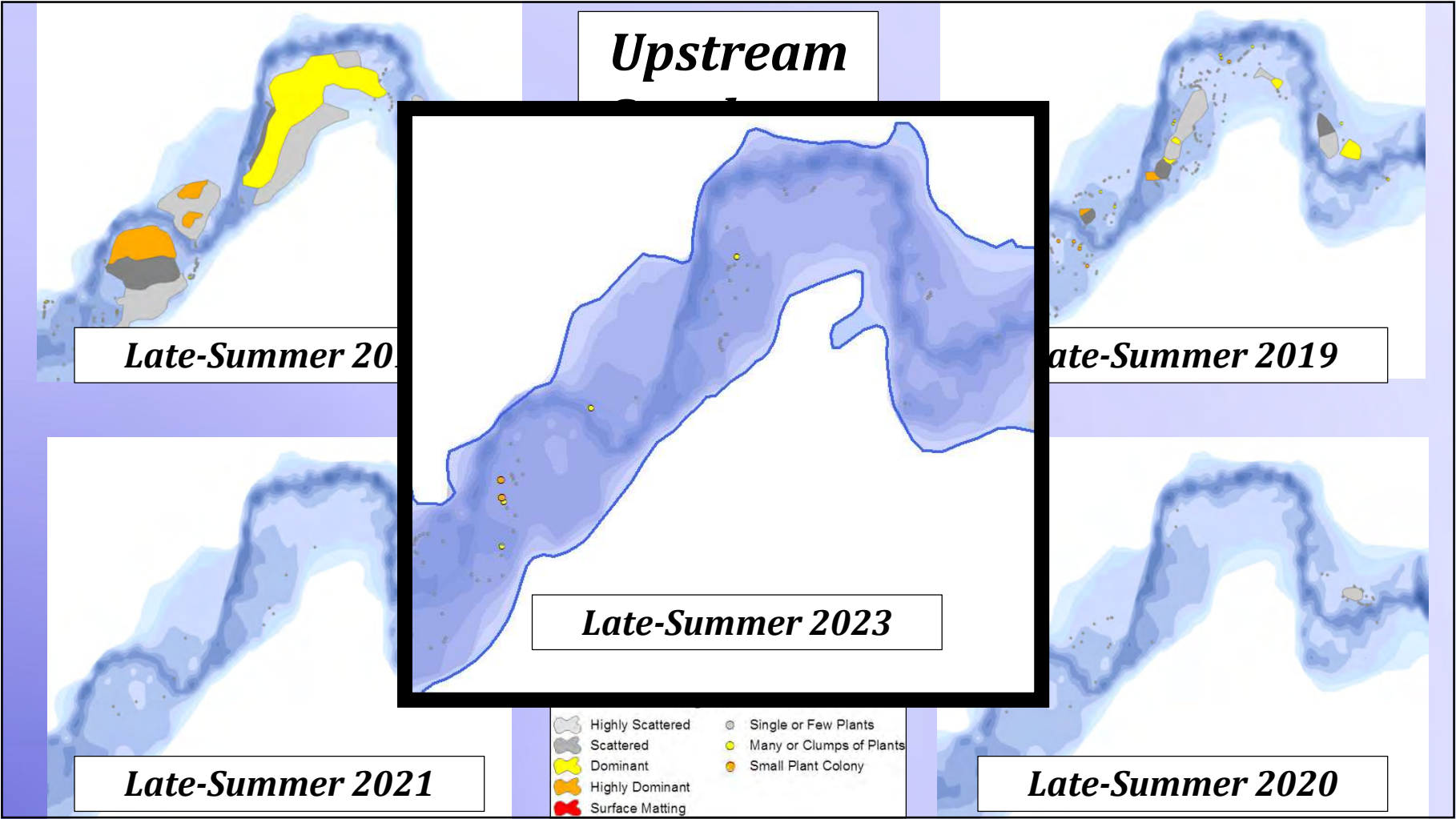
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

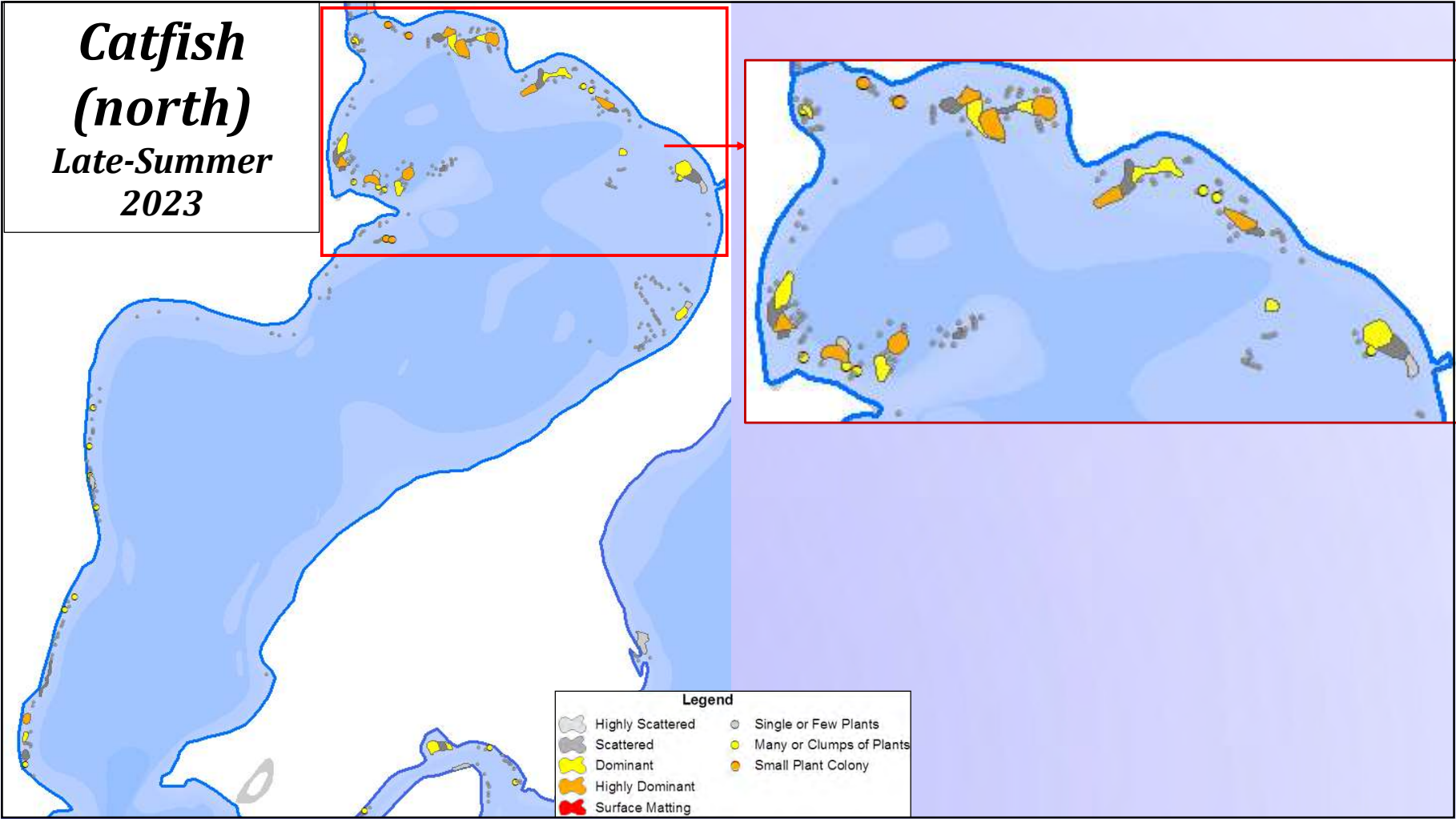


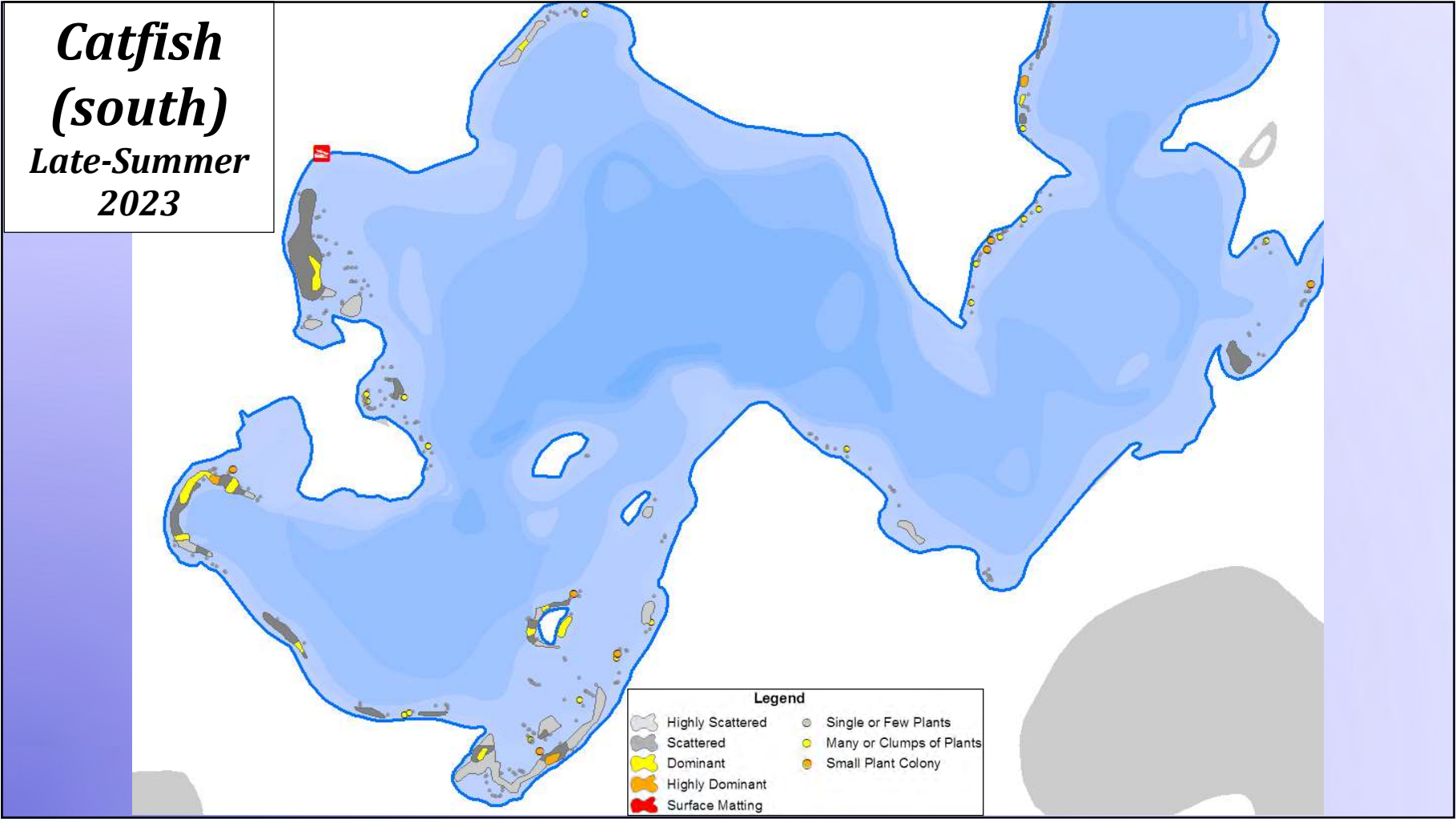
Polygon-Based Mapping

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting









Catfish A-23
Early-Summer 2023

Catfish A-23
Late-Summer 2023

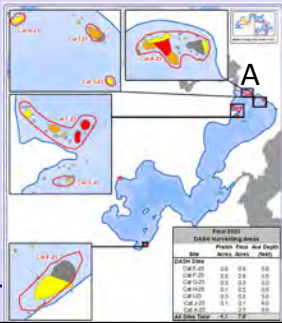
DASH Aquatic Services, LLC

A-23 (2.7 acres)
6.5 Days Harvest
= 2,080 pounds
Focused on
surface matted
area

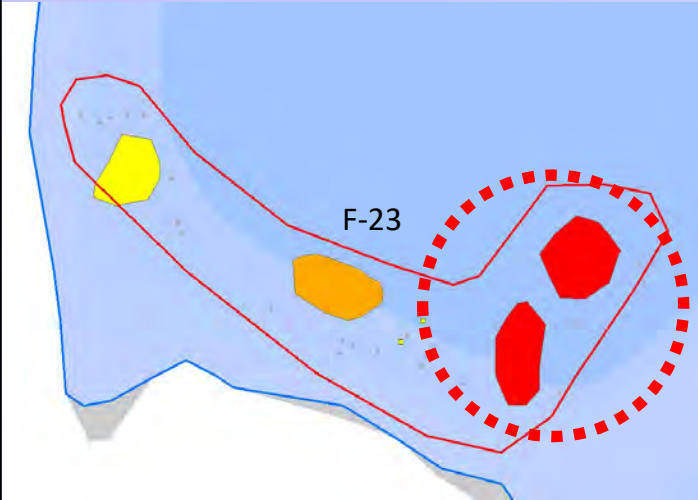


Legend

Highly Scattered	Single or Few Plants
Scattered	Many or Clumps of Plants
Dominant	Small Plant Colony
Highly Dominant	
Surface Matting	



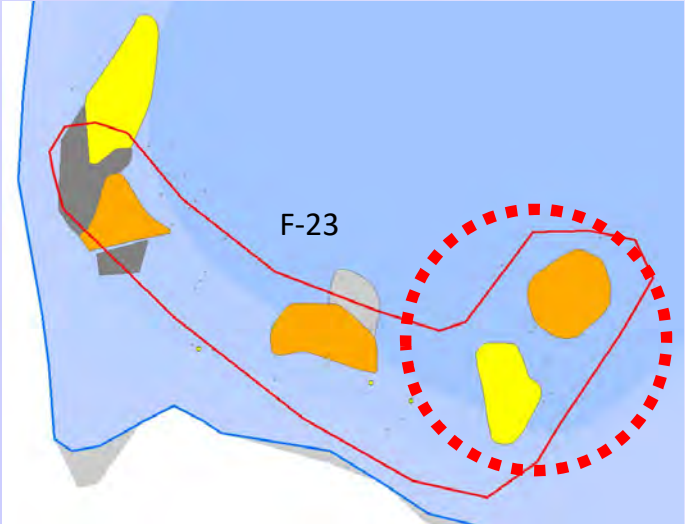
Catfish F-23
Early-Summer 2023



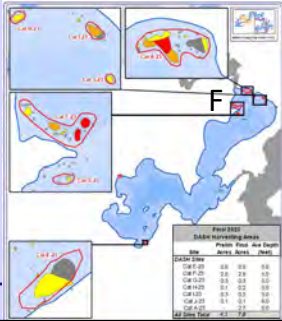
DASH Aquatic
Services, LLC

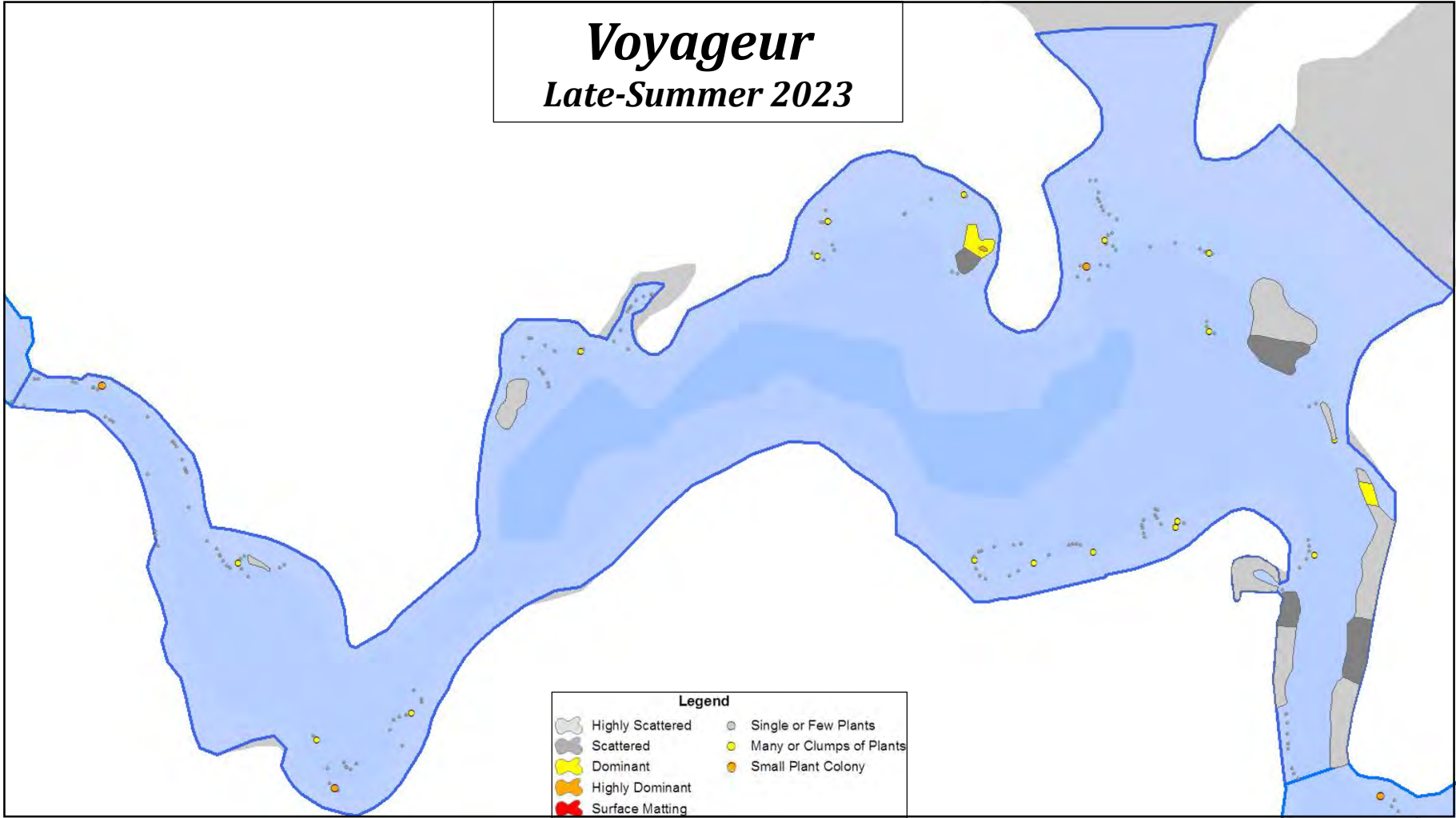
F-23 (2.8 acres)
4 Days Harvest =
1,368 pounds
Focused on
surface matted
areas

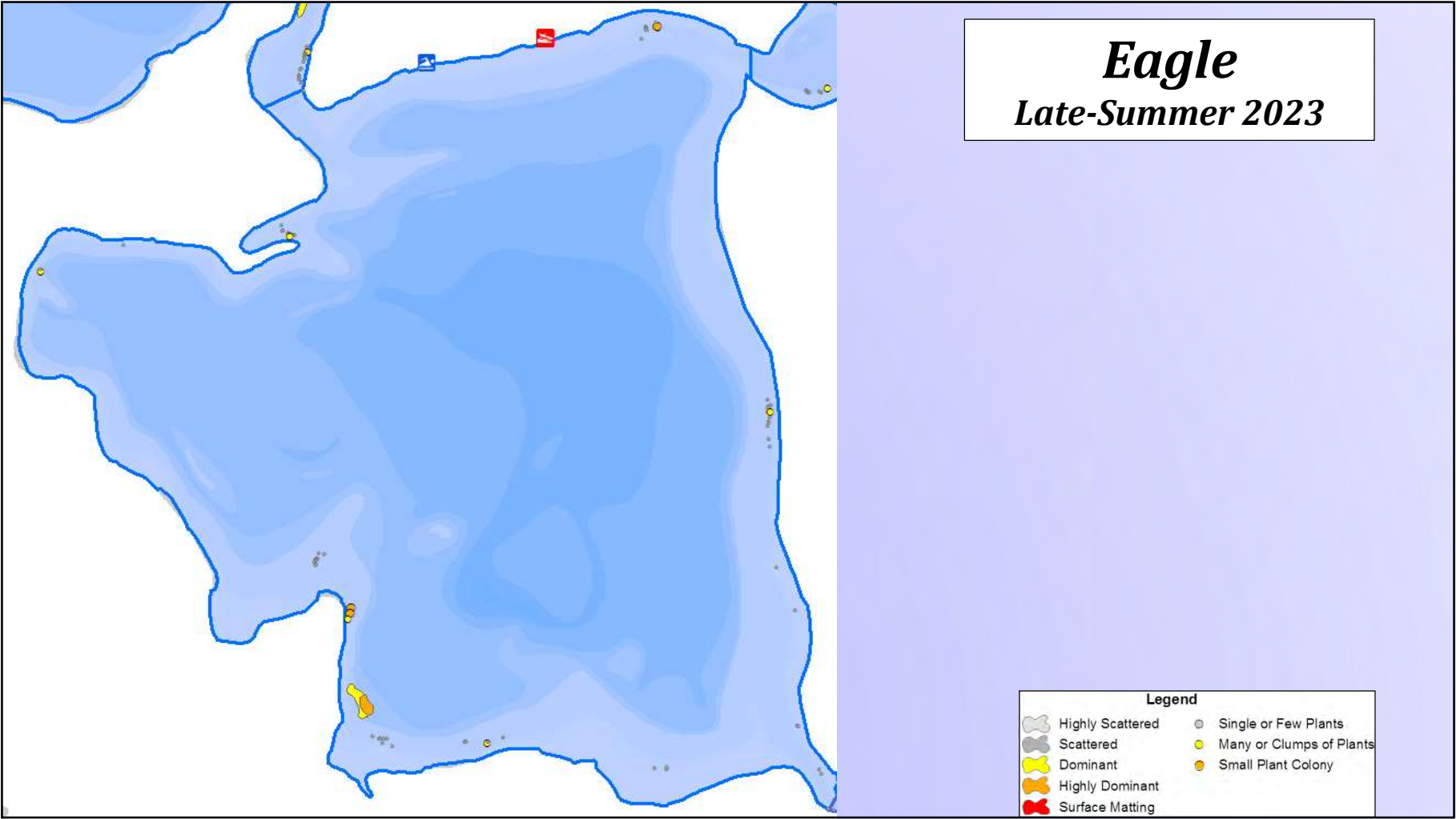
Catfish F-23
Late-Summer 2023

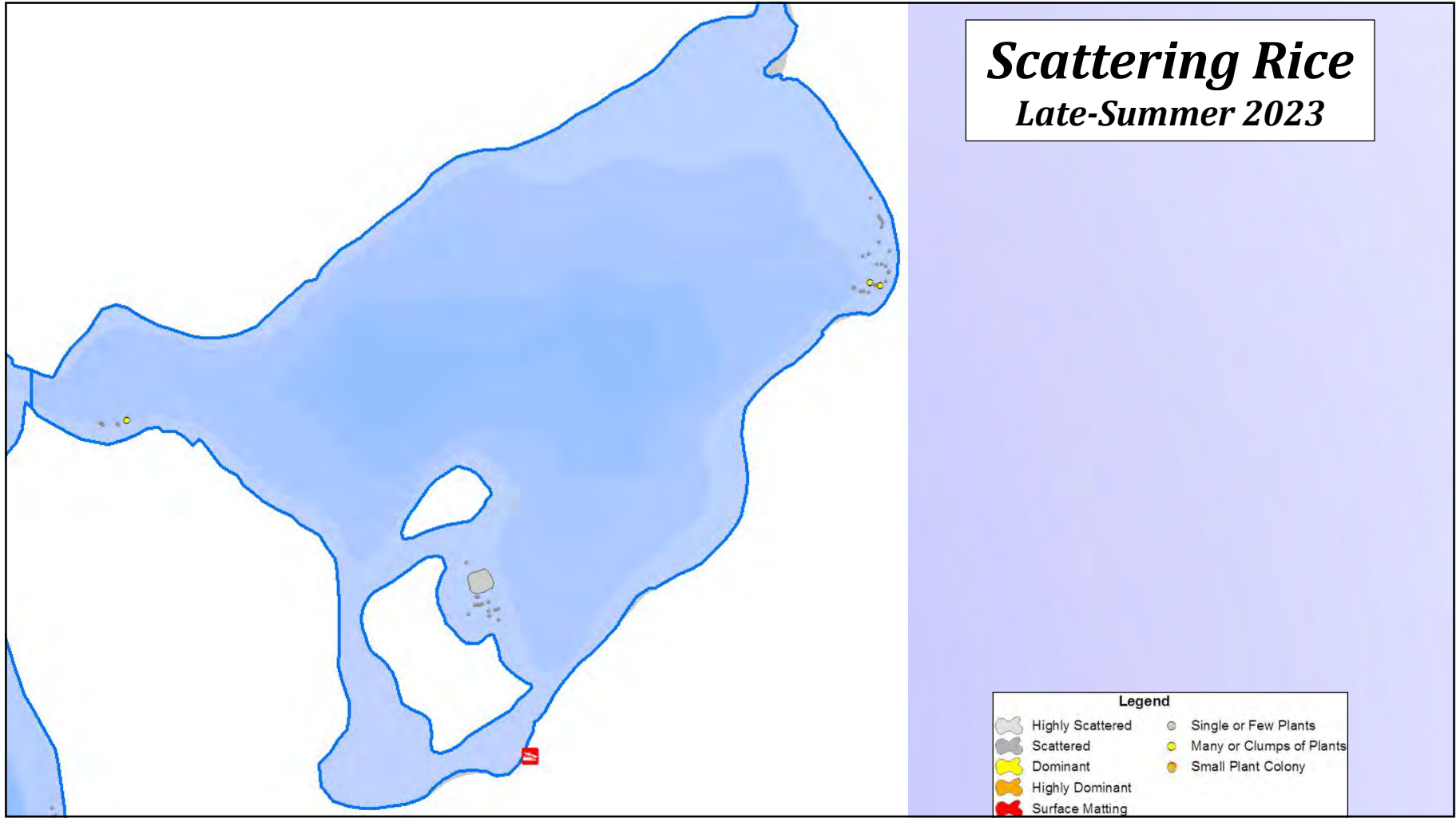


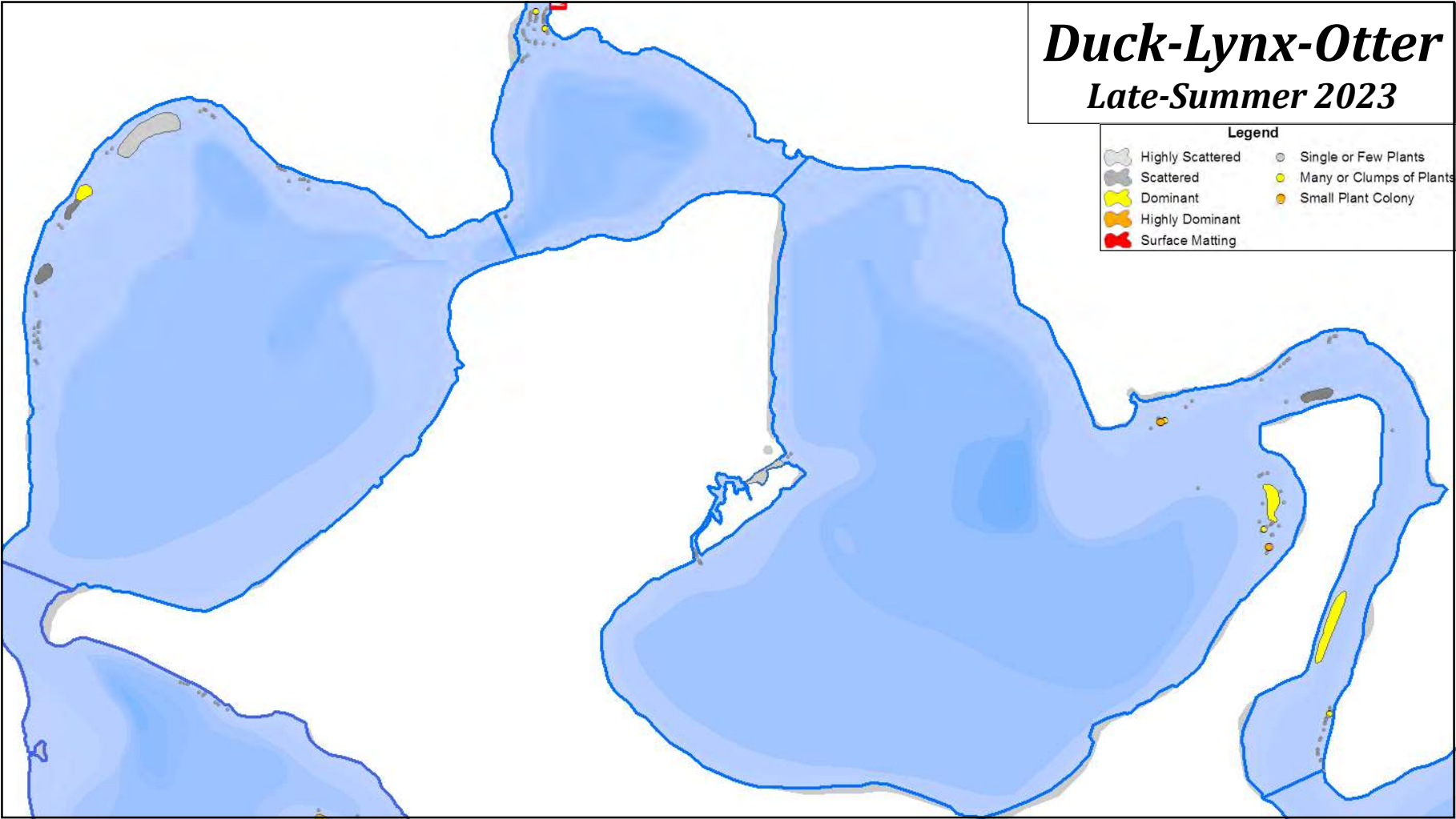
Legend	
	Highly Scattered
	Scattered
	Dominant
	Highly Dominant
	Surface Matting
	Single or Few Plants
	Many or Clumps of Plants
	Small Plant Colony

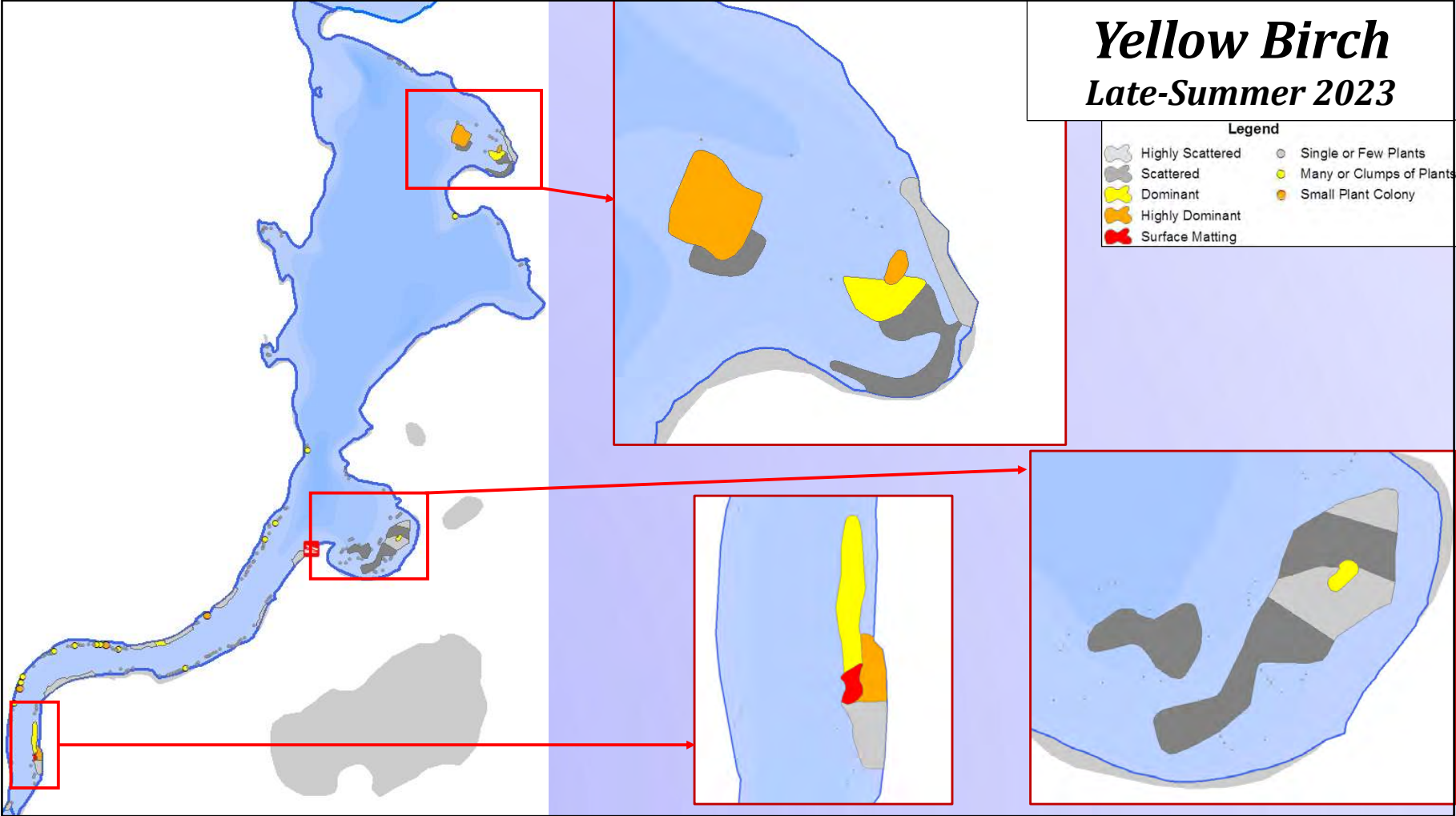




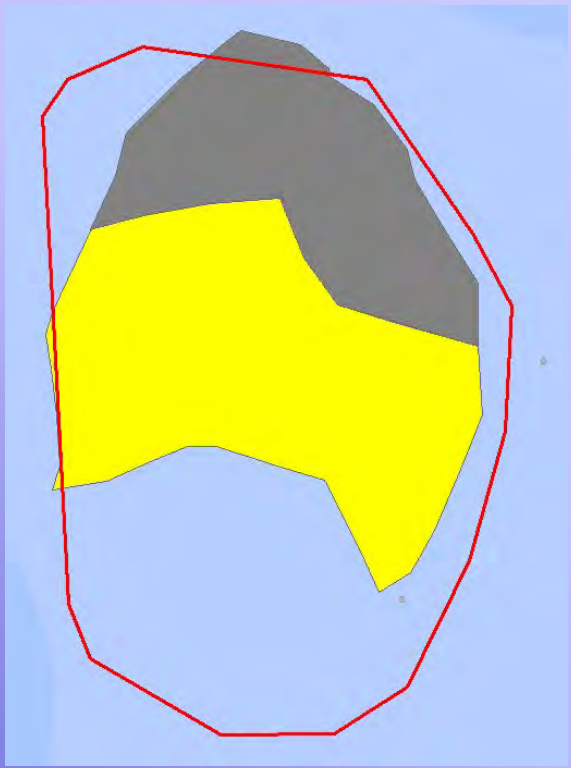




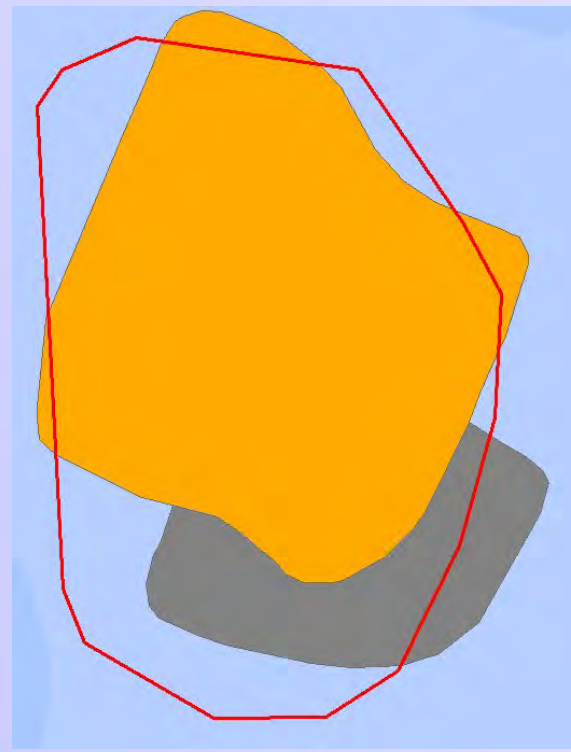




Yellow Birch B-23
Early-Summer 2023



Yellow Birch B-23
Late-Summer 2023



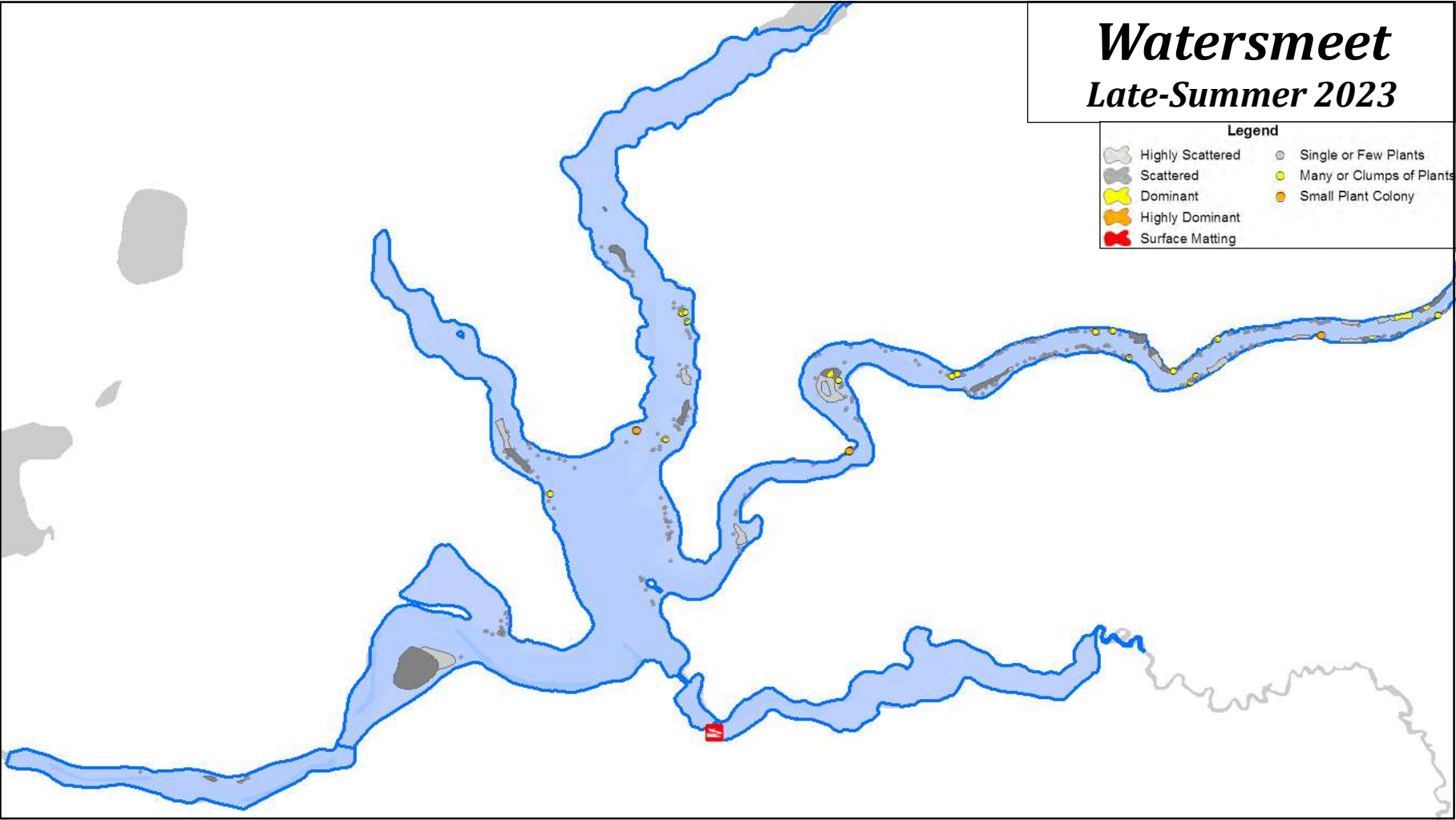
DASH Aquatic
Services, LLC

B-23 (1.1 acres)
3 Days Harvest =
852 pounds

Legend	
	Highly Scattered
	Scattered
	Dominant
	Highly Dominant
	Surface Matting
	Single or Few Plants
	Many or Clumps of Plants
	Small Plant Colony

Watersmeet
Late-Summer 2023

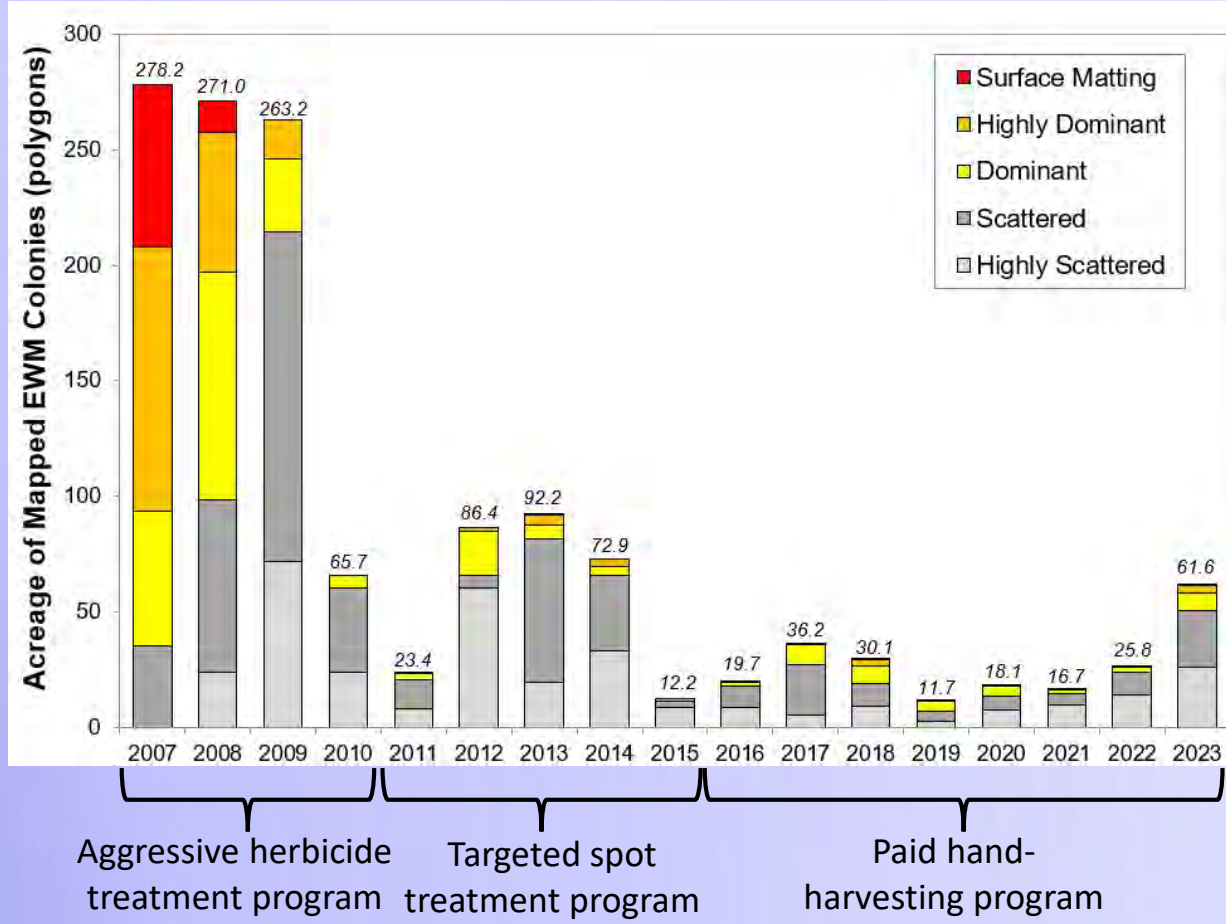
Legend	
	Highly Scattered
	Scattered
	Dominant
	Highly Dominant
	Surface Matting
	Single or Few Plants
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EWM population is currently low

1. Result of management

Chain-Wide Results

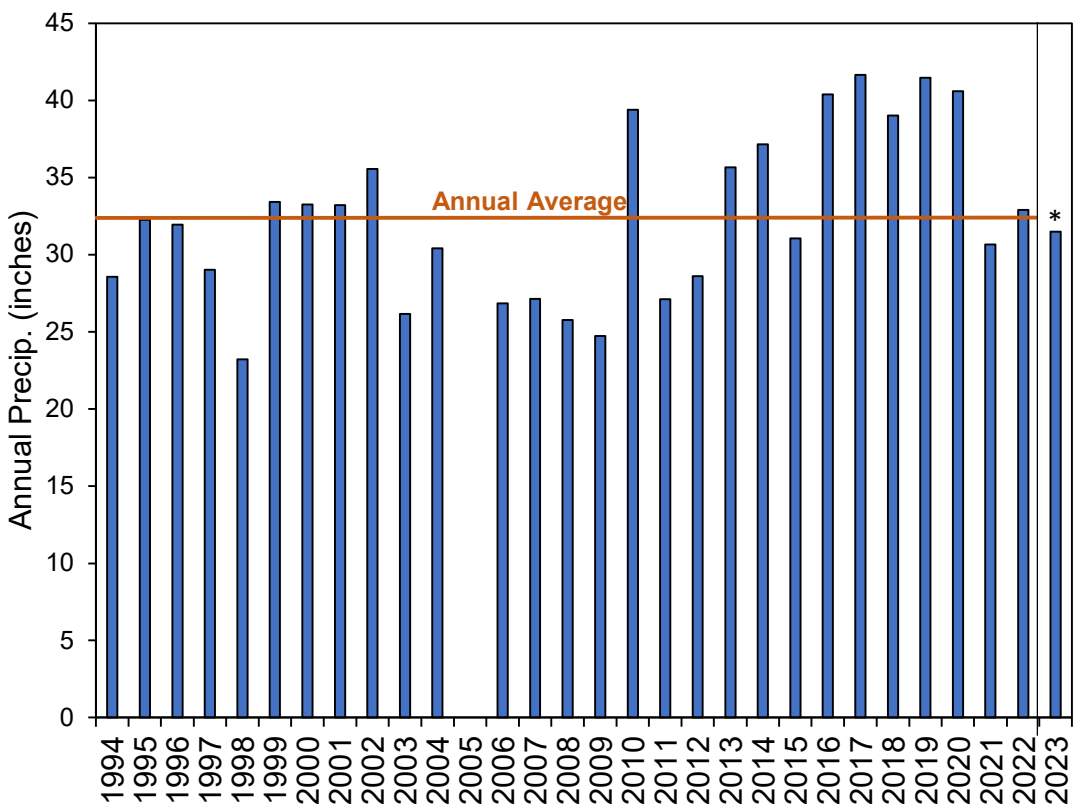


Chain-Wide Results

EWM populations is currently low

- 1. Result of management
- 2. Reduced water clarity

Increased environmental stress from low water clarity results in management being more effective and population rebound more difficult

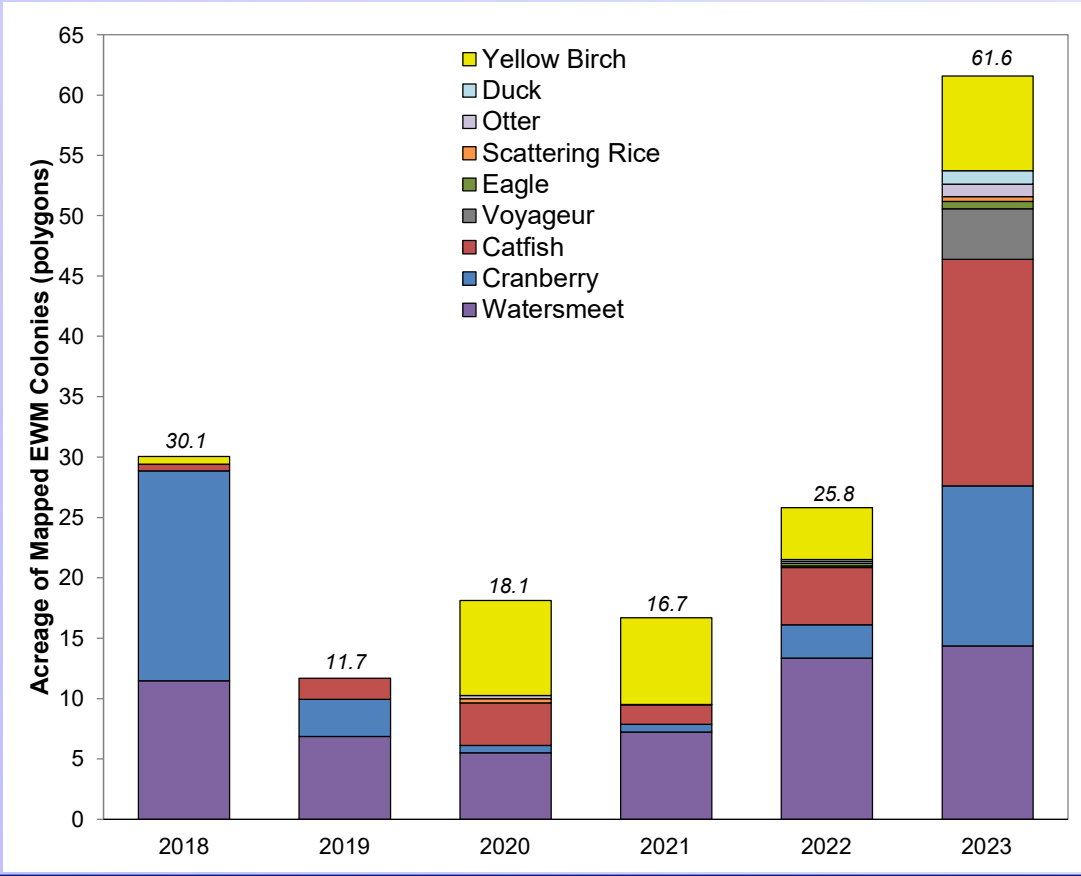


*Excluding December and partial November precipitation

Since Herbicide Management Ceased

- Cranberry Channel spring 2015 treatment
- Professional hand-harvesting program
 - 2016: Voyageur
 - 2017: Voy, ScatRice, Wat
 - 2018: YBL, ScatRice, Wat
 - 2019: ScatRice, YBL, Wat
 - 2020: Cran, Cat, Voy
 - 2021: Cran, Cat, YBL
 - 2022: Cran, Cat, YBL, Wat
 - 2023: Cat, YBL, Wat

Chain-Wide Results

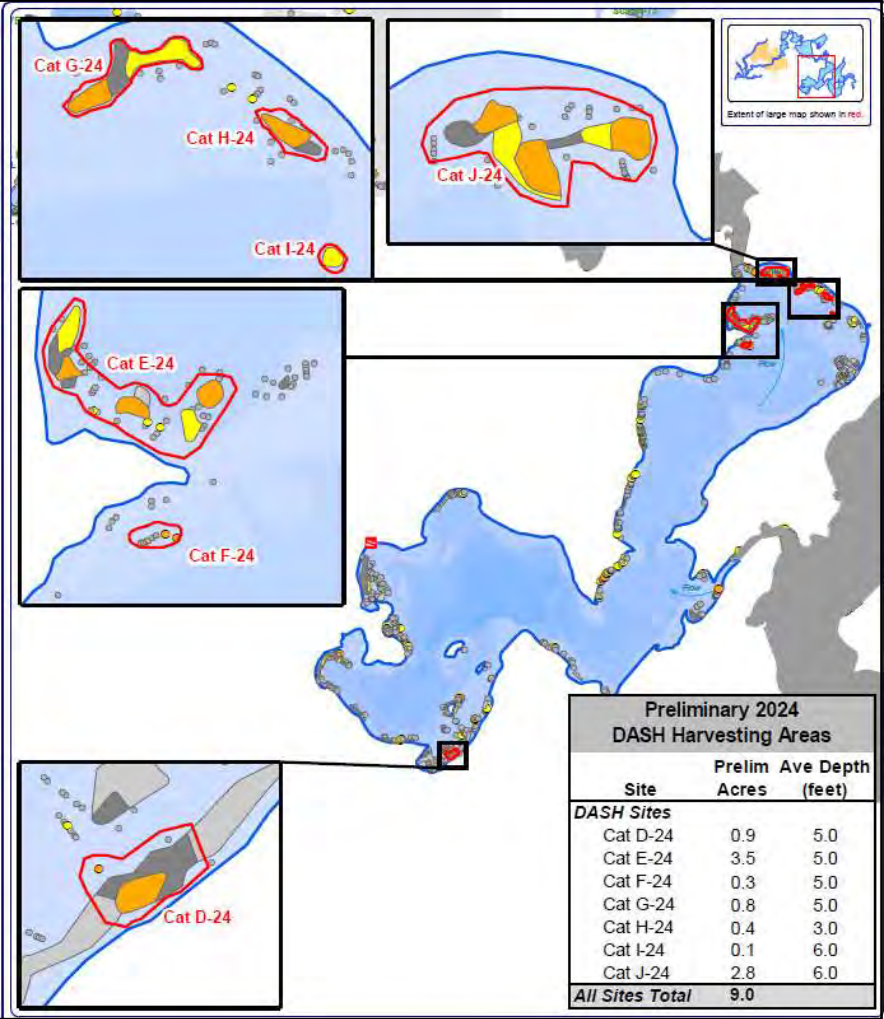


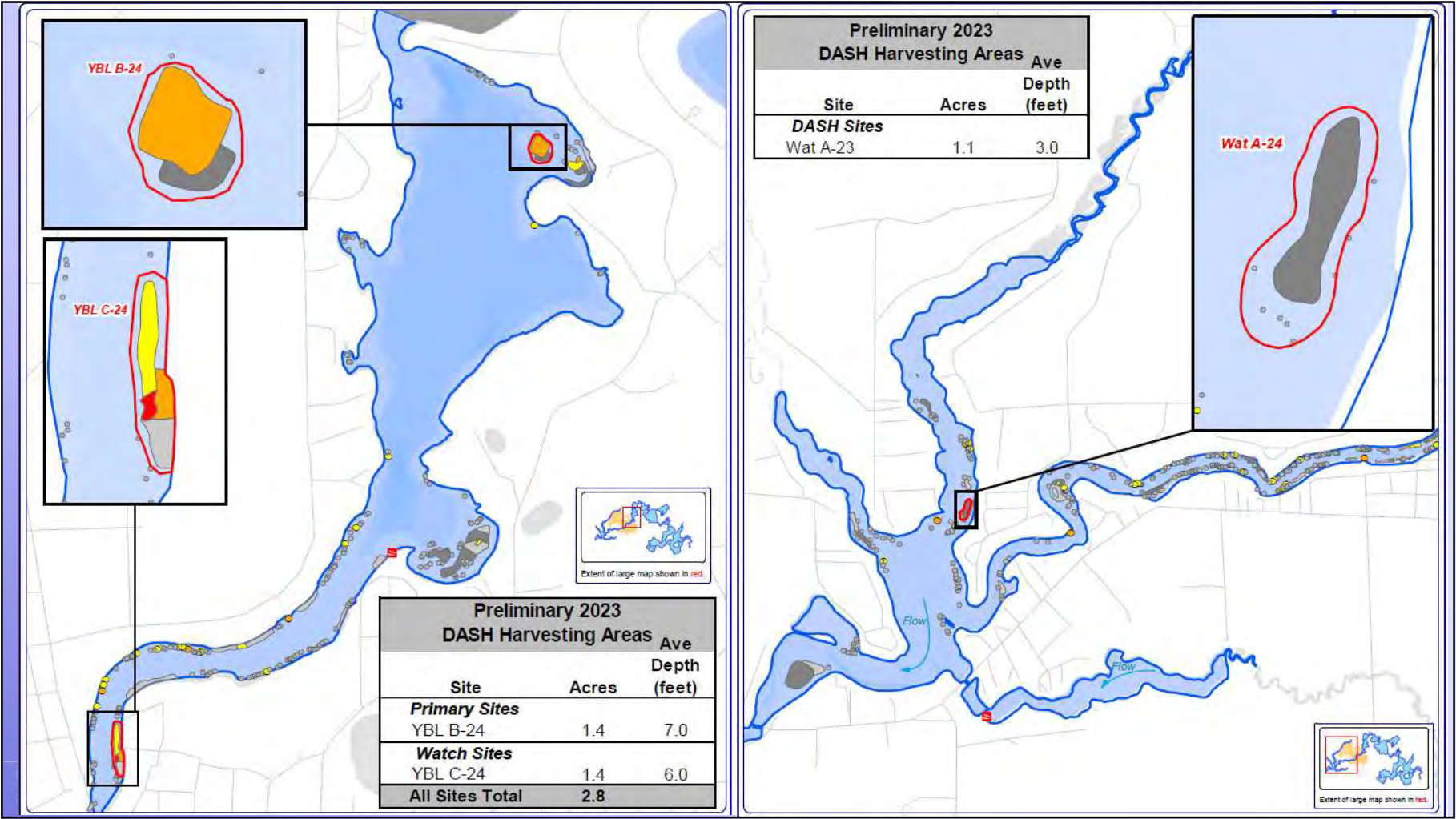


2024 Preliminary Hand-Harvesting Plan

- Harvest Sites (12.8 acres)
 - 7 sites in Catfish
 - 2 sites in Yellow Birch (1 is watch site)
 - 1 site in Watersmeet
- Continue to Educate and encourage riparians on legal EWM removal

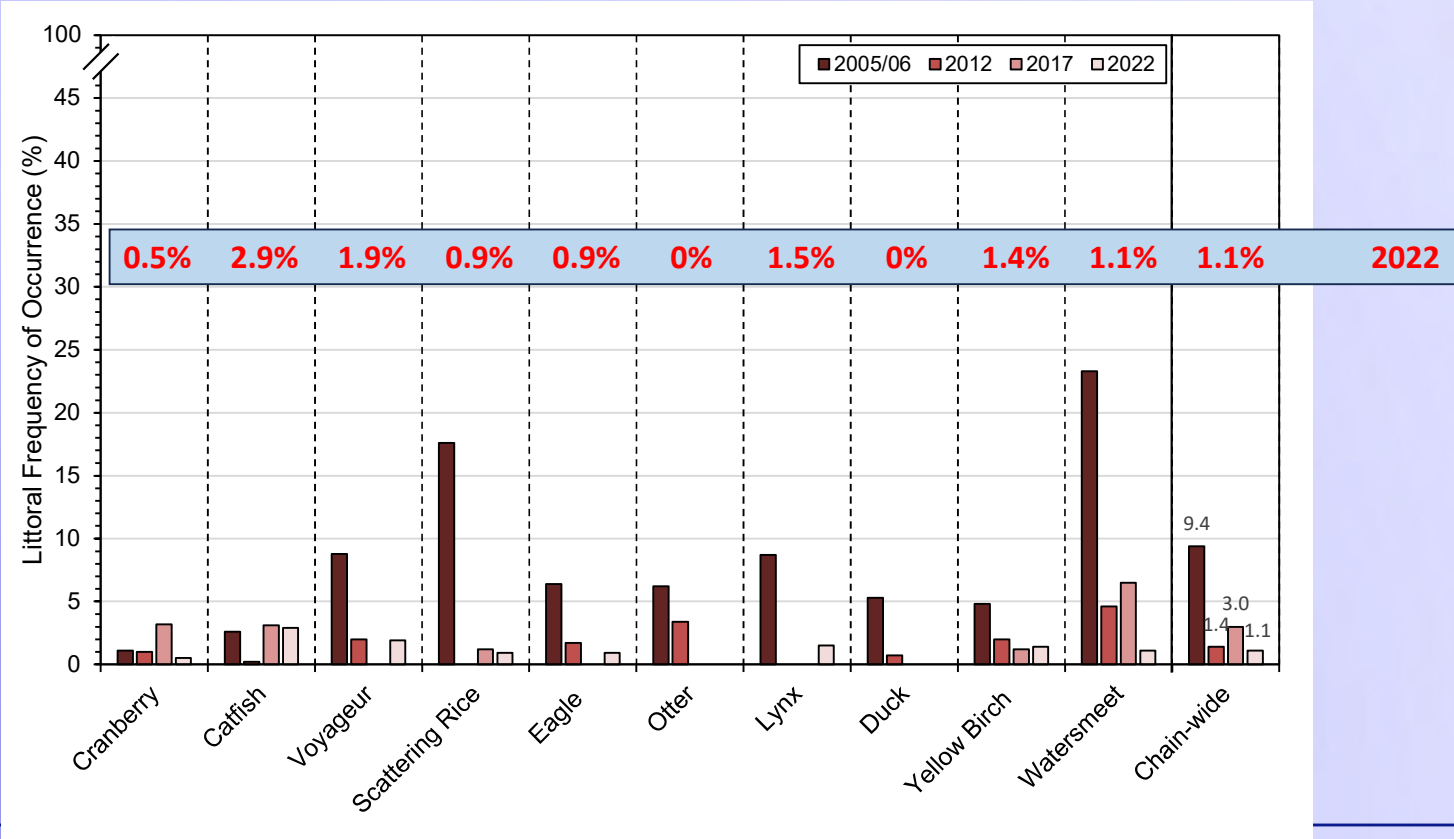
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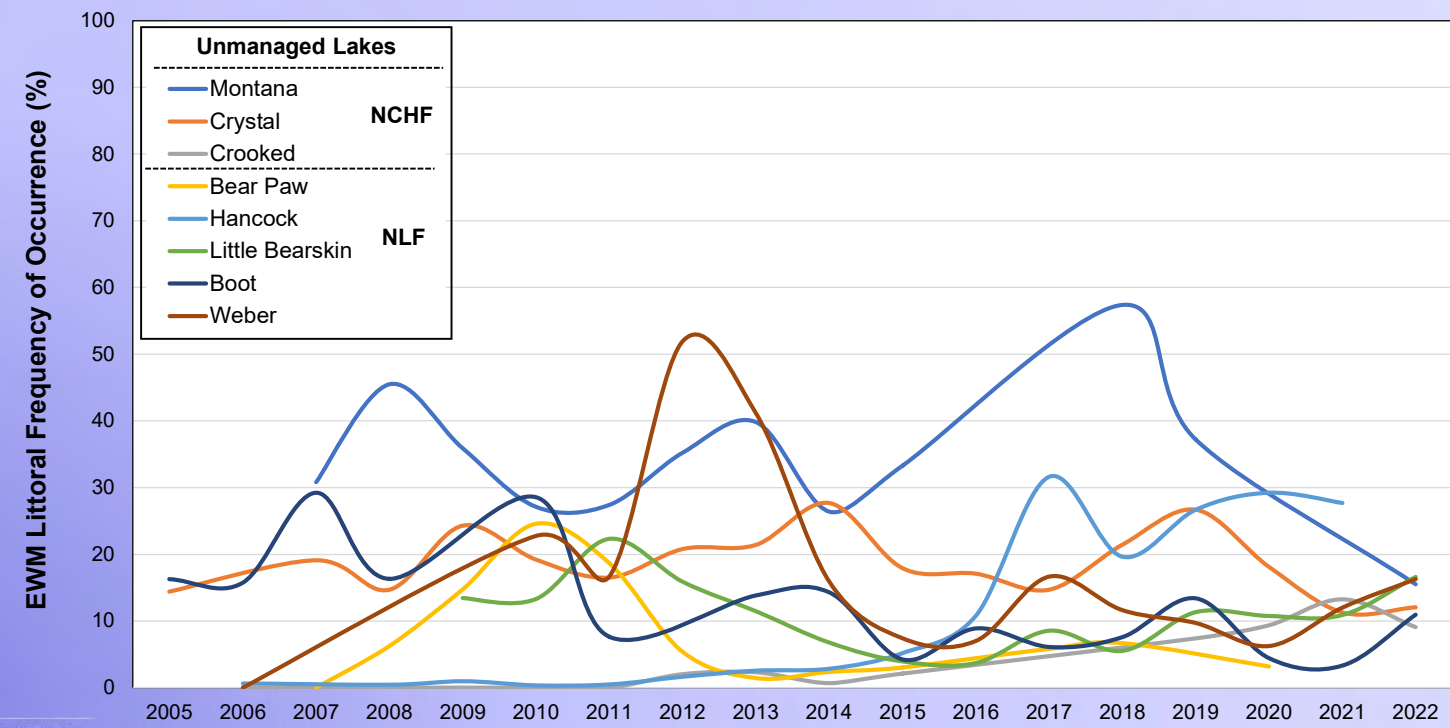


2022 EWM Littoral Frequency of Occurrence



WDNR EWM Long-Term Monitoring Trends

Unmanaged





Management Plan and Grants

- WDNR recommends **Comprehensive Management Plans** generally get updated every 10 years
 - Particularly for grants/permits related to water quality improvements (implementation grants)
- WDNR recommends lakes conducting active management update aspects of the plan every 5 years (**APM Plan**)
 - Particularly for grants/permits related to aquatic plant management (AIS control grants [NR193], NR107, NR109)
 - Whole-lake PI survey needs to be within 5 years
 - Management action in AIS Grant needs to be supported by Plan



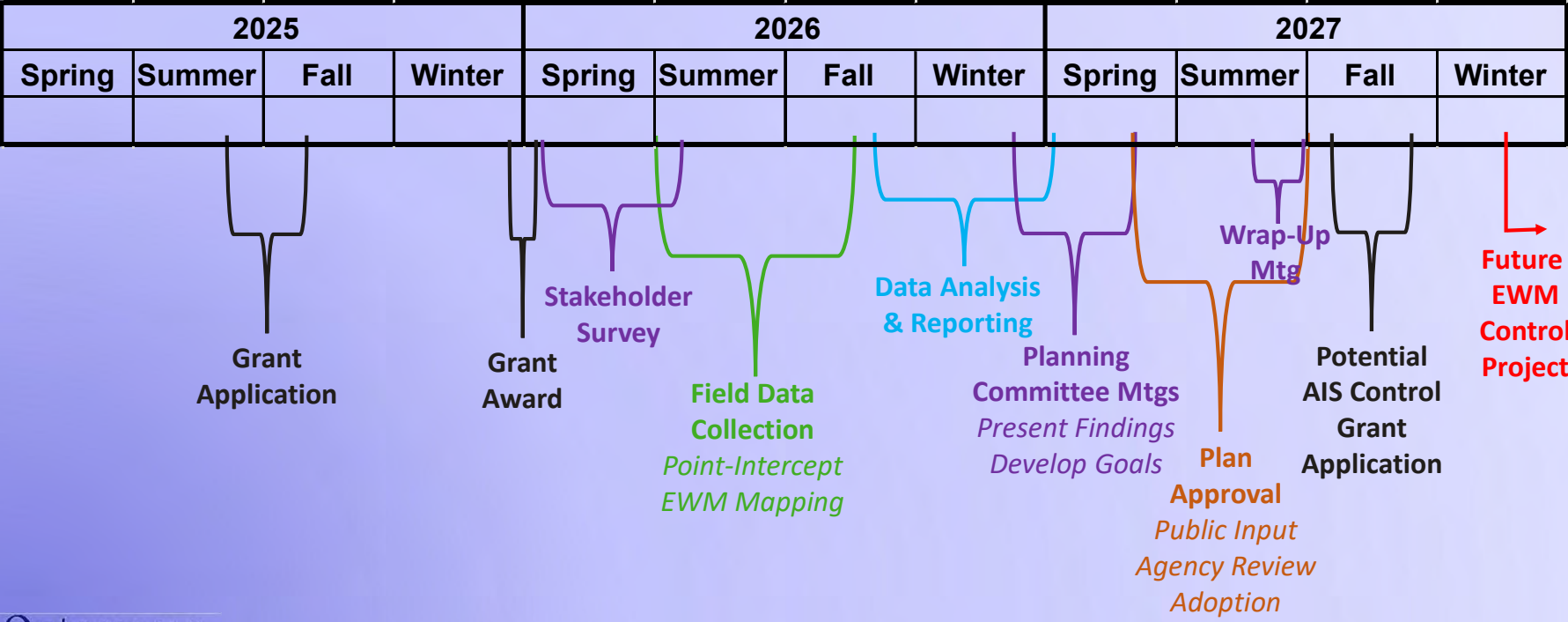
APM Plan Update – ~2 yrs to Complete

- Riparian and/or User Survey (last in Aug 2014)
- Point-Intercept Data (last in summer 2022)
- EWM Mapping Data (annual)
- Series of Meetings to review existing aquatic-plant related goals/actions and update with new information
- Agency (45-days) & Public (≥ 21 days) comment period requirement



Management Planning Timeline

Sept 15/Nov 15, 2024 Grant app – 3 yr AIS Control Grant for 2025-2027





NR107 (Herbicide) & NR109 (Mechanical)

Purpose

- Management of *nuisance-causing* aquatic plants in a manner consistent with sound ecosystem management and where the loss of ecological values is minimized

Interpretation in Northern WI

- No herbicide use for native plants, even if nuisance causing
- Needs to be outlined in a management plan to conduct either
- Encourages the management technique with the least ecological impact, which is often inferred as hand-harvesting>mechanical>herbicide
- Herbicide use for AIS “may” be granted if demonstrating negative ecological impacts or impairments to required navigation

Best Management Practices (BMPs)

- **A “placeholder” term to represent the management option that is currently supported by that latest science and policy**
- **Definition evolves over time**
 - Pre 2010 - small spot treatments with granular products
 - Early 2010s - larger spot treatments with liquid products
 - Mid 2010s – whole-lake treatments, spot treatments with herbicide combos, hand-harvesting/DASH
 - Current– new herbicides, whole-lake/basin approaches, nuisance maintenance vs population management, mechanical harvesting, increasing human tolerance

Florpyrauxifen-benzyl (ProcellaCOR™)

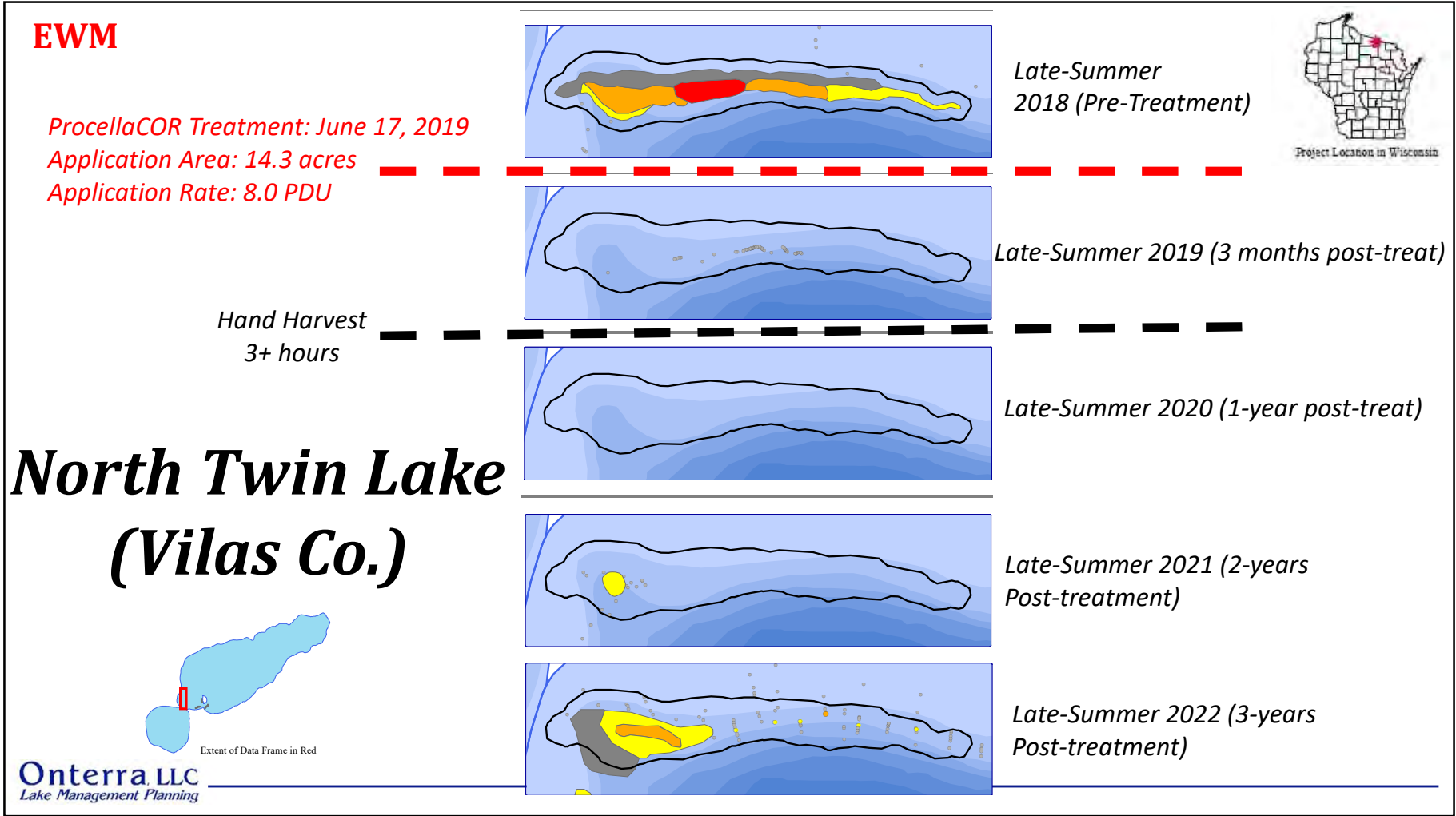
- New class of synthetic auxin hormone mimics
 - Different binding affinity than other auxins (2,4-D/Triclopyr)
 - Use at PPB rate vs PPM
- Shorter contact exposure time (CET) requirement
- Short environmental fate of active ingredient, acid metabolite longer environmental fate (activity on plants)
- Detailed information on field applications is limited (first in 2019 in WI)
- *Reduced Risk Status* granted by EPA
- EPA considers *Practically nontoxic* to freshwater fish and invertebrates, birds, bees, reptiles, amphibians and mammals
 - Same class as 2,4-D, with fisheries impacts to some species at early life stages
- EPA indicates: there are no risks of concern to human health...
- EPA/DATCP: No drinking water or recreational use restrictions, including swimming and fishing (consumption), and no restrictions on irrigating turf, but short waiting period for non-agricultural irrigation

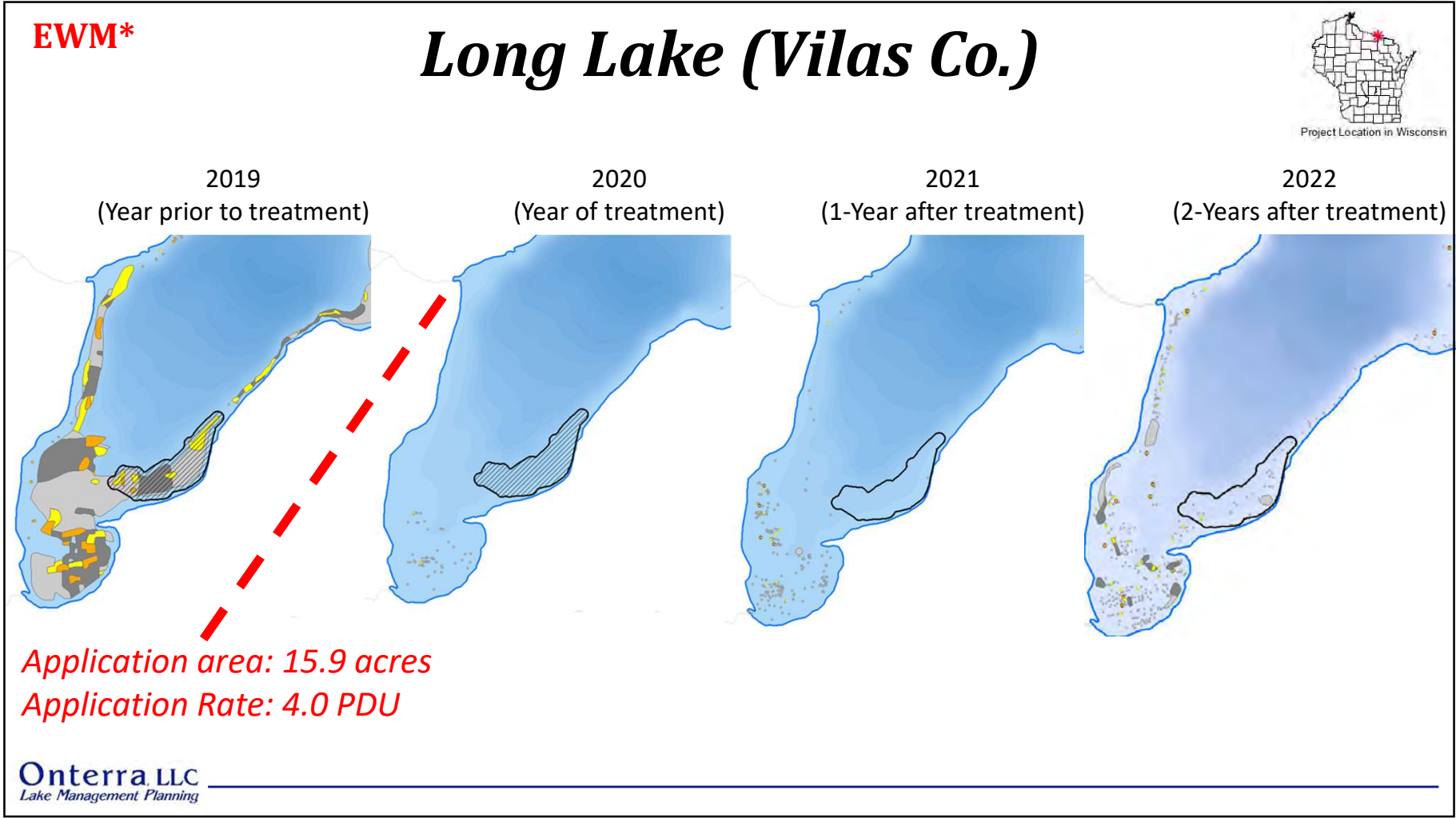


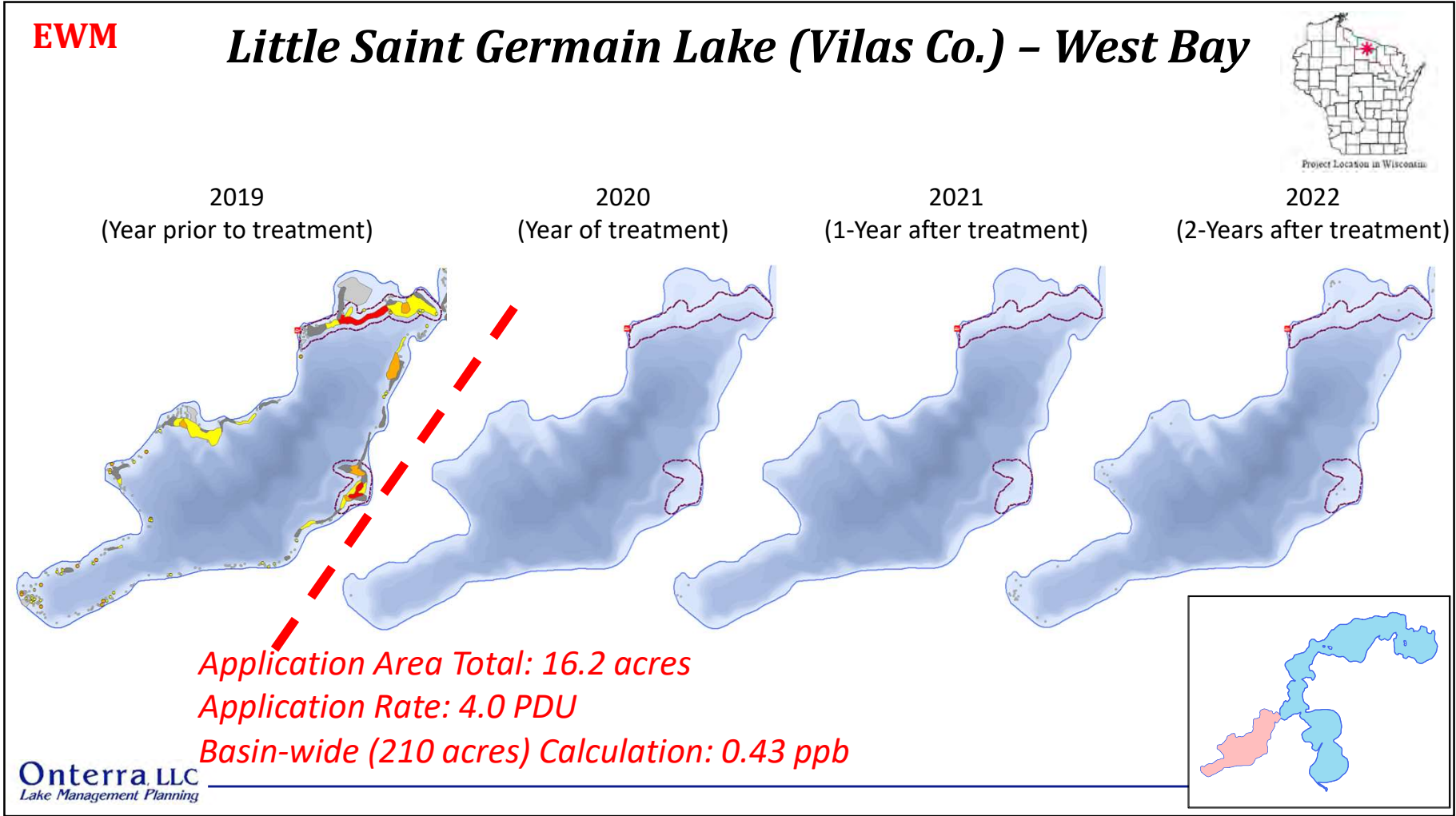
ProcellaCOR impacts on Aquatic Plants

- Onterra field data

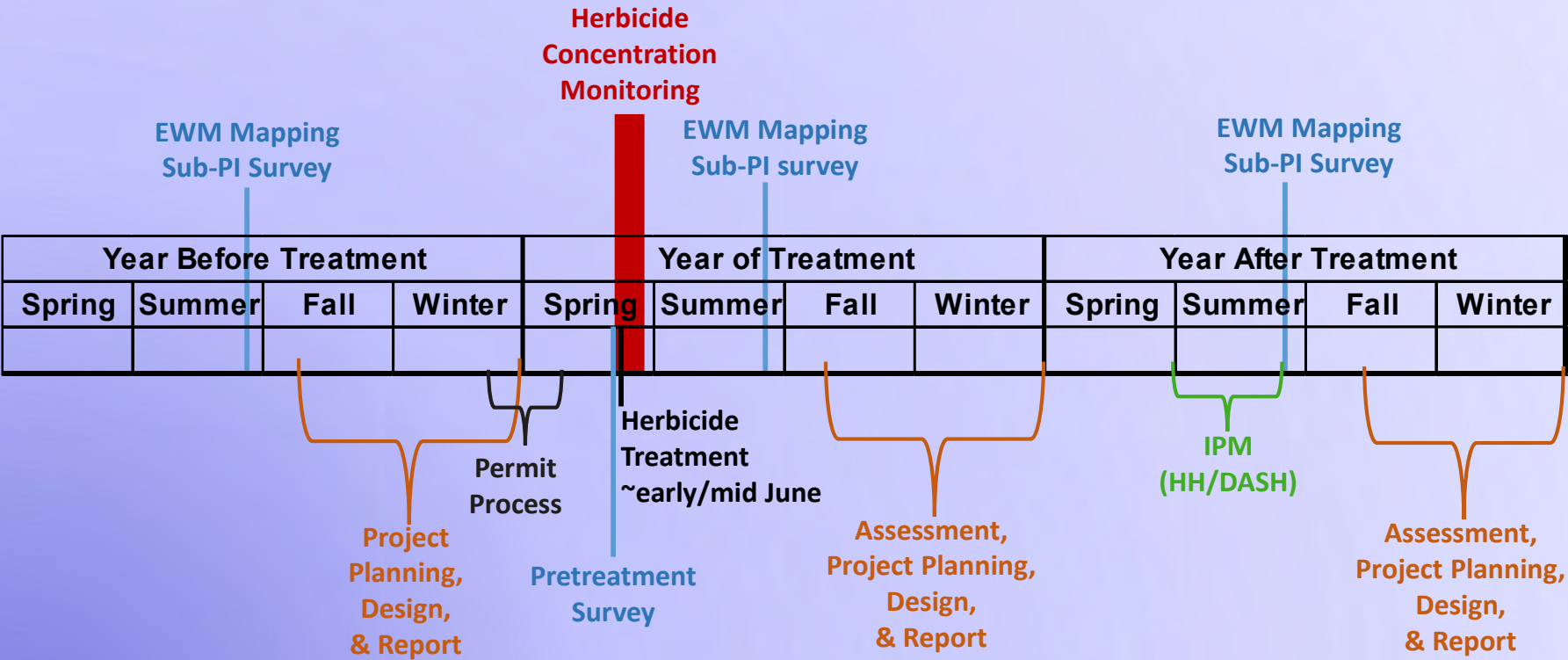
- EWM control for 3-4 years, potentially longer particularly if follow-up hand-harvesting is conducted
- Northern watermilfoil is greatly impacted and may not come back as quickly as EWM
- Some other native plants impacted (reduced by 50%): coontail, water marigold, possibly water stargrass – generally dicot species
- Water lilies will be stressed but typically rebound
- Pondweeds and most other native plants are largely unimpacted







Typical Treatment Monitoring



ERC Project Conclusions

- **Overall, significant reduction of EWM since start of the program**
 - Maintaining low EWM population is going to be difficult, particular if/when water clarity returns to normal
 - Moderate EWM population increase observed from 2022-2023
- **No Herbicide Treatment Proposed AGAIN for 2024**
 - Will be 9 consecutive years without herbicide management
 - **Future herbicide use considerations?**
- **Conduct Professional-Based Hand-Harvesting in 2024**
 - Based on the ESAIS Survey (early July), the strategy will be adjusted
 - Early implementation of hand-harvesting program has been helpful
- **Important to Continue to Improve the ERC**
 - Work on implementing protection & enhancement goals outlined in *Plan*, especially shoreland protection & restoration
 - Consider future update of APM Plan, that incorporates evolving science, changing technologies, and regulatory environment



Thank You

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