Unified Lower Eagle River Chain of Lakes Commission

Eagle River Chain of Lakes Aquatic Invasive Species Project Informational Meeting November 15, 2017



Eddie Heath Onterra, LLC Lake Management Planning

Outline

- AIS project overview
- 2017 EWM monitoring results
 - Hand-harvesting program
 - Chain-wide
- 2017 EWM Control Strategy





Evolved Control Strategy

- EWM populations have been greatly reduced
 - Remnant areas too small to effectively controlled using herbicides
 - Below levels that cause ecological impacts or cause reductions in ecosystem services

Maintain positive strides

- ULERCLC does not want to abandon management and simply wait for EWM populations to reach levels that are again applicable for herbicide control
- Need to balance a level of EWM population tolerance while not allowing population to return to pre-management levels
- Continue a professional-based hand-harvesting program
 - Challenges: water clarity, native plant abundance, traffic, etc.



Hand Removal vs. Diver-Assisted Suction Harvester (DASH)

Hand Removal

- Can be volunteer-based or contractors are available
- Used for small colonies and scattered individual plants
- Does not require a permit





DASH

- Typically used by contractors
- Used for colonies (not highly maneuverable)
- Requires mechanical harvesting permit



Hand-Harvest Control & Monitoring Strategy



Professional AIS Mapping



Point-Based Mapping

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



Polygon-Based Mapping

- Highly Scattered
- Scattered
 - </u> Dominant
 - 💪 Highly Dominant

📕 Surface Matting



2017 ESAIS Early-July Pre-Hand-Harvest

Legend

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

2017 ESAIS Early-July **Pre-Hand-Harvest**



~1/2 Day of Effort

Legend

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

2017 EWM PB September Post Hand-Harvest



~1/2 Day of Effort

Legend

- Highly Scattered Scattered Dominant Highly Dominant Surface Matting
- 0 Small Plant Colony

Single or Few Plants Many or Clumps of Plants











2017 ESAIS Early-July Pre-Hand Harvest







- Legend
 - Single or Few Plants $^{\circ}$
 - Many or Clumps of Plants
 - Small Plant Colony
- Dominant **Highly Dominant**

Highly Scattered

Surface Matting

Scattered

- Days of Effort



2017 ESAIS Early-July **Pre-Hand-Harvest**

3.2 person-hours

Scat A-17

11.2 person-hours

Scat B-17



Legend

- **Highly Scattered** Scattered Dominant **Highly Dominant**
- Single or Few Plants 0
 - Many or Clumps of Plants
 - Small Plant Colony
- Surface Matting

2017 EWM PB September *Post Hand-Harvest*

3.2 person-hours



11.2 person-hours





Legend

- **Highly Scattered** Scattered Dominant **Highly Dominant**
- Single or Few Plants \bigcirc
 - Many or Clumps of Plants
- Small Plant Colony

Surface Matting

Hand-Harvesting Conclusions

- Starting to understand the tool
 - EWM reductions in some sites
 - Maintained low EWM populations in others
- Realities uncovered
 - Effectiveness & selectivity
 - Costs & techniques
- Side benefit is the positive public relations it brought





Divers remove aquatic invasive species by hand on Eagle Submitted: 07/21/2016 River Chain

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EAGLE RIVER - It pains many people in the Northwoods to hear the words Eurasian watermilfoil



Chain-wide Monitoring Results

EWM Colonies



Lake Management Planning

EWM Colonies



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2015 EWM PB Early-September

Herbicide Treatment in May 2015

Legend			
\square	Highly Scattered	0	Single or Few Plants
\sim	Scattered	0	Many or Clumps of Plants
	Dominant	0	Small Plant Colony
	Highly Dominant		
	Surface Matting		

2016 EWM PB Early-September



0



Wild Rice Survey



Sparse Wild Rice



Dense Wild Rice



Extent of inset maps shown in red.

Wild Rice Survey



Sparse Wild Rice



Dense Wild Rice



Extent of inset maps shown in red.

Wild Rice Survey



Sparse Wild Rice



Dense Wild Rice



Extent of inset maps shown in red.

Wild Rice Survey



Sparse Wild Rice



Dense Wild Rice



Extent of inset maps shown in red.

2016 Point-intercept Survey– Results

EWM Occurrence





Native Plant Changes





Littoral Zone Changes



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Precipitation Changes



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2018 Preliminary Strategy

In progress...

- Target Scattering Rice again with handharvesting, likely DASH and adding another site (NE part of lake)
- Conduct another trial in Watersmeet Lake, perhaps a different spot than targeted in 2017, perhaps with DASH
- Target spot in Yellow Birch Lake with hand-harvesting (NE offshore shelf)
- Conduct pretreatment monitoring activities on upstream Cranberry Channel, to prepare for likely herbicide treatment in 2019.





AIS Project Conclusions

Overall, significant reduction of EWM since start of the program

• Holding onto gains made is difficult, but continues to be working on the chain

No Herbicide Treatment Proposed AGAIN for 2018

- Working criteria: colonized areas where a sufficiently large treatment area can be constructed to hold CETs (preference to *dominant* or greater density)
- Based on the ESAIS Survey (early July), the final professional handharvesting strategy will be developed

Important to Continue to Improve the ERC

- Ongoing Management Planning effort developing protection & enhancement goals
- Navigate additional science, changing technologies, and regulatory environment

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