# GLP BREAKOUT SESSION: CURRENT CONTROL STRATEGY STARRY STONEWORT

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### EGERIA DENSA PARROT FEATHER

# **STARRY STONEWORT**



- IDENTIFIABLE BY MAT FORMATION, STAR SHAPED RHIZOIDS AND "RAGGED" LOOK
- RAPIDLY SPREADING IN STATE OF MICHIGAN AND EXPANDED INTO NE INDIANA
- COLONIZES VIA FRAGMENTS AND SPORES
- SUCCEPTIBLE TO A RANGE OF CHELATED COPPER AND COPPER HYDROTHOL MIXES
- WILL DOMINATE IN VARIETY OF ORGANIC AND INORGANIC SUBSTRATES
- CONFIRMED IN HUNDREDS OF LAKES IN MICHIGAN 10 LAKES IN INDIANA AND NOW YOUR STATES.







### **LAKE WAWASEE 2008**

Lake Wawasee has 3,060 surface acres with a maximum depth of 77 feet and an average depth of 22 feet. SSW first detected in 2008.



### LAKE WAWASEE SSW BEDS

Fall 2009 ♦ 15 ac. Fall 2010 ♦ 20+ ac. ♦ Fall 2011 ♦ 56 ac. ✤ Fall 2012 ♦ 159 ac.



# **DECISIVE ACTION A MUST**

- × 2008 no treatment
- × 2009 treatment delayed until later is season
- × Ineffective and unsure treatment strategy
  - Herbicide choice and concentration < optimal</li>
  - + Nautique .8 ppm tested varying rates of Cutrine Ultra and Hydrothol
  - + Komeen Crystal trial in 2013
  - + Best control so far 2.4 gallons Cutrine Ultra/ 1 Qt Hydrothol 191-. per ac/ft
     × Potential for Clipper or Clipper mixes \*if native loss is acceptable
  - + Timing of treatment ? critical
  - + Repeated treatments a necessity to obtain suppression

### **SSW WIDELY DISTRIBUTED**

# Fall 2014200.3 ac.



# DISTRIBUTION

- × Fall 2015
- × Treated twice
- x 108.6 acrestreated
- × public access
- × Limit spread
- × 2.4 gal/acreft cutrine



### WALL LAKE

- Aggressive treatment
- Wide treatment areas
  - Small patches/single plants
- Multiple treatments
- Effective suppression

Year	Acres of Starry Stonewort	
2010	2	
2011	2	
2012	4.83	
2013	6.08	
2014	7.83	F



Figure 2 Wall Lake starry stonewort growth and treatment areas for 2014. Blue areas were treated on 7/15/14, 8/7/14, and 9/30/14. Pink areas were noted later in the season and treated on 9/30/14.

### WALL LAKE

× 2015
× Large areas

+ Treated 7 acres

× Fall survey

+ After 2x

treatments
+ Scattered pts.



### **PRELIMINARY CLIPPER TRIALS**

- x Testing Clipper as sole herbicide (no mix)
  - + 200ppb or 4.2lbs per surface ac/ @ 4ft depth
  - + Test locations in two lakes (different conditions)
  - + One site in higher flow higher traffic
  - + One site higher SSW density
  - + Visual comparison of Cutrine Ultra/hydrothol vs Clipper
  - Continuing evaluation of native/emergent vegetation loss and plant diversity



### **GOALS FOR 2015 AND 2016**

- Continue prioritized IDNR funding to surveys and suppression of SSW
- Continued application of Cutrine Ultra / hydrothol 191 mix
- Evaluation of a variety of herbicide methods and types
- Working with plant control applicator in continuing testing the application of Clipper (*flumioxazin*)
- Evaluate results of Partnership with Clemson University and Allied Biochemists (algal challenge test) field trial.

### **NEED FOR NEW SCIENCE AND TOOLS**

- Changes in Aquatic Plant Communities
- Changes in Nutrients, Dissolved oxygen, Water Clarity
- Changes in Fish Populations: Distribution, Growth, Condition, Recruitment, Reproduction
- Variability between Lakes and Growth Patterns
- Changes in Aquatic Habitat and Diversity
- Vulnerability to different Herbicides and Optimal BMP's

- Eradication of a species before complete establishment and spread will have long term positive effects.
- Cost associated with decisive action of quarantine and eradication programs is minimal in relation to long term cost of regional establishment.
- Decisive timing, a well defined plan, patience, and defined funding
- Collaboration among agency's, regions, and with plant control professionals a must for development of Tools and Strategies.



IDNR staff, Aquatic Weed Control, Inc., and partners

ANY QUESTIONS? E-mail efischer@dnr.in.gov