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Lake Gaston Stakeholder Group Meeting March 8th, 2019





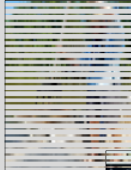
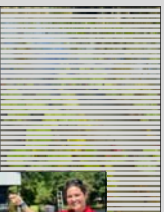
Jessica R. Baumann
Extension Associate, Lake Gaston
Aquatic Plant Management Program




AQUATIC PLANT MANAGEMENT

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Outline

- **Hydrilla**
 - 2018 Treatments
 - Survey Results
 - Volunteer
 - Sonar
 - 2019 Treatment Options
- **Lyngbya**
 - 2018 Survey Results
 - Volunteer
 - Pilot Study Update





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2018 Hydrilla Treatments



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2018 Hydrilla Treatments





Rake Toss: 13%
Estimated Hydrilla Acreage: 374
Treatment Acreage: 200

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2018 Hydrilla Treatments

- **Treatments**
 - **Sonar (June – August)**
 - Upper Pea Hill (100 acres)
 - Beechwood (4.4 acres)
 - Big Stonehouse (11.5 acres)
 - Great Creek (5.9 acres)
 - Poplar Creek (21.4 acres)
 - Contact (September)

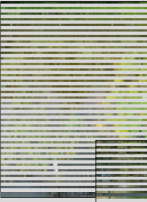




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2018 Hydrilla Treatments

- **Treatments**
 - **Sonar (June – August)**
 - Total of 143.2 acres
 - **Contact (September)**




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2018 Hydrilla Treatments

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 - **Sonar (June – August)**
 - Total of 143.2 acres
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 - Boat Ramps
 - Water Hydrants Sites
 - Left with 30 undesignated acres




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 - Total of 143.2 acres
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 - **Lizard Creek**
 - Contact Treatment
 - Late August
 - Needs to be Addressed in 2019

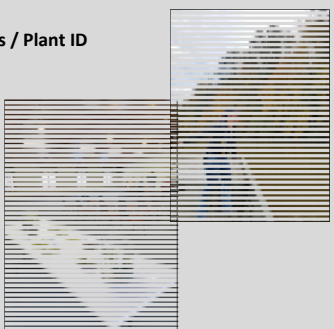


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Fall Volunteer Survey

- **4 Training Sessions**
 - Collections Methods / Plant ID
- **60+ Volunteers**



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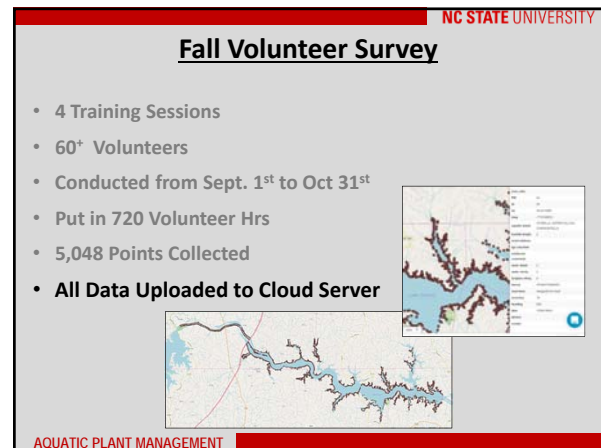
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Fall Volunteer Survey

- **4 Training Sessions**
- **60+ Volunteers**
- **Conducted from Sept 1st to Oct 31st**
 - Two Hurricanes this Year



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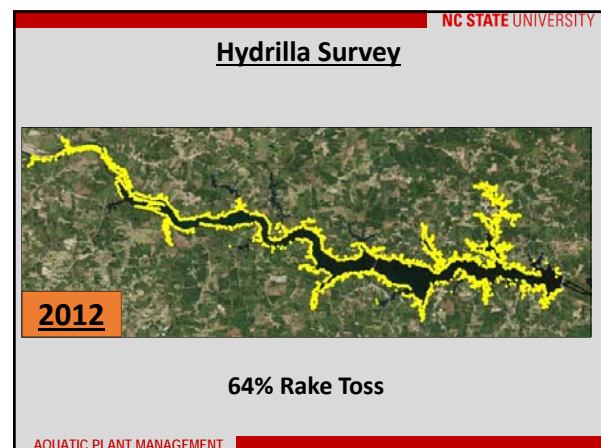
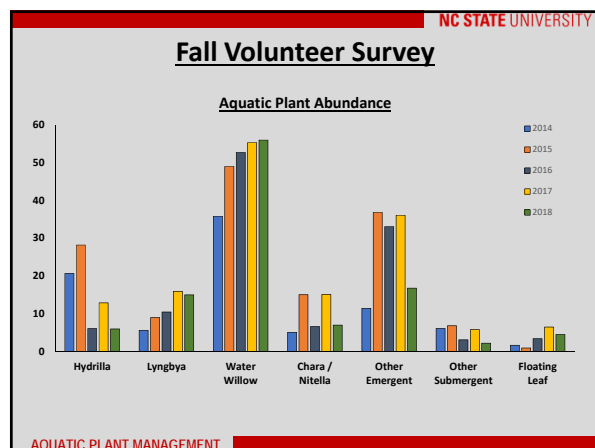
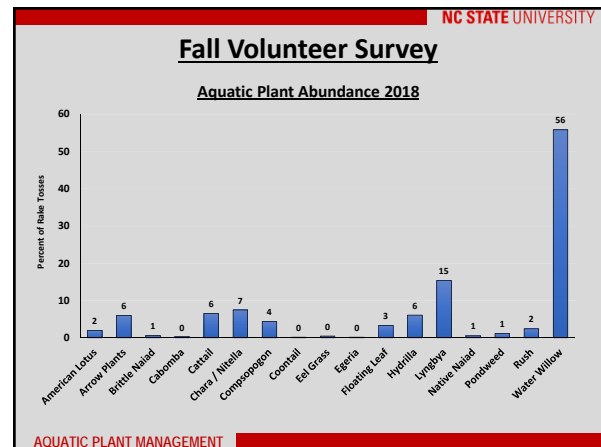
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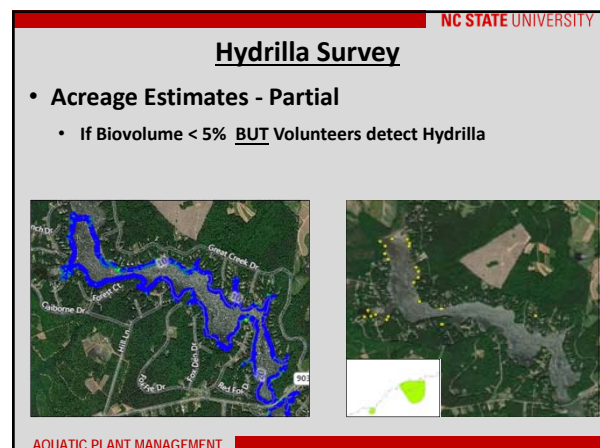
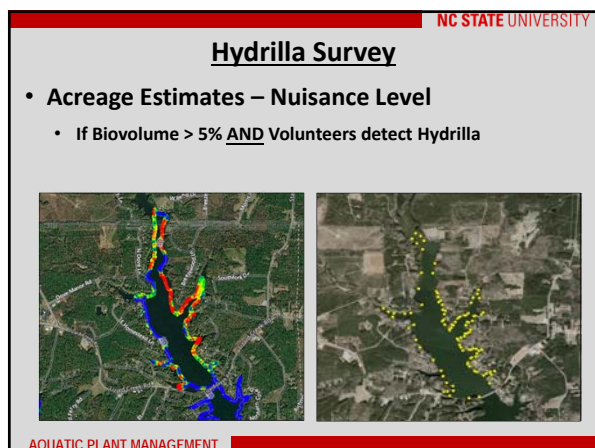
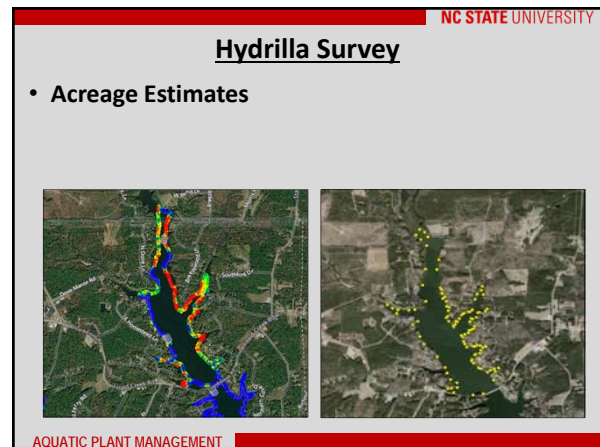
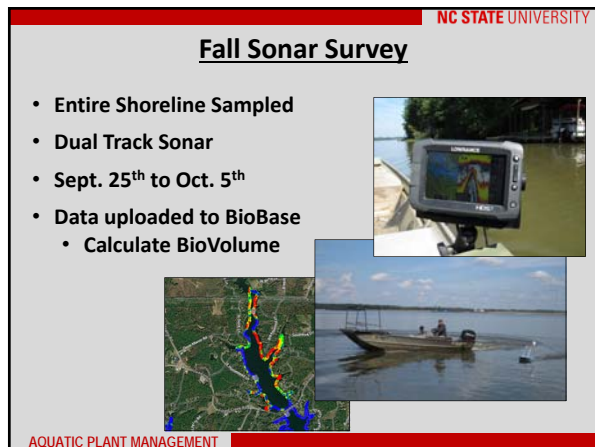
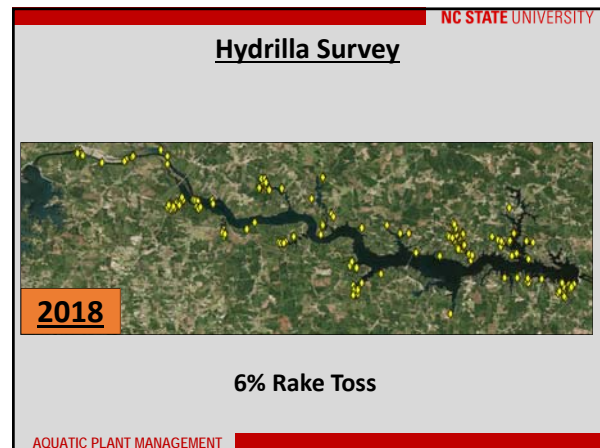
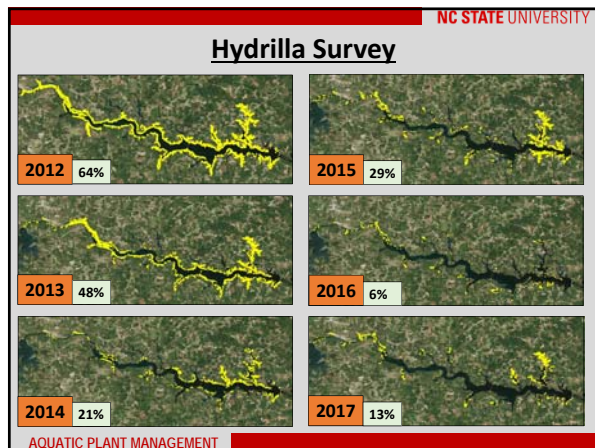
Fall Volunteer Survey

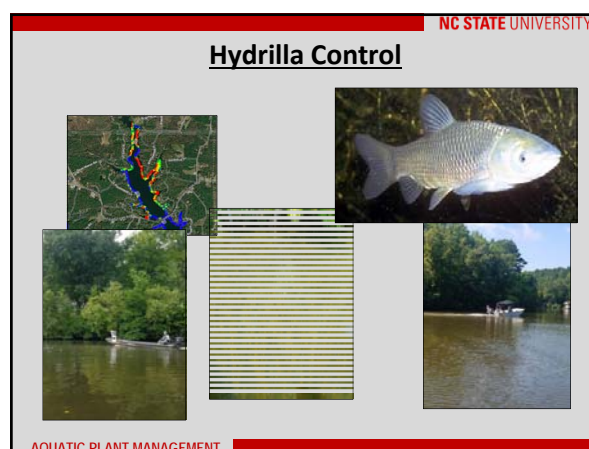
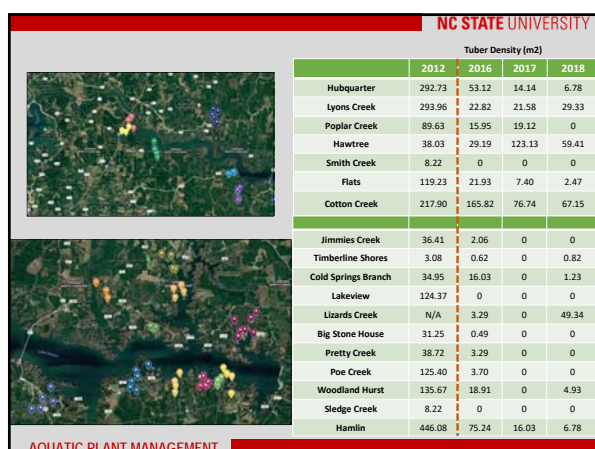
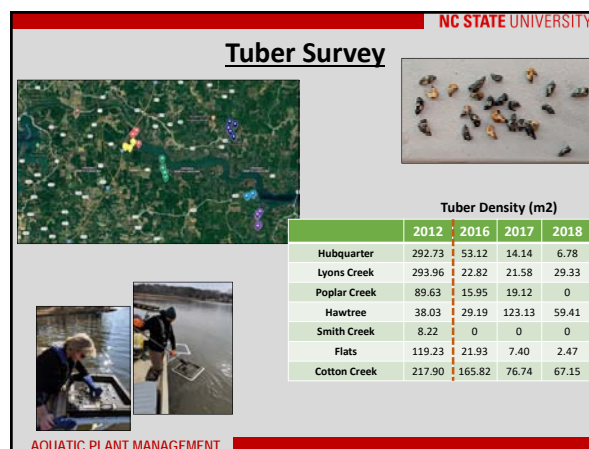
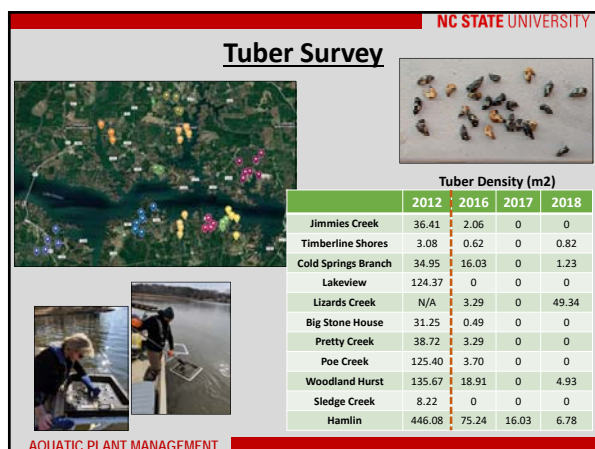
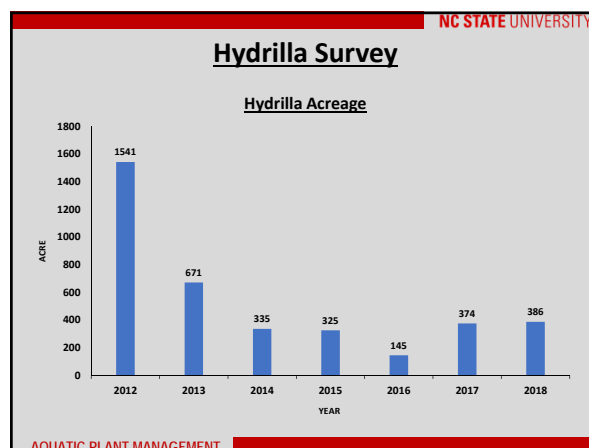
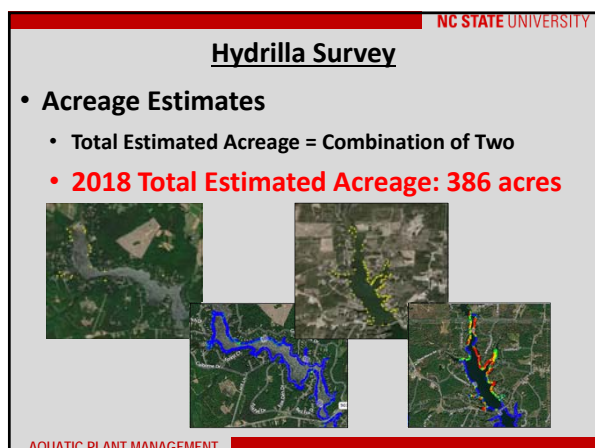
- Plants Identified

Emergent	Submergent	Floating Leaf	Algae
American Lotus	Brittle Naiad	Floating Leaf	Chara / Nitella
Arrow Plants	Cabomba	Pondweed	Compsopogon
Cattail	Eel Grass		Lyngbya
Coontail	Egeria		
Rush	Hydrilla		
Water Willow	Native Naiad		
	Watermilfoil		

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Grass Carp

- Grass Carp Stocking Model - NCWRC
 - 2018 Standing Hydrilla Acreage: 398 acres
 - Grass Carp were not stocked 2018
 - 7,554 Grass Carp**





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Herbicide



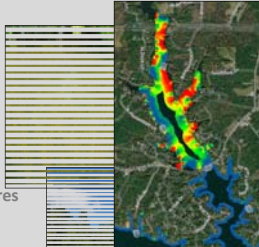
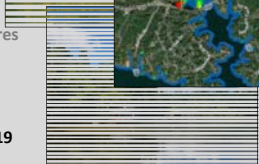


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2018 Hydrilla Treatments

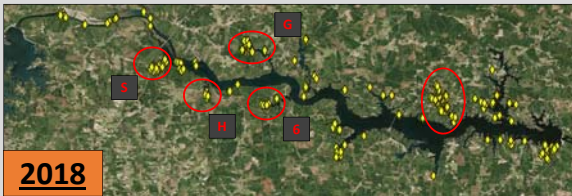
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Hydrilla Sonar Survey



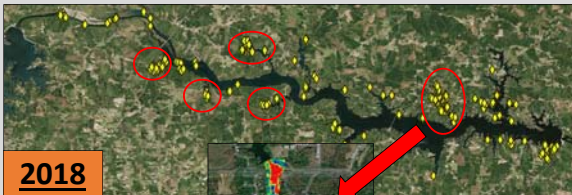
2018

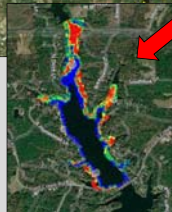
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Hydrilla Sonar Survey



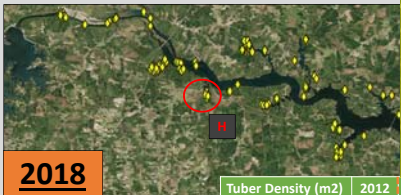

2018



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Hydrilla Survey

2018


Tuber Density (m2)	2012	2015	2016	2017	2018
Hubquarter	292.73	59.20	53.12	14.14	6.78
Lyons Creek	293.96	31.86	22.82	21.58	29.33
Poplar Creek	89.63	11.51	15.95	19.12	0
Hawtree	38.03	33.92	29.19	123.13	59.41
Smith Creek	8.22	4.11	0	0	0
Flats	119.23	30.15	21.93	7.40	2.47
Cotton Creek	217.90	104.15	165.82	76.74	67.15

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2019 Hydrilla Treatments

- TAG Recommendations
 - Herbicide Treatments
 - Maximum Acreage: 300
 - Lizard Creek
 - Cages
 - Unexpected Infestations
 - Biological Control
 - Stock 7,554 Grass Carp




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Lyngbya


- Filamentous Cyanobacteria
- Surface mats prevalent during summer months
- Two Graduate Students
 - Emily Vulgamore (Master's)
 - Jens Beets (PhD)



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Lyngbya Survey

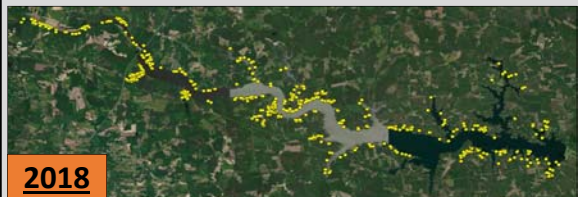


8.1% Rake Toss

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Lyngbya Survey





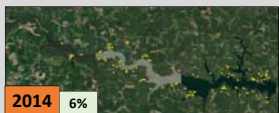



15% Rake Toss

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Lyngbya Survey

 2012 8%	 2015 8%
 2013 5%	 2016 11%
 2014 6%	 2017 16%

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Lyngbya Treatments (2017 / 2018)

- 3 Different Product Companies
- 2 Control Sites




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Lyngbya Treatments (2017 / 2018)

- 3 Different Product Companies
- 2 Control Sites
- **Treatments**
 - July – October
 - Hawtree / Smith / Great
 - Lees / Pretty / Rocky
 - St. Tammany / Lyons / Pretty



AUGUST


OCTOBER

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Lyngbya Treatments (2017 / 2018)

- 3 Different Product Companies
- 2 Control Sites
- **Treatments**
 - July – October
 - Hawtree / Smith / Great
 - Lees / Pretty / Rocky
 - St. Tammany / Lyons / Pretty
- **Biomass Sampling**
 - June – November
 - Pre-treatment / 30 days post application



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Lyngbya Treatments

2017 / 2018 Pilot Study

- No Treatment was Clearly Most Effective



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Lyngbya Treatments (moving forward)

- **Treatment Application**
 - No Change
 - Products / Method
 - Treatment Sites
- **Treatment Timeline**
 - Begin Treatments Earlier
- **Biomass Sampling**
 - Expand on Collection Methods



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TAG Recommendations

Hydrilla

- 1) Treat No More Than 300 acres
 - Lizard Creek
 - Cages
 - Reserved for Unexpected Explosions
 - Keep an Eye on Hawtree
- 2) Stock Appropriate Number of Grass Carp
 - Lizard Creek and Hawtree
- 3) Maintain Equipment Needed For Volunteer Survey

Lyngbya

- 1) Continue Experimental Treatments
- 2) Improve on Survey Techniques


Vegetation Project

- 1) Continue Funding for 2019

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Questions?



AquaticPlants@ncsu.edu

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