



# STA Vegetation Management Overview and Recent Projects



Long-Term Plan Communications Meeting, December 9, 2016





## OBJECTIVE



- **Manage vegetation in the STAs**
- **Maintain sustainable phosphorus uptake processes and mechanisms**
- **Increase treatment redundancy and durability**
- **Increase diversity of beneficial plants**
- **Manage invasive/nuisance vegetation to minimize its spread and impact on desired vegetation and performance.**



## Adaptive Vegetation Management



- **Observe vegetation health and take corrective action as needed**
- **Proactively manage desired vegetation communities and work to increase cover and health**
- **Control the growth of species that can negatively impact desired vegetation and performance and water movement**
- **Repair and restore cells damaged by natural and anthropogenic causes such as storms, high flows, hunter access, boat traffic, wildlife damage, etc.**
- **Monitor FAV and nuisance vegetation to plan treatment**



## Adaptive Operations Management



- **Review water quality data to track flow-way performance and trends**
- **Conduct field observations and studies to track vegetation health and take corrective action as needed**
- **Conduct field observations to adjust target stages to maximize efficacy and minimize negative impacts**
- **Review data with the modelling and research groups to maximize effective flow patterns in each cell**
- **Track meteorological conditions and forecasts**



# Floating Aquatic Vegetation Control





# Floating Plant Infestations: A-1 FEB



# Aerial Herbicide Application: A-1 FEB





# Short Circuit Issues





# Short Circuit: STA-2 Cell 3





# Short Circuit: STA-2 Cell 3





# Short Circuit Repairs: STA-3/4



# SHORT CIRCUIT REPAIR STA-1E CELL 5



## STA-1 East Cell 5



SPECIES	Acres	Cost
Alligator Flag	26.25	\$43,587.00
muck sinking/ dispersal	?	\$4,463.50
floating pennywort mats	62.88	\$8,097.41
torpedo grass, 7.3 acres	7.3	\$753.90
floating cattail	22.71	\$2,700.61
aquatic grasses	13.31	\$4,468.36
mats of floating plants	49.36	\$4,027.88
TOTAL		\$68,098.66





# Functional Redundancy: EAV Cells





# Functional Redundancy: STA-1 East Cell 6



# Functional Redundancy: STA-1E Cell 6





# Vegetation Conversion and Emergent Control in SAV Cells





# SAV Harvest and Transport



# Conversion: SAV Inoculation





# Primrose Willow: STA-5 Cell 4A





# Treated Primrose Willow: STA-5 Cell 4A





# Cattail Recovery: STA-5 Cell 4 A





# Floating plants: Pump Station





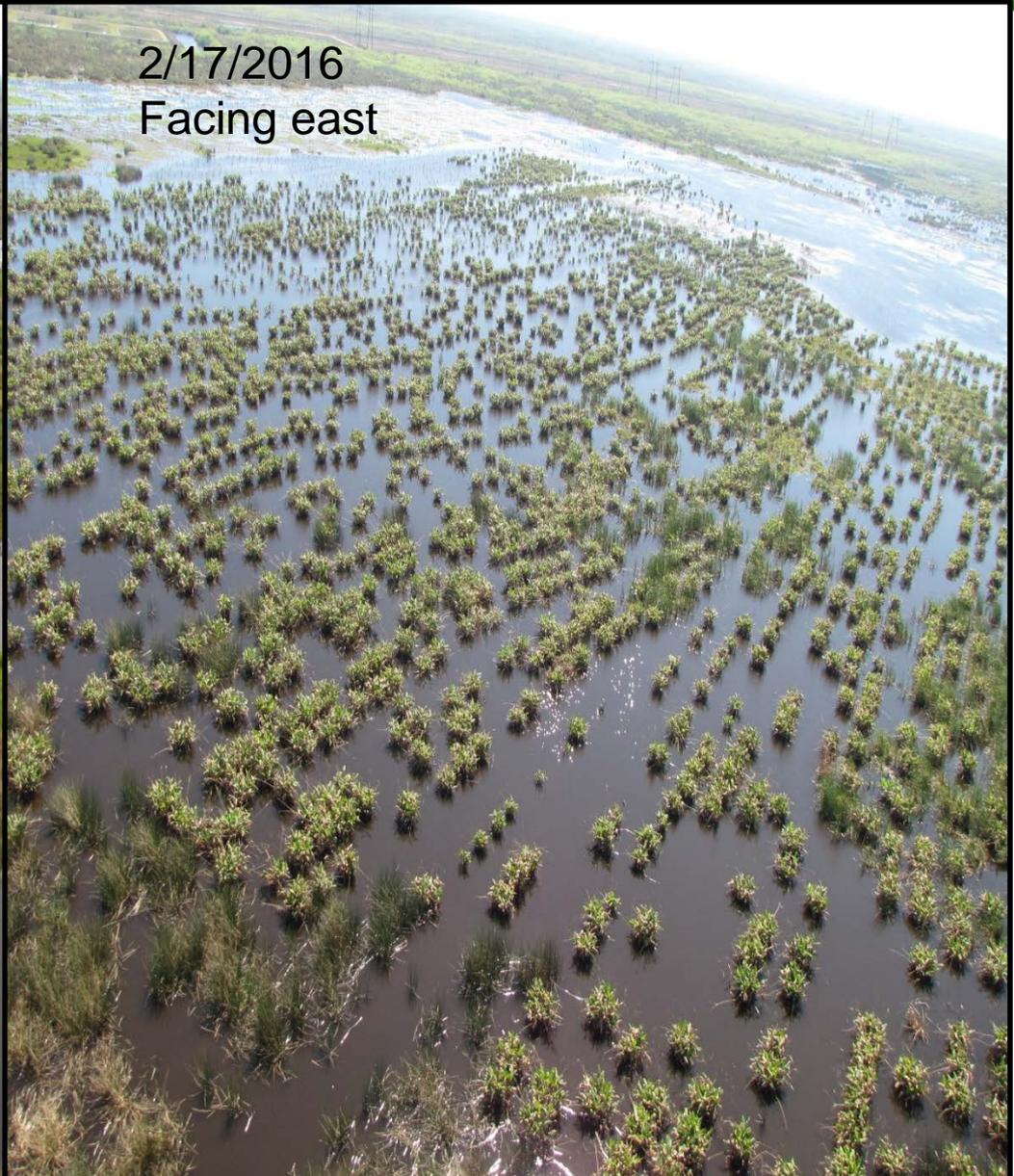
# Jammed Structures



# Rehabilitation: STA-1W Cell 1A



# Rehabilitation: STA-1W Cell 1A



11/19/2014  
Facing east  
Just after aerial treatment

2/17/2016  
Facing east

# Rehabilitation: STA-1W Cell 1A



12/19/2014  
Facing NW



7/16/2015  
Facing NW



6/15/2016  
Facing north





# Rehabilitation: STA-1W Cell 1A



1/28/2015  
Facing NE



8/20/2015  
Facing NE



# Rehabilitation: STA-1W Cell 1A



**FY 2016**

SPECIES	ACRES	COST	TOTAL
Alligator Flag	147.5	\$355,675.75	
Giant Bulrush	3.5	\$17,794.00	\$373,469.75
Primrose willow	519.34	\$58,298.10	
cattail	124.81	\$21,048.96	
floating pennywort mats	102.34	\$15,679.67	
muck sinking/ dispersal	43.2	\$17,554.00	
water lettuce	12.48	\$1,955.03	
willow	3.65	\$418.73	\$114,954.49
<b>TOTAL</b>	<b>956.82</b>	<b>\$488,424.24</b>	<b>\$488,424.24</b>

**FY 2015**

SPECIES	ACRES	COST	TOTAL
Alligator Flag	147.5	\$302,390.00	\$435,244.75
Giant Bulrush	22.5	\$132,854.75	
Primrose willow	334.3	\$32,494.33	
cattail	124.81	\$21,048.96	
floating pennywort mats	489.44	\$46,477.27	
muck sinking/ dispersal	?	\$16,496.00	
water lettuce	265.27	\$18,896.04	
willow	68.93	\$15,550.70	
mixed floating plants	45.29	\$3,949.35	
hyacinth/ lettuce mix	83	\$5,970.95	
leather fern	25	\$2,909.29	
water hyacinth	154.76	\$10,023.95	\$173,816.84
<b>TOTAL</b>	<b>1760.8</b>	<b>\$609,061.59</b>	<b>\$609,061.59</b>

# Questions

