

# Considerations for Controlling Willow Invasions of Marshes

**Mike Duever**

**Natural Ecosystems**

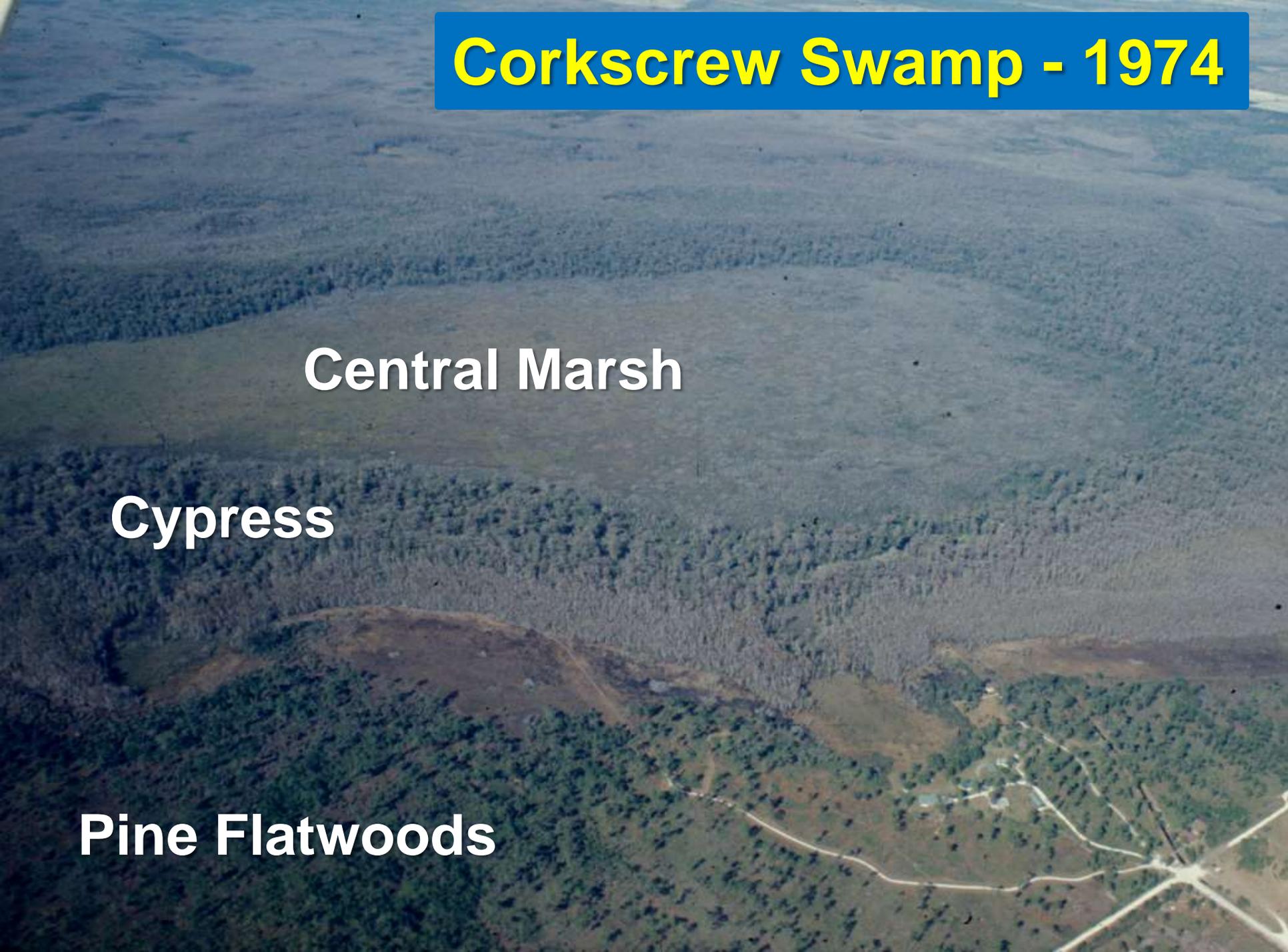
**GEER – 18 April 2017**

# Corkscrew Swamp - 1974

Central Marsh

Cypress

Pine Flatwoods



# **Corkscrew Swamp Sanctuary Central Marsh - May 1955**



# Central Marsh – September 1974



# Central Marsh – March 1975



# Central Marsh 2 m Soil Core (Nov 1976)

~ 5 ft Below Ground Surface  
~5000 Years BP



# Central Marsh - January 1974

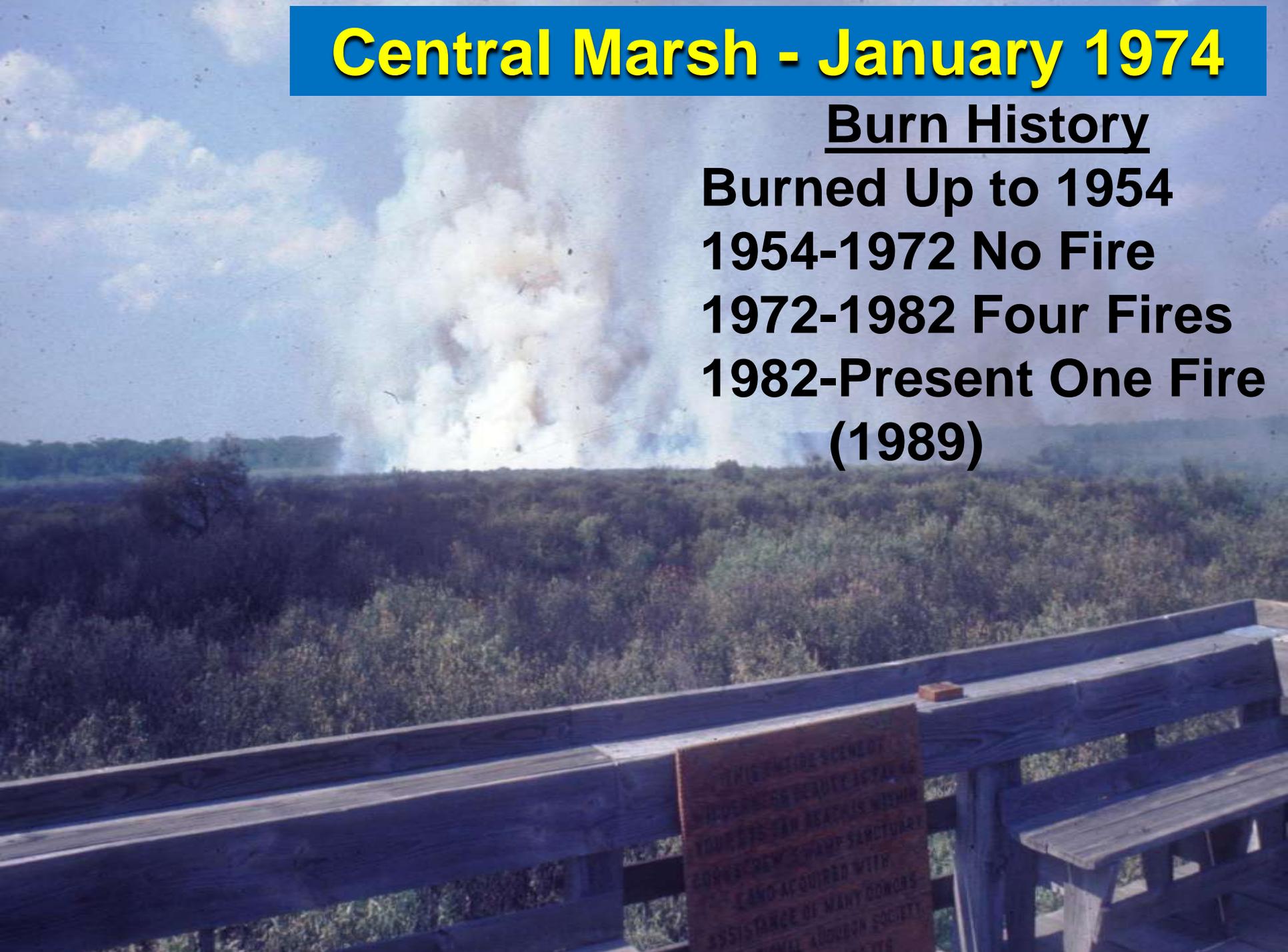
## Burn History

Burned Up to 1954

1954-1972 No Fire

1972-1982 Four Fires

1982-Present One Fire  
(1989)



# Central Marsh – July 2010





**Control Site in Central  
Marsh - 1 Fire (1989) in 34  
Years - December 2016**



## Herbicide Aerial Spraying

- Cheaper
- Less Effort
- Can Do Anytime
- Can Do Anywhere
- Can Do Larger Areas



## Mechanical Grinding / Roller Chopping

- Expensive
- Much Effort
- Shortly Before Wet Season
- Avoid Deep Organic Soils
- Smaller Areas

# ? Marsh Restoration ?

- **Killing the Willow?**
- **Getting Native Marsh Vegetation?**
- **Will It Burn?**
  - **Grasses and Sedges**

# METHODS

- **38 Sampling Transects**
  - **22 Herbicide**
  - **6 Mechanical**
  - **10 Untreated Controls**
- **Approximately 0.2 Mile Transects**
- **Recorded All Plant Species  
& Their Coverage along Transect**



**Control Site in Central  
Marsh - 1 Fire (1989) in 34  
Years - December 2016**



**Control Site - North Marsh  
December 2016**



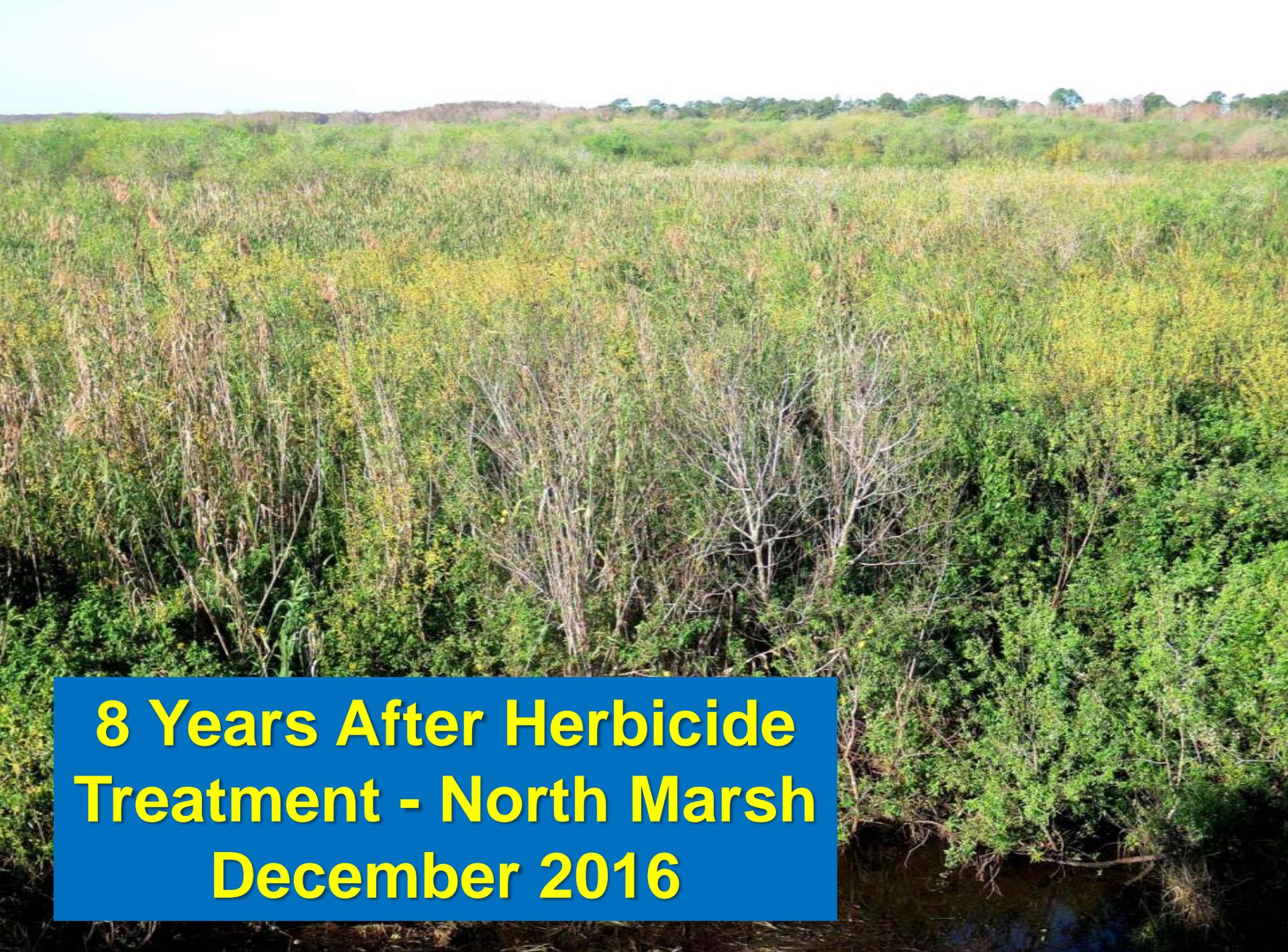
**2 Years After Herbicide  
Treatment - CREW Marsh  
Fall 2016**



**4 Years After Herbicide  
Treatment - CREW Marsh  
October 2015**



**7 Years After Herbicide  
Treatment - CREW Marsh  
November 2015**

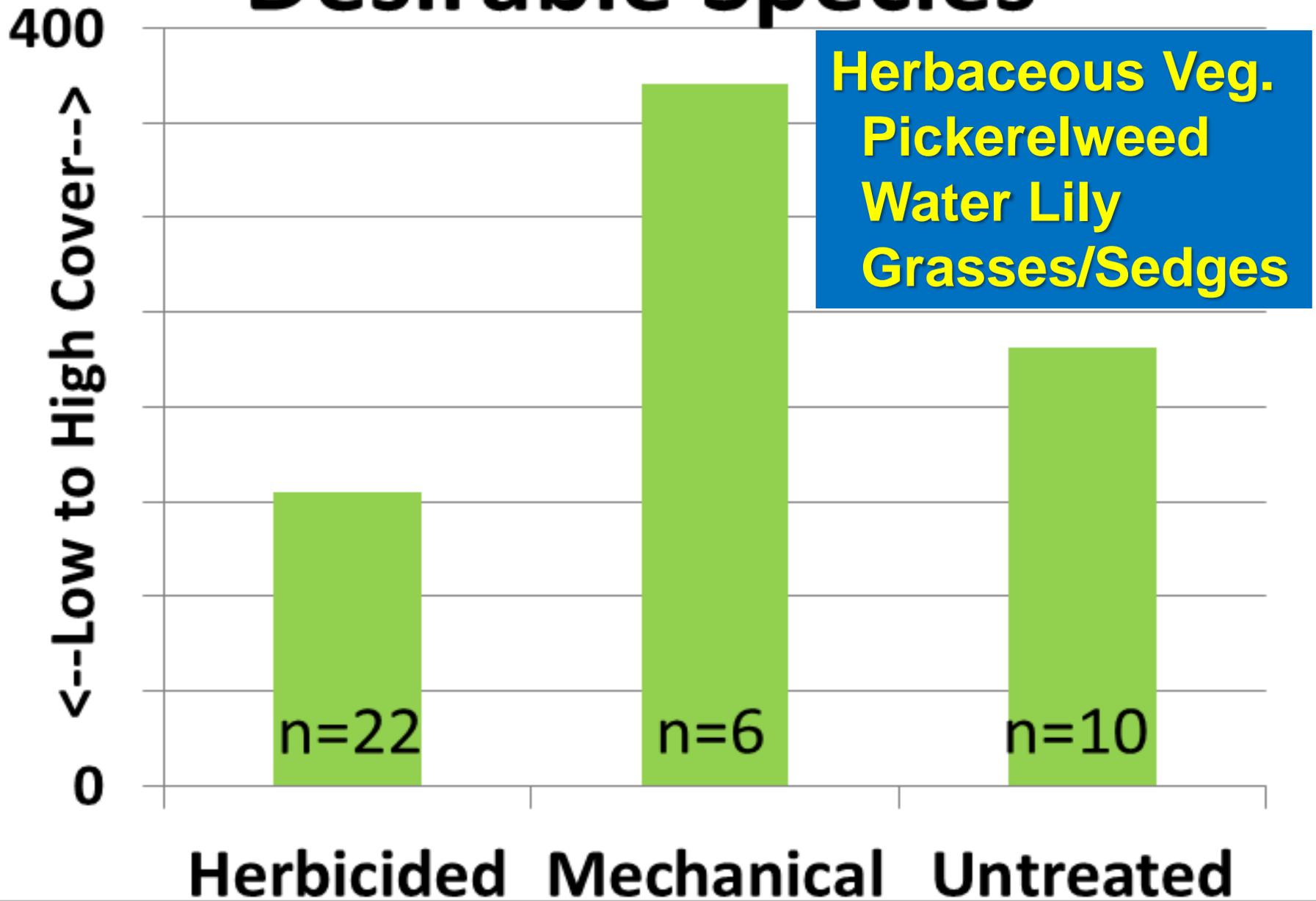


**8 Years After Herbicide  
Treatment - North Marsh  
December 2016**

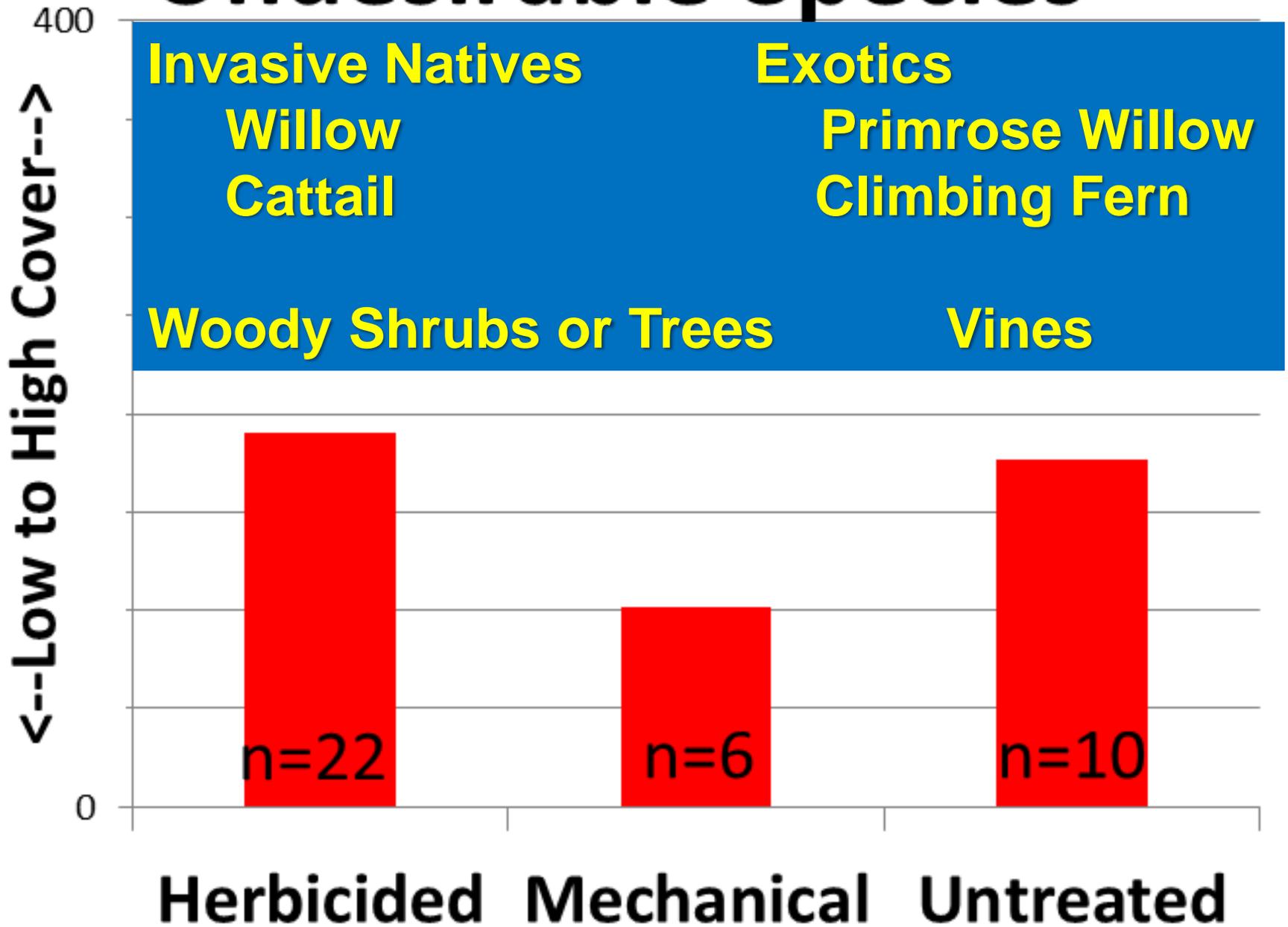
# ? Marsh Restoration ?

- **Killing the Willow?**
- **Getting Native Marsh Vegetation?**
- **Will It Burn?**
  - **Grasses and Sedges**

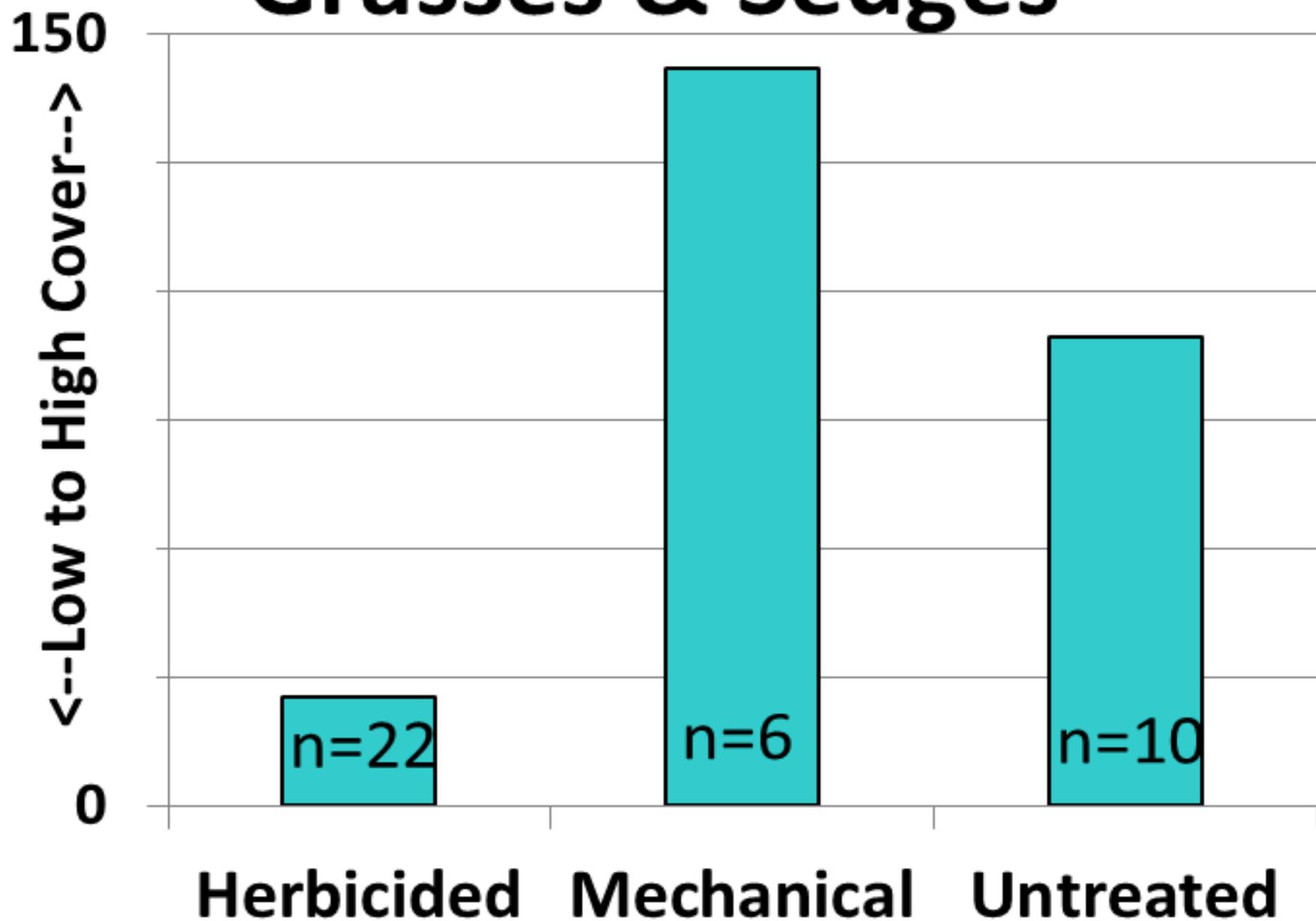
# Desirable Species



# Undesirable Species



# Grasses & Sedges





**Sawgrass 2 Years After  
Mechanical Treatment**

A photograph showing a dense field of green Maiden cane grass. The grass is tall and thick, filling most of the frame. In the background, there are several tall, thin trees under a clear blue sky. The overall scene is a natural, outdoor setting.

**Maidencane 2 Years After  
Mechanical Treatment**

# Conclusions

	<u>Herbicides</u>	<u>Mechanical</u>
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- Marsh  
Vegetation

Less

More

- Reducing  
Undesirable  
Vegetation

No

Yes

- Grasses and  
Sedges

Eliminating

Increasing

# Fire is the Best Way to Maintain Healthy Marshes



# **If Regular and Frequent Fire isn't an Option**



**For Either Healthy Marshes or  
After Willow Restoration.**



## Herbicide / Mechanical

- Expensive
- Some / Much Effort
- Anytime – Yes / No
- Anywhere – Yes / No
- Large / Small Areas
- More Invasive Species
- Short Term Solution

## Natural Succession

- Cheaper
- No Effort
- Anytime
- Anywhere
- Much Larger Areas
- Fewer Invasive Species
- Long Term Solution

**Jean  
McCollom**

**Kathleen  
Smith**

