



**Ecologically Sustainable**  
**Vegetation Management Practices on Roadside Rights-of-Way**

# **ECONOMIC BENEFITS**

Jeff Norcini

*OecoHort, LLC & Wildflower Specialist, Florida Department of Transportation*

# ACKNOWLEDGMENTS

## **Florida Department of Transportation**

Research Center • Office of Design • Office of Maintenance

Environmental Management Office • Maintenance Districts

Jeff Caster • Ashley Binder • Tim Allen • Sandra Bell • Patti Brannon

## **Florida Wildflower Foundation**



## **George “Les” Harrison**

Agricultural and Natural Resources Economist



Florida Department of  
**TRANSPORTATION**

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## Wildflower and Natural Areas Program

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### **District Wildflower Contacts**

[District Contacts](#)



<http://www.dot.state.fl.us/projectmanagementoffice/wildflowers>



# FDOT Wildflower Mgt. Prog. Pocusedure

Approved:



Department of Transportation

Effective: January 22, 2014

Office: Production Support

Topic No.: 650-030-001-h

## WILDFLOWER MANAGEMENT PROGRAM

### PURPOSE:

To increase the visibility and enjoyment of roadside wildflowers and scenic beauty. To effectively manage a diverse mix of roadside native flora and plant communities, and to support naturally occurring and planted wildflowers. To maximize the economic, ecologic, and aesthetic benefits from the State's investment in the roadside wildflower management program. To establish the responsibilities of the Florida Department of Transportation's (Department) Central and District office staffs.



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**Currently being revised; will include recognition  
of value of the FDOT wildflower program  
to pollinators**

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WILDFLOWER  
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Florida's only consistent  
source of funding for  
Florida's native  
wildflower initiatives



[FlaWildflowers.org](http://FlaWildflowers.org)



*Native wildflower  
research, education,  
and plantings*



# Wildflower Resolutions

- Conservation, preservation, and planting of native wildflowers
- Reduced mowing
- Impt. to pollinators of agric. crops
- Currently
  - 29 counties
  - 2 municipalities

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## RESOLVE to Protect Wildflowers

FLORIDA WILDFLOWER FOUNDATION

### Resolutions paint Florida green

Would you like to see more roadside wildflowers in your county? In 2009, a [model county resolution](#) was developed by Foundation members Eleanor Dietrich and Jeff Caster for just this purpose. It recognizes the historical, environmental and cultural significance of Florida wildflowers and pledges to conserve roadside wildflowers through management practices such as reduced mowing.

Wakulla County led the way by enacting a county policy to preserve roadside wildflowers. Soon afterward, various versions of the resolution were adopted by Gadsden, Leon, Lake, Marion, Brevard and Volusia counties. Click on each county to learn how this effort was implemented and who led it. Use this information to bring the resolution to your own county.

#### Model resolution

WHEREAS, the natural beauty of native wildflowers in \_\_\_\_\_ County can be enjoyed by everyone; can attract guests, and benefit commerce, environmental health, and public well-being; and

WHEREAS, enjoyment of native wildflowers is an occasion for all County and community leaders to unite for the benefit of everyone; and

WHEREAS, many naturally beautiful species of native wildflowers, including *Coreopsis*, the state wildflower, as depicted upon the State Wildflower license tag, are already prominently displayed along \_\_\_\_\_ County's state and county roadways; and

WHEREAS, increasing the visibility of native wildflowers in \_\_\_\_\_ County is consistent with the vision of the Comprehensive Plan, and goals of many individuals, businesses, and community-based organizations; [read entire model resolution](#)

Key:  
● Adopted  
● In Progress

# Florida Roadside ROW Habitat

Economically created via sustainable practices

- Reduced mowing overall
- Reduced/carefully timed mowing to preserve and increase density and expansion of:
  - Naturally occurring wildflowers
  - Native plant community remnants

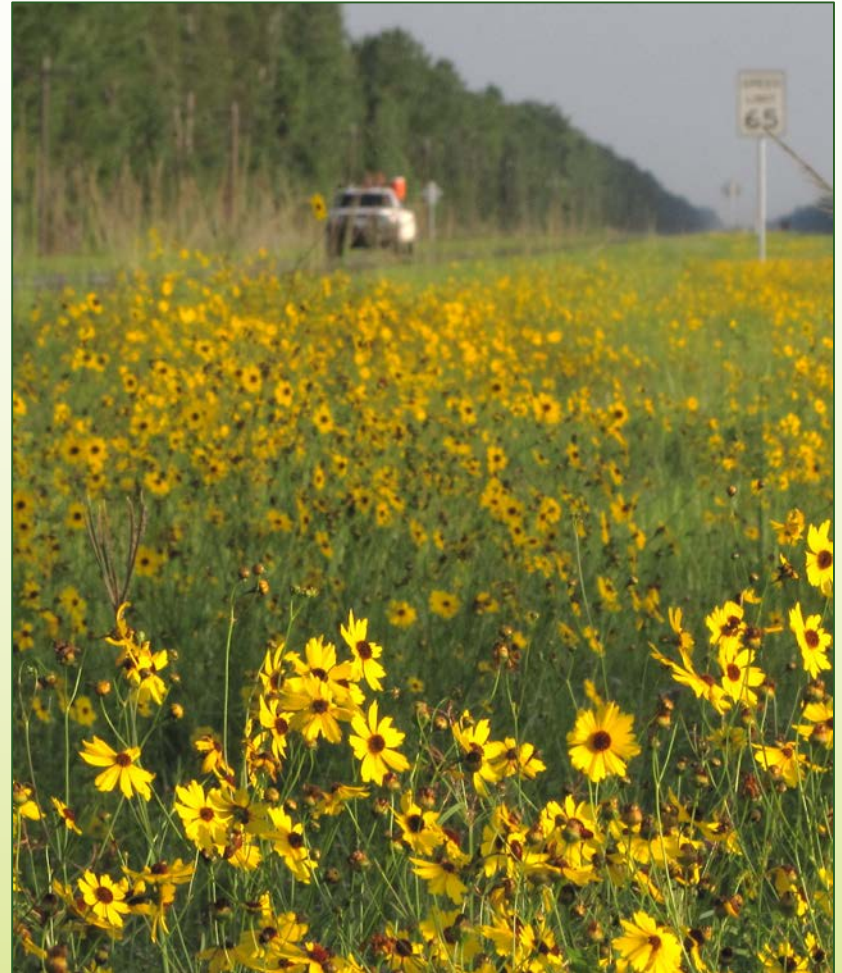




# Florida Roadside ROW Habitat

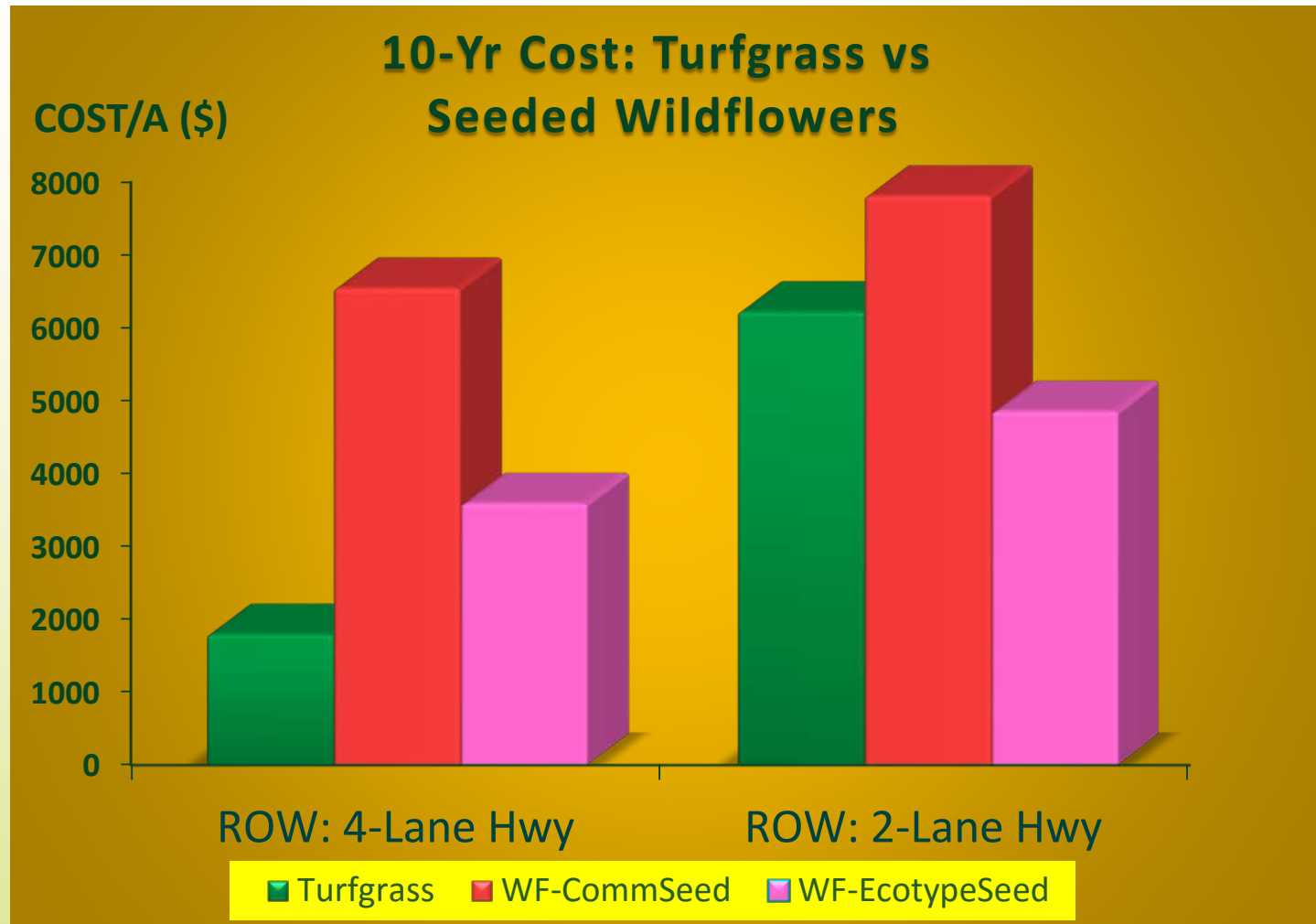
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# Turfgrass vs Seeded Wildflowers



# Reduced Mowing Pilot Study



# Florida Roadside ROW Habitat

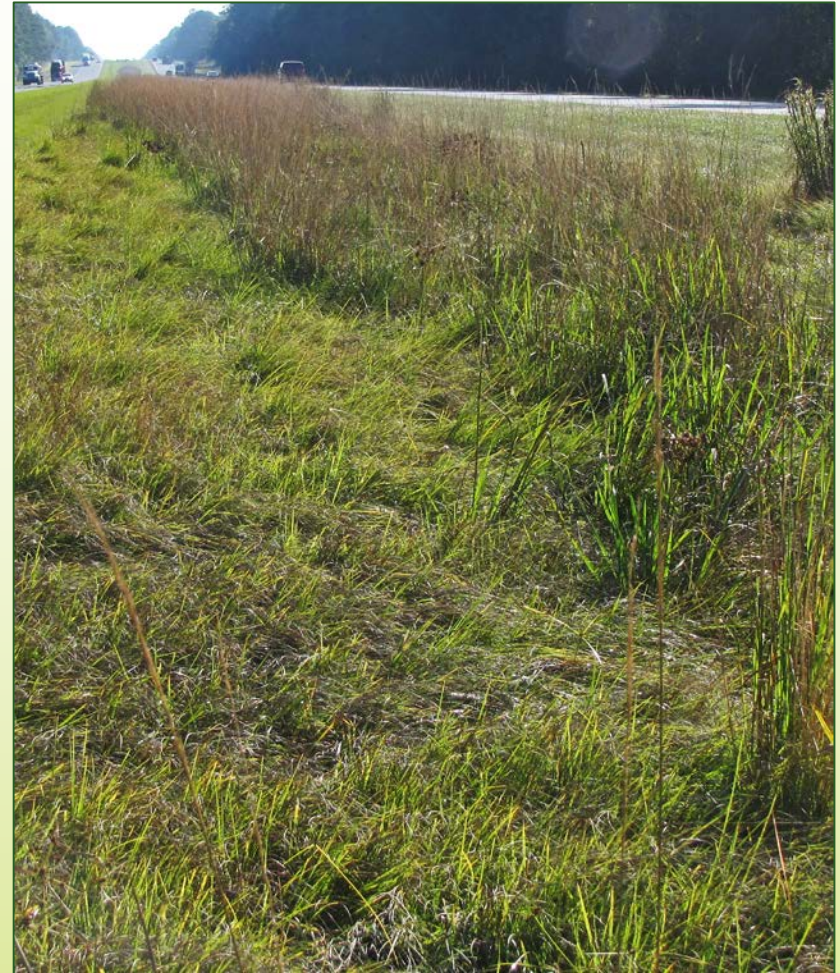
- Mowing limited to 10-15 ft until fall cleanup mowing
- Extra median mowing added in 2012/2013
- Vegetation surveys
  - Mar. – before 1<sup>st</sup> mow
  - Oct. – before cleanup





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# Reduced Mowing Pilot Study

## Results

- Mowing costs reduced \$1000+; less in 2012/2013
- Species diversity much greater in limited mow area
  - Limited mow area created seasonal wildlife habitat
- Aesthetics improved in the spring
- No detrimental effects on safety or erosion
- Normal highway operation not affected



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# Roadside ROW Ecosystem Services\*

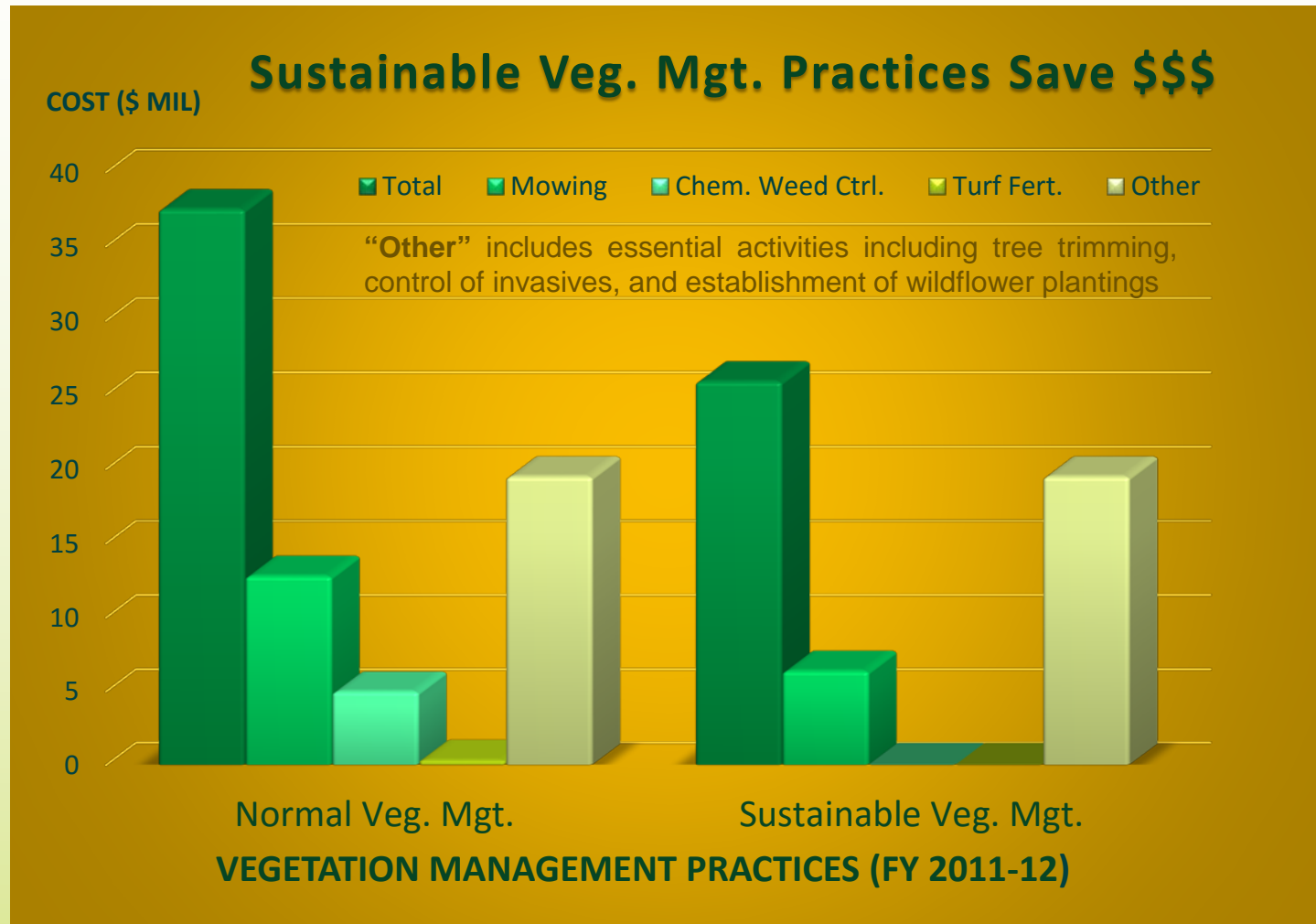
## Roadside Vegetation is an Asset

- Pollination and other services provided by insects
- Carbon sequestration
- Improved air quality
- Resistance to infestation by invasive species
- Runoff prevention
- Aesthetics
- Sense of place

\* Human benefits derived from ecosystems or their functions



# Sustainable Veg. Mgt. Reduces Costs



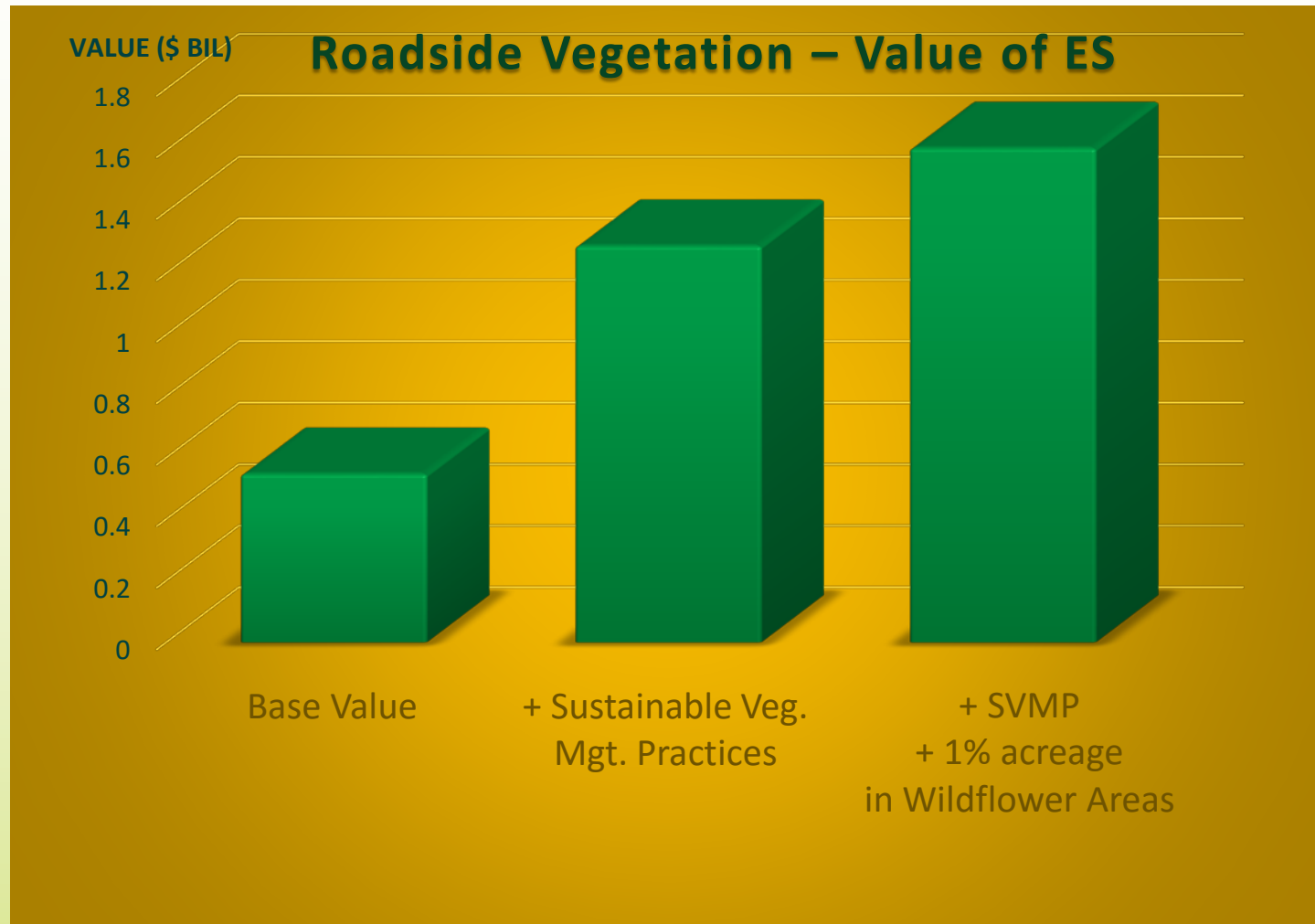


# \$\$\$ Value of Ecosystem Services

## Used Benefits Transfer Method

- Values estimated by transferring existing benefit estimates from studies already completed for another location or issue
- Estimates were calculated very conservatively

# Estimated Value of Ecosystem Services





# ....Can Lead To More Wildflowers

## Aesthetic Benefits At No Cost



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## Aesthetic Benefits At No Cost

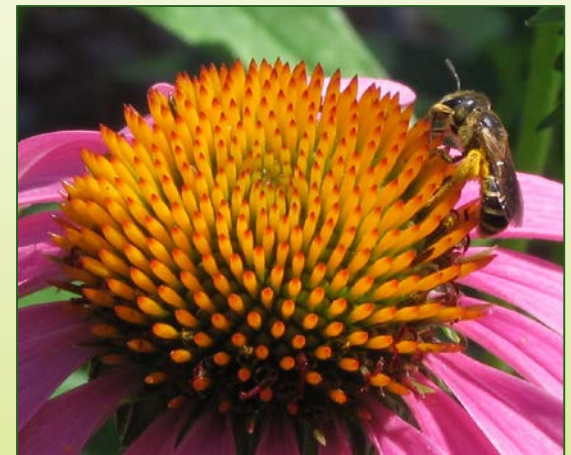




# \$\$\$ Value of Ecosystem Benefits

## Pollination/Insect Services

- Conservatively est. at \$34+ million
  - Sust. VMPs + 1% acreage Wildflower Areas – 2x value
- Native vegetation benefits pollinators and other insects
- Value could rise if honeybee colony collapse disorder remains an issue





# \$\$\$ Value of Ecosystem Benefits

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**As of late 2015 – ~3900 acres of  
Wildflower Areas (natural and planted)**

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# Value of Roadside Milkweeds

## Monarchs

Roadsides are last strongholds for many milkweed species in north Florida

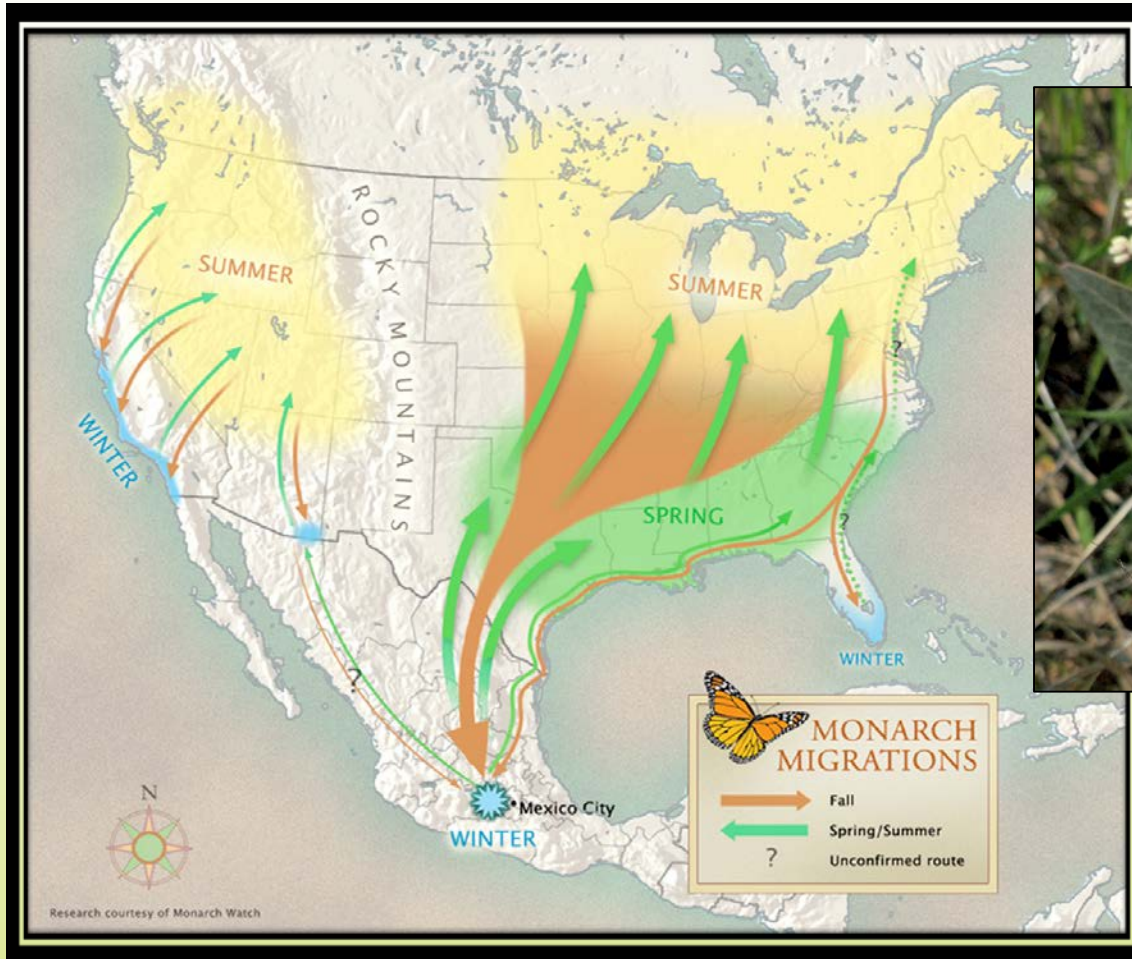


Pinewoods Milkweed (*Asclepias humistrata*)



# Value of Roadside Milkweeds

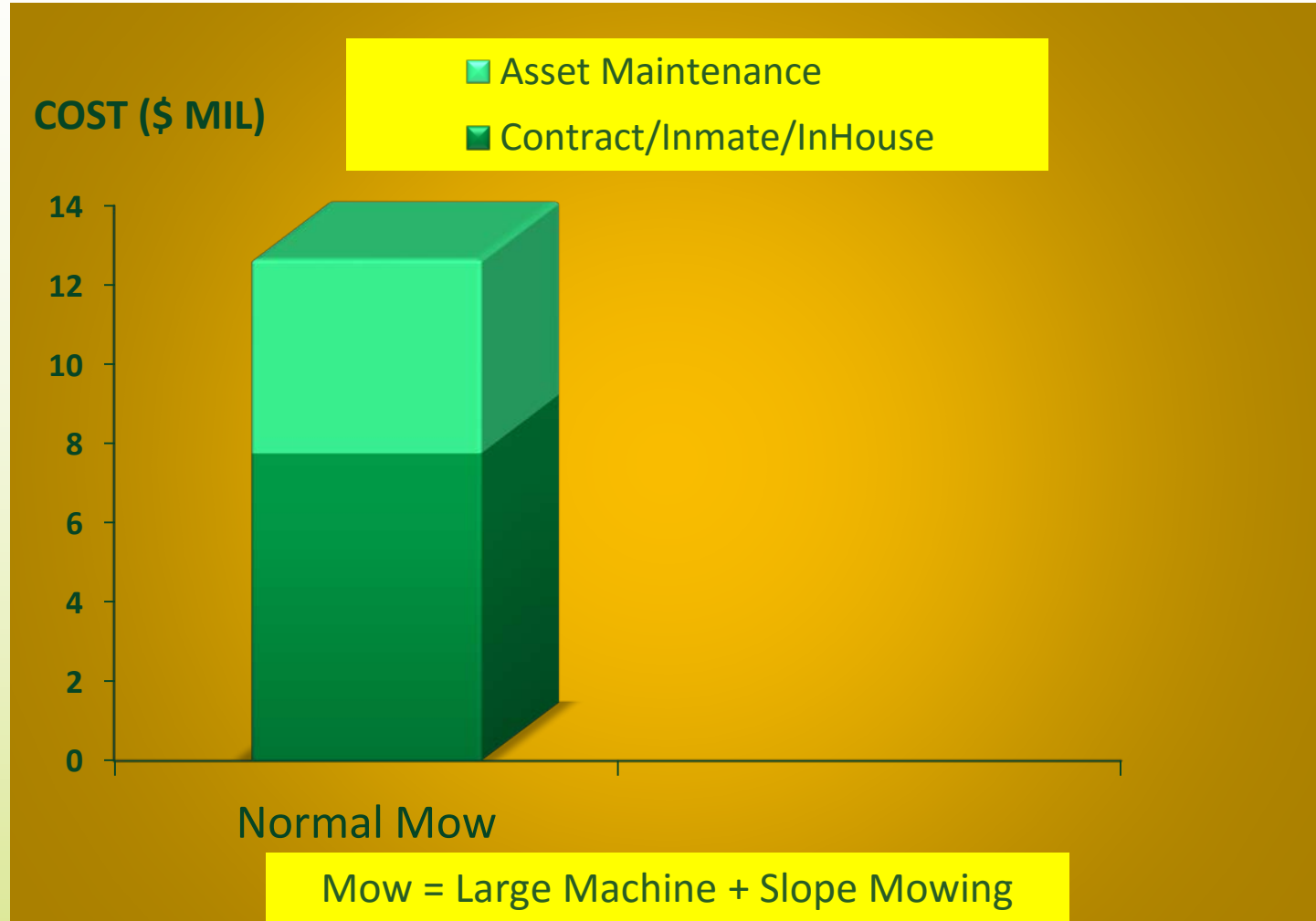
## Monarchs



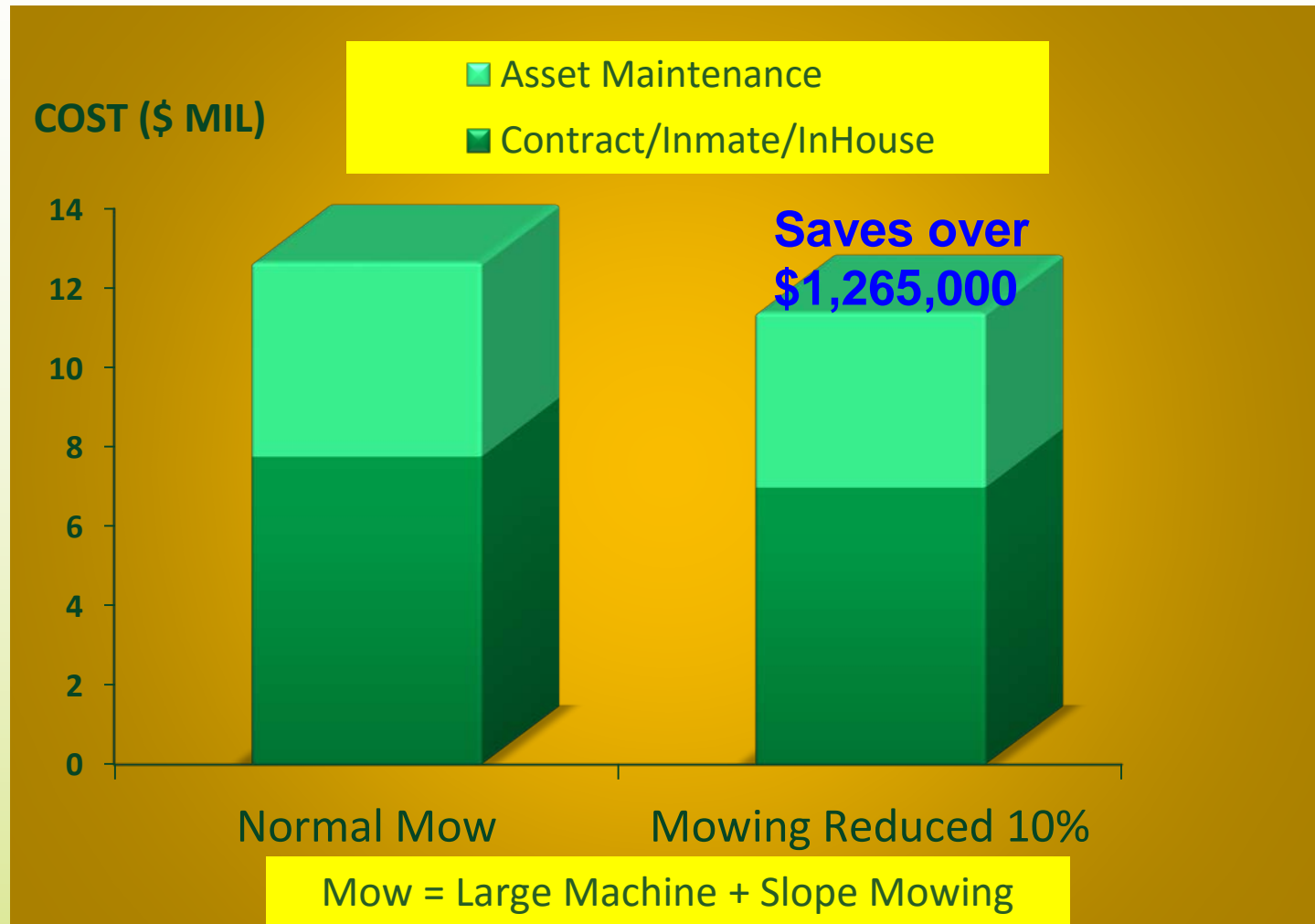
Pinewoods Milkweed  
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# Cost Savings – Mowing Reduced 10%



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# Cost Savings – Mowing Reduced 10%



**Each Maintenance District encouraged to reduce mowing 10%**

- **Area and/or frequency**



# Potential Research to Increase Habitat





# Value of Sustainable Veg. Mgt.

## Summary

- Substantial cost savings
- Ecologically beneficial
  - Can increase habitat/resources for pollinators
  - Substantially increases value of ecosystem services when reduced mowing is part of a sustainable vegetation management plan
  - Conserves fuel