



Incorporating Environmental Services Banking into Florida Farm Management and Business Plans

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Today's Presentation

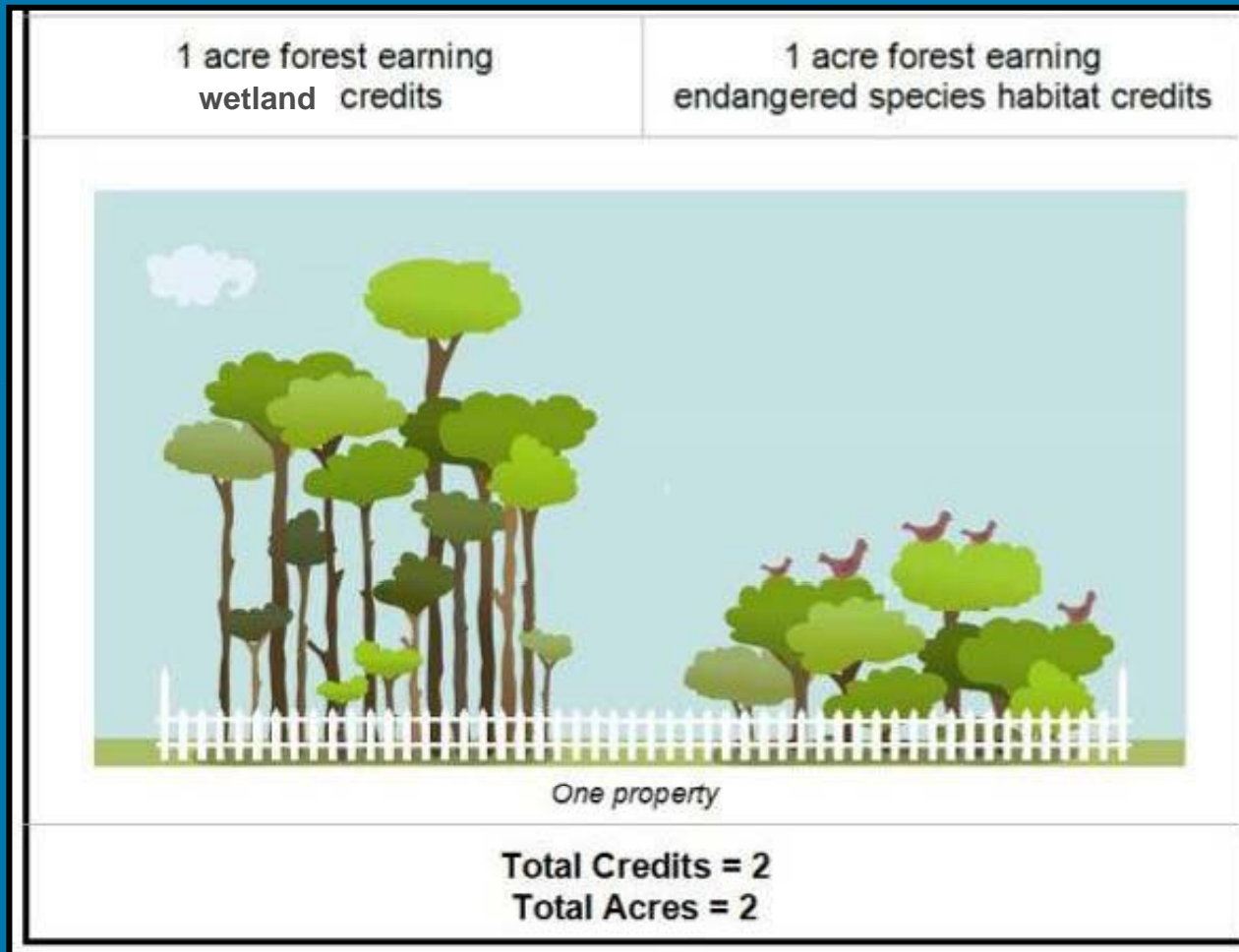
- Wetland & Species Banking
- Examples
- Compatibility with agricultural silvicultural land uses
- Approaches
- Ecosystem Services
- Local Government – Appropriate Role



Wetland and Species Banking

- Programs that foster the creation and sale of “credits” when wetlands or certain species are negatively affected by development
- Two types of credits (wetlands, species)
- Authorized by different programs
- Need to be spatially separate
- Similar: Carbon credits, authorized by multiple programs, more complex at this time

Spatial Separation of Credit Types



Compatibility with agricultural & silvicultural land uses

- Wetland banking, appropriate lands -
 - Typically restoration of habitat that's highly managed for non-native habitat purposes
 - e.g.; Pasture, pine plantation, etc.
- Species banking, appropriate lands -
 - Typically preservation & management of existing habitat
 - Sometimes restoration of habitat
 - e.g.; Native range, oak scrub, pine flatwoods

Examples

- Rancher has native range that is suitable habitat for gopher tortoises
 - Set up a GT receiving area under Florida Fish and Wildlife Conservation Commission process
- Pine Plantation owner has a native wetlands forest corridor that is suitable for panther habitat and fits into the dispersal zone
 - Set up Panther Conservation Bank under USFWS guidelines.

Examples

- Farmer has drained wetlands in a consolidated area that can be restored to pre-drainage functions
 - Set up a wetland mitigation bank un SFWMD and Army Corps regulations
- Rancher has drained wetlands, native range and scrub habitat that can be restored and managed with fire
 - Set up a wetlands bank and a species bank for gopher tortoises and scrub jays

Pricing examples

- Wetland credits ranging from \$25,000 - \$188,000 per credit – Statewide
- Panther credits – about \$1000/credit now, was \$1900-\$2000
- Gopher tortoises - \$900-\$1200/animal accepted

Approaches

- Assess existing lands for potential species or wetland opportunities
- Can they be managed as intended in perpetuity?
- Will ongoing bank area management be compatible with existing and likely future land uses?
- Need to assess the “Value” of the proposed bank using ecosystem services.

Ecosystem Services Approach

Trends in the world's ecosystem services over past 50 years

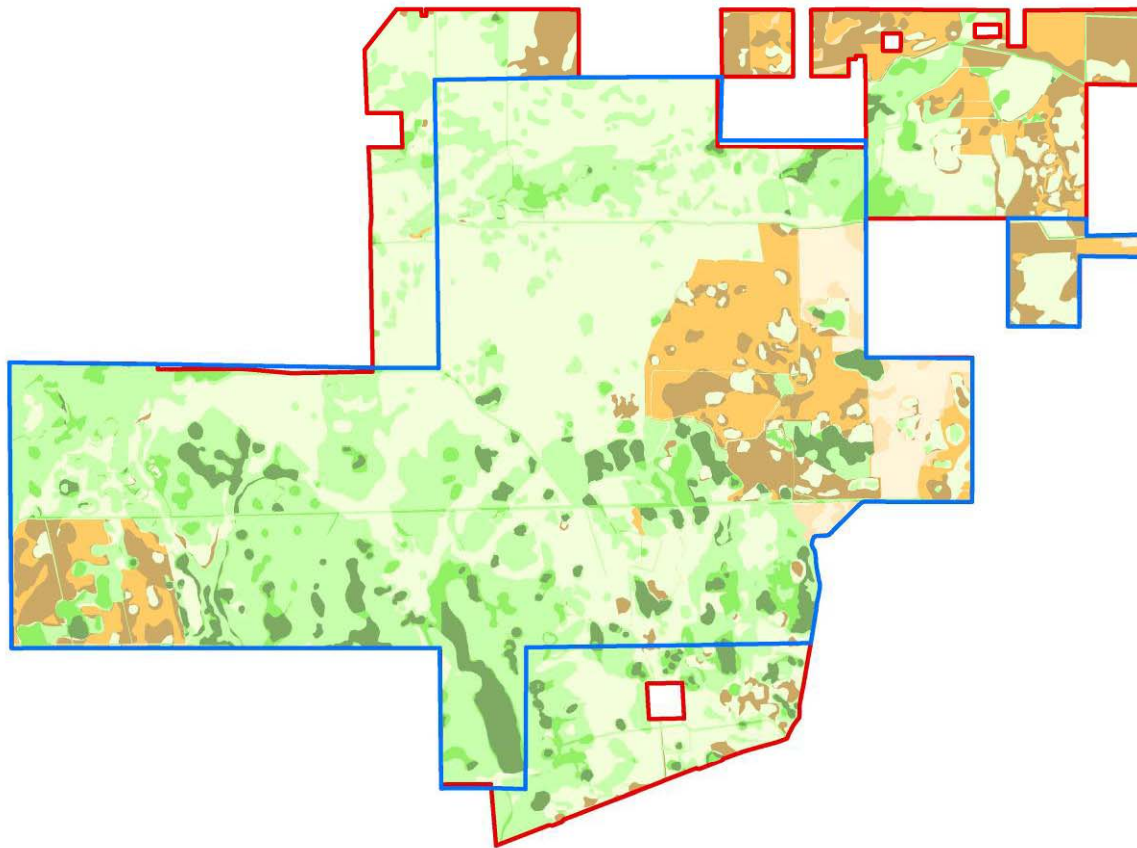
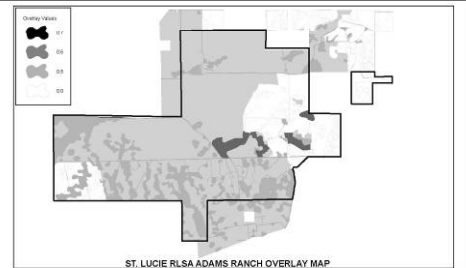
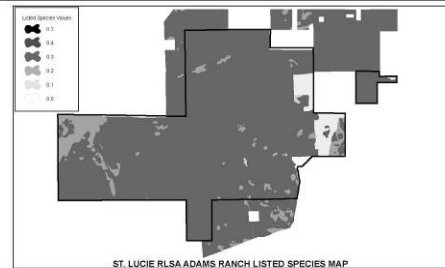
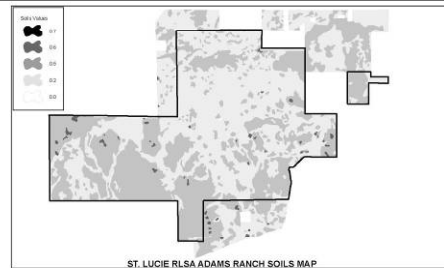
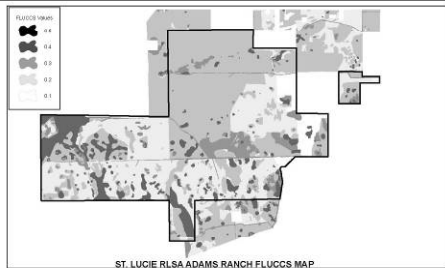
	Degraded	Mixed	Enhanced
Provisioning	<ul style="list-style-type: none"> • Capture fisheries • Wild foods • Biomass fuel • Freshwater • Genetic resources • Biochemicals, natural medicines, and pharmaceuticals 	<ul style="list-style-type: none"> • Timber and other wood fiber • Other fibers (e.g., cotton, hemp, silk) 	<ul style="list-style-type: none"> • Crops • Livestock • Aquaculture
Regulating	<ul style="list-style-type: none"> • Air quality regulation • Regional and local climate regulation • Erosion regulation • Water purification and waste treatment • Pest regulation • Pollination • Natural hazard regulation 	<ul style="list-style-type: none"> • Water regulation • Disease regulation 	<ul style="list-style-type: none"> • Global climate regulation (carbon sequestration)
Cultural	<ul style="list-style-type: none"> • Ethical values (spiritual, religious) • Aesthetic values 	<ul style="list-style-type: none"> • Recreation and ecotourism 	

Source: Adapted from the Millennium Ecosystem Assessment. 2005. *Ecosystems and Human Well-being: Synthesis*. Washington, DC: Island Press.

Ecosystem Services

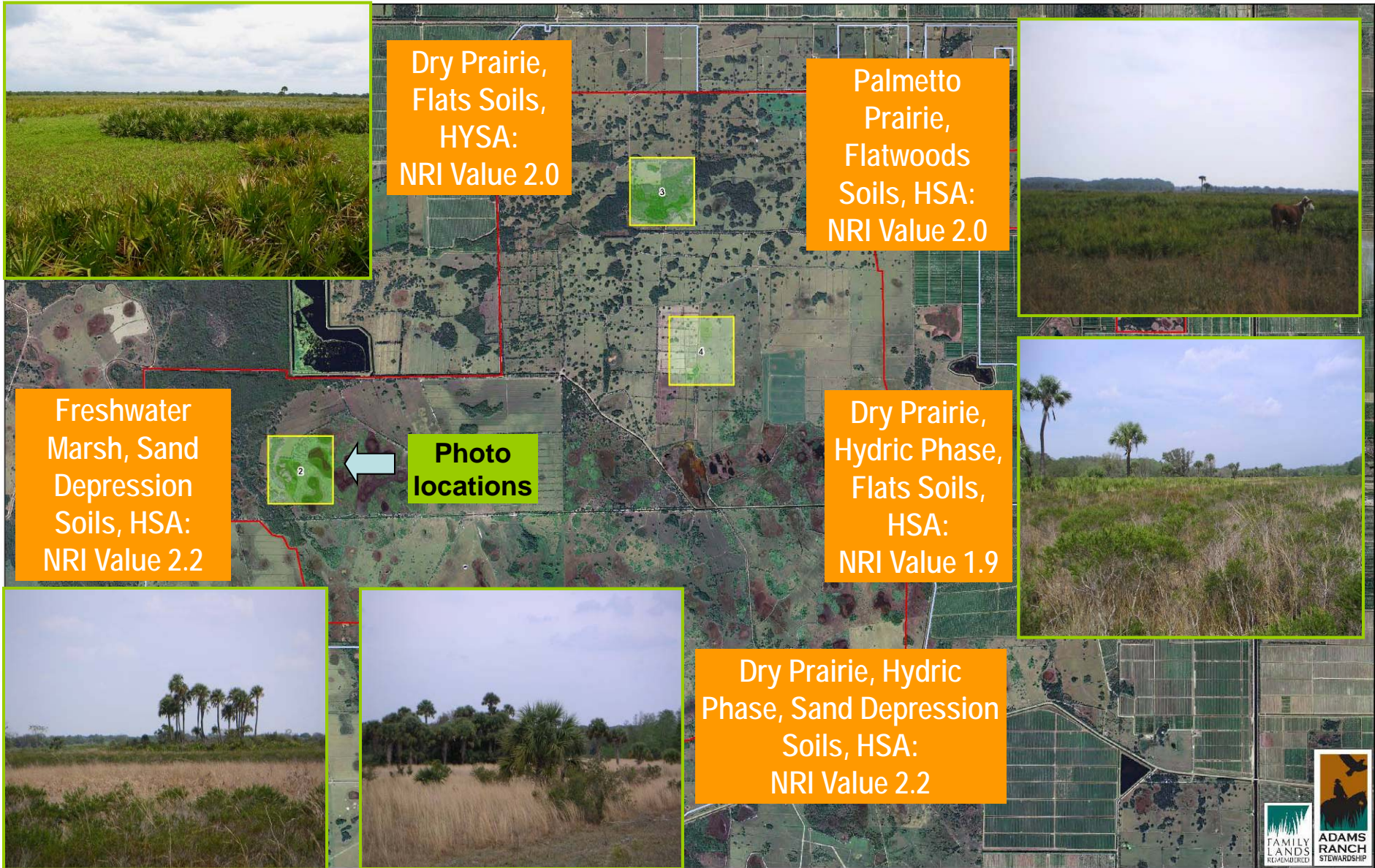
- Public Data Sources, Field Data Collection & Data Analysis
 - Land Use - SFWMD
 - Drainage Basins – SFWMD, FDEP, USGS
 - Flood Zone – FEMA
 - Wetlands – NWI
 - Soils – USDA NRCS, NSLP
 - Ecological Communities – USDA NRCS
 - Species Data – FNAI, USFWS, FFWCC,
 - Habitat Conservation and Managed Areas – FWC SHCA, FNAI
 - Aerial Photography – LABINS, DOT, UF
 - Integrated Wildlife Habitat Ranking System - FWC

Ecosystem Services



Created: Monday, August 16, 2021, 9:27:58 AM
 Location: C:\Projects\0495-St_Lucie_RLSA\0495-St_Lucie_RLSA\0495-St_Lucie_RLSA_Final_COMPOSITE_081621_01885.mxd

Dry Prairies Area



Dry Prairie,
Flats Soils,
HYSA:
NRI Value 2.0

Palmetto
Prairie,
Flatwoods
Soils, HSA:
NRI Value 2.0

Freshwater
Marsh, Sand
Depression
Soils, HSA:
NRI Value 2.2

**Photo
locations**

Dry Prairie,
Hydric Phase,
Flats Soils,
HSA:
NRI Value 1.9

Dry Prairie, Hydric
Phase, Sand Depression
Soils, HSA:
NRI Value 2.2



ADAMS RANCH STEWARDSHIP SENDING AREA NRI CREDIT AREAS
ST. LUCIE COUNTY RLSA

GENERAL NOTES
This map was prepared by the St. Lucie County Resource Planning and Conservation Department. It is intended to provide a general overview of the Adams Ranch Stewardship Sending Area. It is not intended to be used for legal purposes. For more information, please contact the Resource Planning and Conservation Department at (888) 367-7263 or visit our website at www.stluciecounty.com.



Management Factors

- Can be managed so that grazing and species mitigation are compatible?
 - Specifics vary by species
- Can fire be used?
- Can wetland restoration areas be used as part of the water management system?
- Can wetland restoration areas be precluded from grazing and water treatment?

Business Approaches

- Overall
 - Farmer/Rancher as banker
 - Joint venture with a banking company
- Set-up (Typical)
 - Consultant &/or Banker
- Sales
 - Owner, Consultant, Sales broker, &/or Banker
- Management
 - Owner, Consultant, &/or Banker

Constraints on bank sites

- Land must be placed into a permanent conservation land use, typically a conservation easement
- An endowment may need to be set aside
 - Up-front for wetlands
 - As credits are sold for species
- Need to be managed in the intended state in perpetuity affecting
 - Fire management
 - Water management
 - Types of land uses

Local Government – Appropriate Role

- Don't duplicate existing state and federal programs
- Ensure that comp plan is compatible with banking practices,
 - preferably *encouraging* any program that results in an increase in lands managed for wetlands and species values.
- Tax reduction/exemptions for reduced land development potential

Thank you

*Graphics & Photos courtesy
of:*

WilsonMiller

The Adams Ranch

*Electric Power Research
Institute*

World Resources Institute

Stetson College of Law

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