Building a Markets for Environmental Services: Challenges Addressed by the Florida Ranchland Environmental Services Project

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Environmental Concerns in the NE

Lake Okeechobee Exposed Vegetation by Water Stage:
Stage Contours in Feet (NGVD 29)

- Stage: 14 feet
  - Acres of Exposed Littoral Zone: 21,791

- Stage: 13 feet
  - Acres of Exposed Littoral Zone: 59,831

- Stage: 12 feet
  - Acres of Exposed Littoral Zone: 62,150

- Stage: 11 feet
  - Acres of Exposed Littoral Zone: 95,503

- Stage: 10 feet
  - Acres of Exposed Littoral Zone: 100,801

Legend
- Exposed littoral zone
- Inundated littoral zone

Data Source: USGS Bathymetric Survey, 2007
Vegetation Map by ThoroSciience, Inc., 2007
One strategy
A Complimentary Strategy

• On- Ranch Water Management
Open landscapes

Ranching as a business

Multiple income sources
Motivating Question

Would ranchers be willing and able to provide water management services as an additional ranch enterprise, if it offered another income opportunity?
Motivating Questions

Who would pay for on-ranch water management services?

How would the payment be made?

- Cost share
- Easements
- PES
PES Design Accomplishments

- Created Vision
- Identified a Buyer
- Defined Eligible sellers
- Defined Environmental Services
- Documentation for Payment
- Calculated Service Offers
- Established Payment
- Regulatory Compliance
Addressing Design Challenges

An Iterative Process
Create a Vision for a Payment for Environmental Services Program

Extensive *working ranch landscapes*, relying on modification to existing water management structures and strategies, enter into *fixed term contracts* to provide *documented water related environmental services*, *above and beyond regulatory requirements* creating a new *profit center* for ranch enterprises.
Market-based principles

Buyers choose what ranches to contract with based on assessment of service potential

Sellers choose level of services to produce and how to produce service

Payments are made when seller provides documentation that the service has been provided during the contract period.
Identify the Buyer
Specify Eligible Sellers

- Land Use
- Location
- Compliance
Retain Water: Water held back in wetlands, ditches and in the soil profile, with the release of water in a different volume, phase and pathway (seepage) than would be the case without the change.
Define Environmental Services

Nutrient Removal: Pounds of nutrients removed from public waters
Documentation for Payment: The Initial Thinking

Measure Service in Real time
Payment at end of year

Dynamic Baseline and Storage

- Top of Structure
- Existing Ditch Elevation
- Water level in wetland
- Water level below weir structure

Stage or Volume vs. Time
The Push Back

- Cannot only pay for service if it rains
  - For investment planning, a rancher needs a guaranteed minimum annual payment over the contract lifetime regardless of rainfall
  - For budget planning, an agency needs to accurately predict future budget outlays and be able to commit funds to future payments
Option Contract

- Agency-Buyer is acquiring an option
  - rancher-seller will retain water not to exceed XXX (specified in contract), and not to be less than pre contract stage.
  - Rancher seller will pump water when canal is at ZZ feet
- Agency-buyer agrees to pay rancher-seller a fixed amount per year for the option to retain water.
- Payment is based on estimated average annual water retention offered by the rancher seller ($/af retained)
Two types of WMAs for Contracting
Predict Service Level for Contract

- Historical rainfall records
- Site characteristics
- Contract life
- Simulation of stage and volume
Above and Beyond in Contract

- For Crediting Service
- Post Contract Requirements
Documentation for Payment

Measurement

Record Keeping
Establishing the Payment

Agency-buyer reservation price

Price agreement
- Fixed price offers
- Low bid
- Case by case negotiation

Seller-rancher reservation price
Reservation Price Thinking

- **Agencies reservation price - willingness and ability to pay**
  - Cost of public alternative
  - Immediacy
  - Permanence
  - Certainty
  - Magnitude and location of service (targeting)
  - Budget exposure and management

- **Ranchers reservation price - willingness and ability to sell**
  - Cost of production on the ranch
  - Competitive return on investment
  - Mesh with other ranch operations
  - Cash flow certainty
Accommodate Regulatory Requirements

- End of Contract Protections
  - T&E protections through 404 RGP
  - Wetlands footprint (state and federal)

- Streamlined permitting
  - T&E avoidance (FWS – USDA consultation matrix)
  - Section 404 – RGP to expedite approval
  - ERP and other state permits
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