CONSERVATION INNOVATION GRANTS

Final Report

Grantee Name: World Wildlife Fund (WWF)

Project Title: "A Market-Based Program for Environmental Services on South Florida Ranchands" (aka Florida Ranchlands Environmental Services Project)

Project Director: Sarah Lynch

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Period Covered by Report: October 1, 2005-Sept 30, 2009

Project End Date: September 30, 2009

Summary of the 3 year project (taken from the CIG proposal)

"Rely on an existing collaborative process of ranchers, public agencies and public interest groups to implement and evaluate project results. Project activities include: four volunteer ranchers actively managing Water Management Alternatives (WMA) to produce environmental services of phosphorus control, water storage, and or habitat enhancement; developing practical and credible ways to measure different environmental services generated by management of the WMA; refining contract language between landowners and Florida state agencies; establishing performance documentation requirements and payment practices required for the scale –up of a market based program in the watershed.

Executive Summary

1. **Key Project Accomplishments in the Design of a Payment for Environmental Services (PES) Program** (over the 4 year reporting period of October 1, 2005- Sept 30, 2009)

- 8 ranch demonstration Water Management Alternatives (WMAs) were designed, implemented and are operational:
    - 4 of the WMAs were operational in 2007 and 4 were constructed in 2009 and will be operational in 2010
    - The 8 WMAs serve as demonstration projects for the production of environmental services and provide proof of concept to both rancher-sellers and state agency buyers and have generated data on water quality, quantity, soil characteristics; and or vegetation and forage quality data contributing to refining cost-effective PES documentation methods.
- Achieved broad consensus by state-agency buyers and rancher-sellers on a Payment for Environmental Services (PES) program design to be implemented in the Northern Everglades as part of Everglades Restoration and protection of the St Lucie and Caloosahatchee Estuaries;

- Established the preliminary design of key elements of a PES program contract including; RFP approach; eligibility requirements; service estimation procedures, etc.

- Received a commitment from the potential "Buyer" of these environmental services, in this case the Governing Board of the South Florida Water Management District (SFWMD), to implement (rules, budget, administer) a PES program for dispersed water management, if outstanding issues can be resolved;
- The US FWS, US ACOE and USDA-NRCS are collaborating with the FRESP team to design and implement programmatic approaches to facilitate a PES program implementation;

2. Key project lessons and products of potential use in other regions/agricultural systems.

1. The necessary pre-conditions for establishing an innovative PES program on working agricultural lands in another region/sector include:

- A commitment to pay for service as a profit opportunity and not pay for practice as a cost offset;
- A buyer of the service(s) that is willing and able to put sustained money on the table;
- Sufficient potential sellers of the service(s) that are willing and able to produce the service(s);
- Where forces for change-- regulatory, economic, political -- are sufficiently compelling to motivate enough players to be willing and open to a new approach.

2. **The collaborative process used by FRESP to design and field test a PES program design is critical to successful implementation.**

- Identify a buyer and work with them to identify the service(s) they value and documentation requirements;
- Build and maintain a diverse partnership of that buyer with sellers and civil society (it takes time & money but its critical);
- Assure that the partnership includes social entrepreneurs in all constituencies (producers, private sector, state and federal agencies and civil society) committed to the PES vision;
- Learn by doing – get real demonstration projects on the ground and use their experience to design the program;
- A full time project manager / cat herder / neutral intermediary and a practically-oriented technical team are essential for designing a program acceptable to buyers and sellers.

3. Other transferrable FRESP tools and concepts

- The approach, organization and key elements in the FRESP contract design.
- The decision support tools developed by FRESP inclduing: the Potential Water Retention Model (PWRM); the Ranch PES Financial Analysis Tool, and other documentation proxies; and
- The process and programmatic approaches developed to address Federal wetland jurisdictional and T & E issues

Final Report

I. Key Project Accomplishments in the Design of a Payment for Environmental Services (PES) Program.

8 ranch demonstration Water Management Alternatives (WMAs) were designed, implemented and are operational:

The FRESP collaborators are designing a *payment for environmental services* (PES) program for implementation by agencies of the state of Florida. The lessons learned from the 8 demonstration projects as well as many other FRESP activities will provide proof of concept and useful information that will help guide the design of a PES program if the state agencies decide to expand a PES program throughout the Northern Everglades.

Achieved broad consensus by state-agency buyers and rancher-sellers on a Payment for Environmental Services (PES) program design to be implemented in the Northern Everglades as part of Everglades Restoration and protection of the St Lucie and Caloosahatchee Estuaries.

Simply stated, in a PES program state agencies would sign fixed term contracts to pay landowners in the Northern Everglades area (mostly the Lake Okeechobee watershed) to provide documented water and Phosphorus (P) retention services. A PES program is an opportunity for ranchers to make a profit producing water and phosphorus retention – in ways that work best for their ranch business.

Depending on the site characteristics some ranchers will be paid for phosphorous removed from off ranch water (ex: the Lykes WMA site). However, in most places payments will be for the amount of storm water retained (ex: Buck Island, Williamson, Payne, Syfrett, Alderman, Wohl and Lightsey ranch WMA sites). Projects that retain water would be designed to assure that they will also remove phosphorous from storm water, but there will be no effort to measure the real time reduction because of the cost and difficultiy in measuring nutrient load reduction on working ranchers in FL.

Ranchers would retrofit and expand existing flood control or drainage infrastructure common on ranchlands such as berms, pumps, culvert with riser board structures, etc., or combinations of practices to retain instead of drain water and limit flooding. The program would pay for the volume of water kept in rehydrated wetlands, ditches and the soil profile that either evaporate or seep through the groundwater system.

In a PES program ranchers choose how much water they will be willing to retain after an analysis of their own site, compatibility with other ranch operations, the need for management changes (e.g. such as planting water tolerant grasses), and the profitability of selling water retention. Agencies of the state will choose which ranches to contract with, based on an assessment of service potential. The selected ranchers and the agency buyers enter into a fixed term contract that provides a specified payment each year for services provided over the life of the contract.

How Might the PES Program Operate?

The FRESP team's current vision of how a PES program in the Northern Everglades could work is as follows:

II. The buyer, at this point the SFWMD, announces a request for proposals (RFP) to retain water and/or phosphorous. The RFP specifies all relevant contract details (eligibility requirements, documentation requirements, method for estimating potential services, exit clauses, renegotiation clauses, price to be paid, etc.).

III. Before submitting a proposal the ranch parcel that includes the proposed WMA must be in compliance with existing water quality regulations. Specifically, ranch parcel owners would be on schedule in implementing a USDA NRCS Conservation Plan or a Notice of Intent to implement BMPs identified through a Florida Cattlemen's Water Quality BMP assessment protocol.

IV. Eligible ranchers would submit a pre-application packet to USDA NRCS staff, or designated technical service providers, for review prior to making a formal response to the RFP. The pre-application review will confirm the eligibility of the applicants parcel, make a general assessment of the technical feasibility of proposed projects, and assure that the proposed projects will comply with federal and state regulatory provisions associated with participation in the PES program, such as wetlands and threatened and endangered species protections and water use permitting. Currently, under development is a General Permit from the USACOE for compliance with fill permitting requirements of section 404 of the Clean Water Act. Related to the GP development is the development of a US FWS and NRCS list of accepted practices that will be presumed to be consistent with the protections required for threatened and endangered species. In particular, a project covered by the GP would allow the landowner to return to pre-project water management conditions at the end of the contract.

V. After screening by USDA NRCS staff or designated technical service providers, ranchers would proceed to develop a complete project proposal. The proposal would include an assessment of their sites' potential to provide the services requested in the RFP. Low cost and easily applied tools (a Potential Water Retention Model (PWRM) and its equivalent for P reduction) are currently being developed to use in the assessment of potential water and phosphorus retention on ranches. Technical assistance to use these tools may be required, and strategies for engaging the private sector and the agencies in providing that assistance are being developed. As currently conceived, ranchers would include in the response to the RFP the payment they would require for making changes in ranch water management. A financial analysis tool under development will be offered to help ranchers prepare a bid that reflects their investment, operation and maintenance, and opportunity costs and their profit expectations.

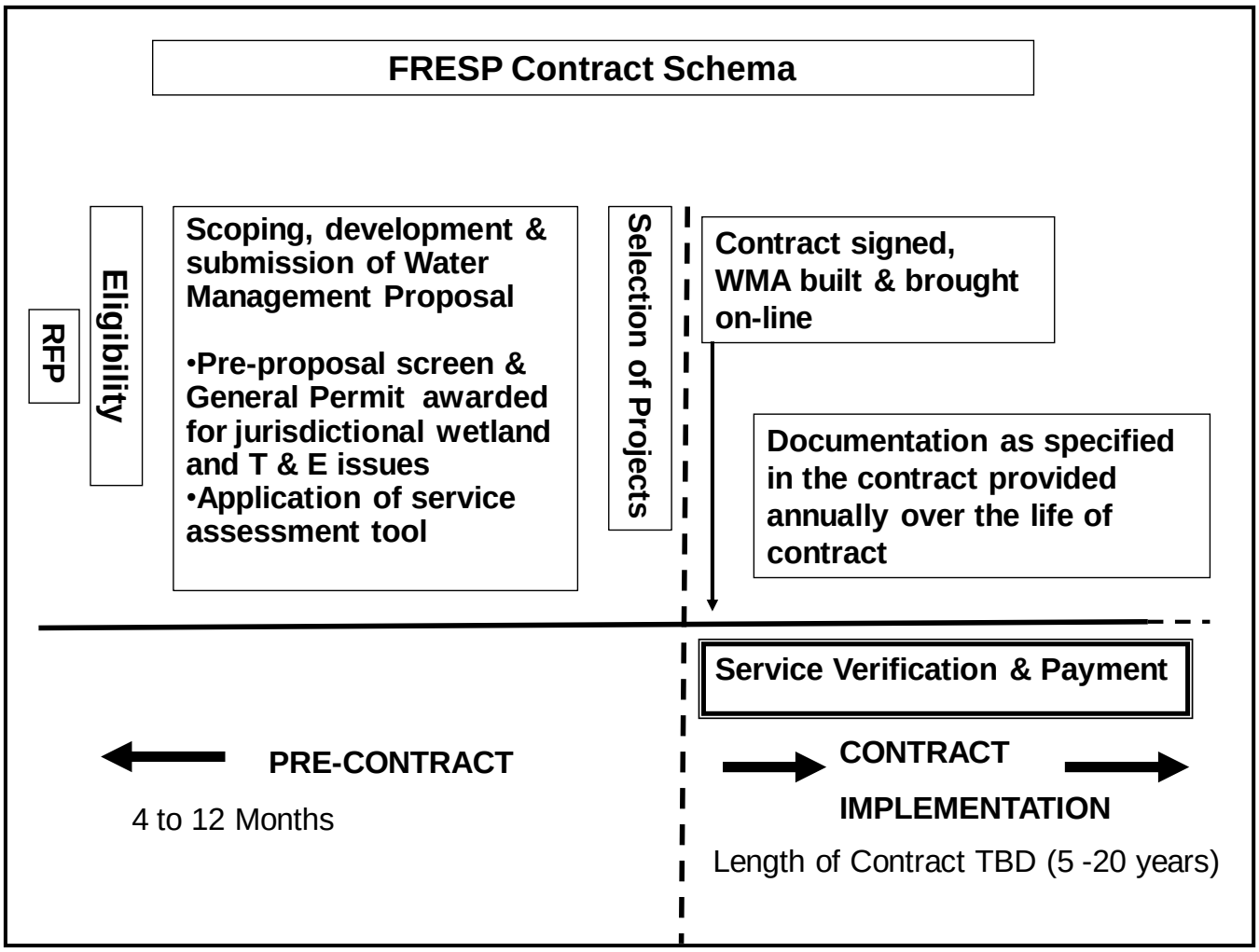
VI. The SFWMD will make a selection among rancher applicants using criteria including, but not limited to, volume of water that can be retained and P retention potential and the cost effectiveness of each proposal based on the service generated and the payment requested by the rancher. Key contract provisions include: 1) buyers will pay for the option to retain

water and phosphorous so that ranchers are paid a specified annual amount over the life of the contract regardless of rainfall; buyers may request that ranchers hold less water in any year, but may not require holding an amount that exceeds what is called for in the option; buyers and sellers agree to the documentation and record keeping requirements that will be a condition for receiving payment; the seller confirms that they have meet all the conditions required for the project to be permitted under the conditions of the General Permit.

VII. With a signed contract in hand, the rancher implements any construction or other land and water management actions that will be needed to provide the services. At the time of construction, measurement equipment that may include stage recorders, pump flow meters and rainfall gages are put in place. Other records, such as nutrient and pesticide applications, also will be kept for documentation.

Payments are made over the life of the contract. In order to get paid some level of documentation will be required to document that the measured water actually retained is consistent with the rainfall and/or pumping regimes of the water year.

VIII. At the end of the contract period the site can be shut down according to rules specified in the contract, or the contract can be renegotiated if both the agency and the ranchers agree to an extension.



IX.

- Received a commitment from the potential "Buyer" of these environmental services, in this case the Governing Board of the South Florida Water Management District (SFWMD), to implement (rules, budget, administer) a PES program for dispersed water management, if outstanding issues can be resolved;
- The US FWS, US ACOE and USDA-NRCS are collaborating with the FRESP team to design and implement programmatic approaches to facilitate a PES program implementation;
- 8 ranch demonstration Water Management Alternatives (WMAs) were designed, implemented and are operational:
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    - The 8 WMAs serve as demonstration projects for the production of environmental services and provide proof of concept to both rancher-sellers and state agency buyers and have generated data on water quality, quantity, soil characteristics; and or vegetation and forage quality data contributing to refining cost-effective PES documentation methods.

X. Field Team data collection and management. The Field Coordinators, the project hydrologist, Nitin Singh and Patrick Bohlen accomplished the following:

XI. Documentation Team progress in field testing methods for documenting services.

XII. **Program Design Team activities.** Len Shabman and Sarah Lynch make up the Program Design Team and activities completed during this reporting period relating to designing a payment for environmental services program included:

Progress made in the development of tools—the Potential Water Retention Model and a ranch financial assessment spreadsheet – to facilitate contracting between buyers and sellers.

The PWRM applied and calibrated to two WMA sites. Brian McMahon and Randy McCafferty from EWR Inc. continue their work developing and refining the PWRM. The PWRM is a tool FRESP is developing that will be used to estimate the water retention potential of a new WMA site that will be used in the RFP selection process. EWR has finished estimates for Williamson and Alderman-Deloney and used 2007 and 2008 hydrologic data from those sites to validate the model. The FRESP Doc Team has met with Brian and Randy twice to review progress to date in developing the model and output. The FRESP Field Team, especially Nitin, has been working closely with EWR to organize hydrologic and other data needed from each WMA site to run the model. A next priority for EWR is to apply and calibrate the PWRM to BIR and then to the four new WMA sites to generate an estimate of the potential water retention of each WMA site in acre feet.

Output of the PWRM used as input to SFWMD screening model for the River of Grass Initiative. Over a 2 week period in early April Brian and Randy assisted Sarah and Len in an intensive effort to provide applications of the PWRM to SFWMD modelers on short notice so that they could generate parameters to represent FRESP projects in RESOPS, the screening model being used in assessing the ROG scenarios.

Initiated design of a ranch financial assessment tool. In December 2008 Len and Sarah initiated a consultancy with Dr. Robert Beamer, an agricultural finance expert, to develop a computer based ranch financial tool that will help ranchers evaluate the financial implications of participation in a FRESP like program for their own operation. The financial tool, essentially a linked series of Excel spreadsheets, prompts a rancher to input information on design, construction, and O & M costs of a proposed WMA site, estimates of other benefits (new revenue sources) or costs (revenue losses) as a result of implementing a water management project and then estimates various financial indicators (e.g. Internal Rate of Return, Benefit Cost Ratio, Net Present value). Len and Sarah will be beta testing this tool with FRESP ranchers in the next reporting period.

Engaged with SFWMD staff responsible for Northern Everglades, Fisheating Creek, and River of Grass Planning Processes to assist assessment of hydrological impacts of a scaled up FRESP program.

Fisheating Creek

March 16 – Sarah, Len and FRESP ranchers Cary Lightsey and John Payne met with the Fisheating Creek Landowners Association to provide an overview of FRESP. If a decision is made to expand FRESP Fisheating Creek will be a high priority sub-basin. We wanted to inform ranchers in that association about FRESP and the idea of a payment for environmental services program and discuss the concept of a group of landowners working together to provide environmental services as an addition to the model reflected in our 8 pilot projects of individual ranchers providing the services.

River of Grass. During the last half of March Len and Sarah engaged with SFWMD Northern Everglades planning staff and modelers to figure our how District screening and planning models could represent the hydrologic impacts of dispersed FRESP-like water retention on ranchlands. Figuring out how dispersed retention can be modeled is important to FRESP because of the key role models play in screening and ranking alternatives considered by the District staff and Board for funding. District modelers were on a short deadline to figure out how to represent the hydrologic impacts of a full scale version of FRESP for the whole Northern Everglades in order to meet planning and scenario evaluation deadlines for the River of Grass initiative. District modelers will be including alternative scenarios that include some FRESP-like program with guesstimates of low, medium and high acreage enrollment by ranchers in the Northern Everglades.

Working with FRESP consultants, Brian McMahan and Randy McCafferty from EWR, FRESP provided District modelers with runs of the Potential Water Retention Model (PWRM) to inform the development of estimates of hydrologic impacts of evapotranspiration, water seepage and peak flow attenuation resulting from widespread implementation of WMA sites in the Northern Everglades. A key challenge for FRESP was to ensure that the District models represent the range in design and function (and therefore hydrological impacts) of WMA types that are reflected in our 8 pilot projects. Using the limited data available, EWR provided District modelers with alternative board management of one type of WMA, a rehydrated wetland, operating under different board operating rules (fixed plate vs high and low boards with V notch) that demonstrated the dramatically different ET and peak flow attenuation resulting from slightly different management regimes.

Over the course of the next several months District modelers will apply the ranges derived from this information and different estimates of adoption in the watershed to simulate estimates of potential hydrological impacts of a scaled up version of FRESP on the Lake, estuary releases, water available to the southern Everglades and other water uses. This will be done as part of the River of Grass scenario screening process.

After this screening process is completed the FRESP team will begin working on the next phase of modeling required by District planners for the Northern Everglades and the Fisheating Creek basin. This activity is expected to take several months and will likely involve EWR, the Documentation Team and Len and Sarah.

Development of Programatic Approaches for dealing with regulatory issues. Feb-March – Len had several meeting with senior leadership of the US Army Corps of Engineers in Washington to discuss a programmatic approach to permitting. Securing the Nationwide 27 permit for the 8 pilot

WMA sites that allows landowners to return to pre-project footprints at the end of their contract took an enormous amount of FRESP leadership time. This programmatic approach will be developed over the next year.

In Oct 2008 FRESP initiated a short term consultancy with ACE Consultnats to conduct an analysis of

XIII. **FRESP Outreach Activities**.

Describe significant results, accomplishments, and lessons learned. Compare actual accomplishments to the project goals in your proposal:

Key Lesson: Necessary pre-conditions for establishing an innovative PES program in another region/sector include:

- A commitment to pay for service as a profit opportunity and not pay for practice as a cost offset;
- A buyer of the service(s) that is willing and able to put sustained money on the table;
- Sufficient potential sellers of the service(s) that are willing and able to produce the service(s);
- Where forces for change-- regulatory, economic, political -- are sufficiently compelling to motivate enough players to be willing and open to a new approach.

Key Lesson: The elements of FRESP's process are the transferable product.

- Identify a buyer and work with them to identify the service(s) they value and documentation requirements;
- Build and maintain a diverse partnership of that buyer with sellers and civil society (it takes time & money but its critical);
- Assure that the partnership includes social entrepreneurs in all constituencies (producers, private sector, state and federal agencies and civil society) committed to the PES vision;
- Learn by doing – get real demonstration projects on the ground and use their experience to design the program;
- A full time project manager / cat herder / neutral intermediary and a practically-oriented technical team are essential for designing a program acceptable to buyers and sellers.

Key Lesson: Other transferrable FRESP tools and concepts

- Contract design elements
- Decision support tools: Potential Water Retention Model, Ranch PES Financial Analysis Tool, and other documentation proxies; and
- Programmatic approaches for Federal wetland jurisdictional and T & E issues

In the space below, provide the following in accordance with the Environmental Quality Incentives Program (EQIP) and CIG grant agreement provisions:

a. A listing of EQIP-eligible producers involved in the project, identified by name and social security number or taxpayer identification number;

Wes Williamson, Williamson Cattle Company

Hilary Swain, Archbold Biological Station for Buck Island Ranch
Jim Alderman, Alderman-DeLoney Ranch
Jimmy Wohl, Rafter-T Ranch
Cary Lightsey, XL Ranch
Chuck Syfrett, Syfrett West Ranch
John Payne, C.M. Payne and Sons

b. The dollar amount of any direct or indirect payment made to each individual producer or entity for any structural, vegetative, or management practices. Both biennial and cumulative payment amounts must be submitted.

No CIG funds are being used for direct or indirect payments to individual producers for any structural, vegetative, or management practices.

c. A self-certification statement indicating that each individual or entity receiving a direct or indirect payment for any structural, vegetative, or management practice through this grant is in compliance with the adjusted gross income (AGI) and highly-erodible lands and wetlands conservation (HEL/WC) compliance provisions of the Farm Bill.

Because no payments are being made to any EQIP eligible participant, this requirement is not applicable.