

FY15 I&M Network Small Proposal Form (no more than 2 pages)

Project Title: Impacts of a changing climate: monitoring the long term persistence and migration of soil salinities in Bayou Sauvage NWR.

Funding Requested: \$15,000

Submitted by and contact information: James Harris, Supervisory Biologist, Southeast Louisiana Refuge Complex and Shelley Stiaes, Refuge Manager, Bayou Sauvage, Delton and Breton NWRs

List monitoring objectives: We have two fundamental questions regarding the monitoring of salinities at Bayou Sauvage; 1) persistence of salt in the soils from storm events over time and 2) migration of salinities across protection barriers developed to prevent salt water intrusion (i.e., levees).

What is the deliverable (map, report, evaluation, etc.): Stations will be established as permanent monitoring stations for the refuge to track salinities in areas of the refuge where restoration efforts have been on-going and on either side of salt water intrusion barriers.

Briefly, describe the deliverable in the context of the SHC framework, focusing on how the deliverable will affect Conservation Delivery:

In establishing a mechanism to monitor salinities in the soil, this project will provide land managers with critical information about the persistence of salt in the soils after storm events (or levee breaches and etc), and about the movement of salinity in the soils in relationship to barriers designed to prevent salt-water intrusion.

Briefly, if applicable, describe the deliverable in the context of the national I&M 7-Year Plan (which focus area, goal, and task does this work advance): This information directly monitors the health of coastal systems identified by the refuge as critical research need. This project supports not only the ability of the refuge to use baseline data as an indication of restoration potential but provides long term monitoring of the health of ecosystems at-risk from increased storm events, sea level rise and other impacts of climate change.

Who would do the work and who would manage the data: The refuge would rely on the expertise of researchers at Louisiana State University to help design and implement a protocol that addresses the long term monitoring needs of the refuge .

What method or protocol will be used (if cited, citation only), include sample design and the number of sites and frequency of monitoring: 1) A series of salinity monitoring stations will be established in areas of differing soil types (mineral vs organics) to monitor the persistence of salt over time that are currently serving as areas of post-Katrina reforestation efforts on the refuge and 2) salinity monitoring stations will be established in areas of barriers constructed to prevent salt water intrusion into the refuge (i.e., levees).

Address ability to analyze and use information, including how a single year of information is enough to make decisions:

Within a year, and with the help of experts that specialize in soil salinity processes, a framework of sampling stations can be designed and put in place to collect baseline data and lay out a foundation for long term monitoring that the refuge can continue to implement over time.

What would the funding be spent on (e.g., equipment, techs, travel, etc.):

The refuge would enter an agreement with Louisiana State University to fund Dr. Richard Keim to cover his costs of monitoring design and implementation for the first year. Dr. Keim would provide the materials and supplies, as well as the expertise for design implementation. Dr. Keim would instruct the refuge on protocols needed to continue the project long term.

List Cooperators and Partners and what they will contribute: Richard Keim, Associate Professor, LSU School of Natural Resources will provide the expertise and guidance for experimental design, and implementation of monitoring station establishment and first year data collection. In addition, Dr. Keim has two potential students that will support this project if it is funded.