

RESTORE Act Ecosystem Restoration Project Proposals
for consideration in the Gulf Coast Ecosystem Restoration Council's Comprehensive Plan
2012

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Name of Project: Babcock Ranch State Preserve Hydrologic Restoration – Tidal Caloosahatchee	Org and Rank:
Project Description: The Babcock Ranch State Preserve is overseen by the Governor & Cabinet and Legislatively appointed Babcock Ranch Inc. (BRI) Board (501.c.3) with management responsibilities. Kitson & Partners operate on a contract to manage the Babcock Ranch State Preserve businesses and operations that is overseen by BRI, DEP, DACS, FWCC in its work as the operational contractor. This proposal is to restore through redesigning drainage systems (resulting from 100+ years of drainage altering infrastructure on the ranch) to recapture at least one month of lost hydro-period by utilizing ditch-blocks, retention and diversion weirs and hydrological/wildlife enhancement impoundments (STA's) to detain and enhance surficial aquifer recharge. The plan will reduce the flooding high water flows and significantly reduce the low to no flow conditions in the creeks discharging to the tidal Caloosahatchee. The project directly addresses approximately 20,000+ acres and will have beneficial impacts on the approximately 72,000 acre Babcock Ranch State Preserve. Primary focus is also to restore more historic freshwater base flows to the tidal Caloosahatchee River. The incised creeks Owl, Curry Canal & Trout Creek, Stricklin Gully, Cypress, Telegraph, Fichter's, Spanish Creek, South Lightner Canal and the lands adjacent to the Four Corners Drainage Canal on the North slope of the Caloosahatchee. Each has lost more than two months of freshwater base flow to the river in the fall of the year drawdown. These lost seepage flows contribute to the salinity in-balance in the river and its impacts on foraging beds of Vallisnaria (SAV) impacting a wide variety of estuarine species especially juvenile fish (Snook) crabs, invertebrates, Manatees, and Small-toothed Sawfish especially in the late fall through early winter of the year. The loss of the base flow in the tidal creeks along with canopy cover have a significant impact on native aquatic species displacement by favoring the adaptations of exotics to survive in the low D.O. conditions. The loss of base-flow also increases the impact and contamination of upland freshwater due to salt water encroachment manifested by sea level rise. The project is designed to be implemented in three phases. Hydrological modeling is available and concept plans have been developed in concert with Lee County, SFWMD, DACS and Kitson & Partners (adjacent Babcock Ranch Community). Phase I. (2013) Complete the concept plan, engineering and implementation schedule for all elements (ditch blocks, alternative flow-ways, weirs and the earthen impoundments with a water storage, quality, and wildlife enhancement STA design. Prepare and submit permits for approvals and implement small scale improvements not requiring additional permitting. Phase II.(late 2013-2014) Implement construction of weirs and diversion structures and smaller water retention STA's. Complete permitting on larger STA's and project components and the Curry Lake 10 acre	

Refugia Pond. Phase III (2014-15) Implementation of all construction projects including the two large STA's at Lightner Canal area and the Curry Lake Refugia.							
Project Location: Babcock Ranch State Preserve – Charlotte & Lee Counties							
Responsible Party: Babcock Ranch Inc.(state appointed 501.c.3 Board)				Partners: Lee County, SFWMD, DEP –DACS Kitson & Partners (18,500 ac. adjacent development)			
NEP:		Project Cost: \$ 2.4 million			Dollars Needed \$ 1,100,000		
Start: Immediately with approval of the project:				Completion: last quarter of 2015 early 2016			
Status of Project Design and Permitting: Data collection, hydrological modeling and development of restoration concepts and implementation planning has taken place over the past seven years with collaboration from SFWMD, Lee County Division of Natural Resources, Conservation 2020 and Kitson & Partners and other adjacent land owners and community residents. Restoration of the Ranch creeks and the eastern third of the Ranch is in need of restoration as the drainage impacts are very significant to downstream property owners and impacts of extreme high and low flood and dry-up or “yo-yo” characteristics resulting from drainage canals and agricultural dikes blocking historic flows and encroaching residential development downstream along the north shore of the Caloosahatchee. Preliminary designs must be submitted for permitting and construction design completed on all proposed structures in Phase II and III completed.							
What Date or Year could Construction Feasibly Begin: Phase I - 2013							
Your Proposed Timing of Funding (given permits, phasing, staging, etc.) Phase I. Final designs for each of the construction weirs and impoundment structures need to be completed for submission for permitting, and upon approval for construction during 2013. NOTE: The proposed elements of this restoration proposal are closely linked to Lee County and SFWMD proposed projects listed as # 8,15, 20, 21, 26, 28, 31. These projects are downstream or adjacent to the Babcock Ranch Preserve. Construction on the smaller ditch blocks and swales not requiring permitting will be implemented in 2013 as well as start-up for any projects receiving permits. Phase II. weir construction and preliminary work on smaller STA's will proceed in 2014 with the issue of permits. Design and construction of the largest project centered on Four Corners and Lightner Canal will be permitted. Phase III. Construction of this area restoration plan will be completed in 2015-early 3026.							
FY	12/13	13/14	14/15	15/16	16/17	17/18	Total
Previous \$ 950K+	Phase I \$ 250 K	Phase II \$425K	Phase III \$425 K		NA	NA	\$2,050,000
Quantify Environmental Results and How to Measure Them:							
Restoration of hydro-period & base flow to the tidal Caloosahatchee measured by flow and water quality data being collected by Lee County and private sources with a target of documenting ground water table rise to surficial providing an addition month wetland success and piesiometer data loggers on base flow changes with significant increases of more than one month on average							

increases. These changes are significant to fish and wildlife as well as stabilizing the surficial aquifer and reducing exceptional rapid high water runoff and extended dry season periods. These factors will be significant in reducing salt water intrusion as sea level rise continues to native natural systems historic seasonal water levels proposed in this project cannot be fully attained due to existing downstream developments but similar project created in the Babcock Ranch Community development have demonstrate a very significant lift using UMAM flora and fauna criteria as indicators of performance success.

Economic Benefits (including ecosystem services): Research by Dr. Gerry Jackson on the Ranch indicates very significant foraging and even nesting of shorebirds (Spoonbills, Sandpipers and others are common along with rare shore bird sightings have been documented) on the shell based roads and utilizing the ephemeral wetlands and cattle ponds that persist through the dry season. By extending the hydro period of these wetlands and ponds throughout the dry season the limiting factor of surface water availability for wildlife is optimized. This habitat could be critical refugia in the face of another off-shore oil spill. The retention of water and resultant reduction of nutrients delivered to the Caloosahatchee also resulting in more balanced flows reducing costly flooding to agricultural and private downstream homeowners from the yo-yo type flows spawned by channelization are a significant financial consideration calculated in the millions of dollars. The Babcock Ranch has a significant ecotourism business year round attracting visitors from all over the world. The 14 state and federally listed species including the Florida Panther and Black Bear, Red Cockaded Woodpecker, Woodstorks, Indigo Snakes and Caracara are but a few with a host of rare and endangered listed flora species. The Babcock Ranch is the Florida's newest and largest State preserve and is operated as a working ranch with multiple businesses including hunting leases. It has received no significant additional funding from the state but DACS and FWCC supervise the forestry (silviculture harvesting) and wildlife management practices on the Ranch. In addition prevention of salt water intrusion to agricultural lands is priceless but in Babcock Ranch row cropping and silvaculture production is measured in millions of dollars.

Estimated number of Jobs Created or Preserved: 15

How much Habitat will be restored and conserved?: More than 20,000 acres on the Ranch directly and significant ecological and hydrological lift improving impacts on at least another 30,000 acres on the preserve and on Lee County Public in Ruby Daniels (Spanish Creek), Telegraph and Bob Janes Preserves lands downstream segments of the creeks. Adjacent land also will experience a lift in a more balanced seasonal water table and downstream improvements to the north shore creeks and the upper tidal Caloosahatchee benthic flora and fauna is significant acreage in creek and river bottom. Just when the SFWMD typically cuts back on Caloosahatchee discharges from Lake O the filtered freshwater from the North Shore Creeks are very significant to slowing salt water pollution and SAV diebacks the extended base flows from the banks and bottoms of the tidal creeks deliver filtered freshwater.

Quantify pollutant reductions: Water quality leaving the Ranch is very good after 7 years of monitoring. Monitoring N is the most sensitive along with Aluminum that showed up in the monitoring from old agricultural legacies. Lee County continues regular monitoring along Hwy 78 with no indication of significant pollution levels for any parameters. The "Scrubber Marshes" in the proposed STA's will entrap these and other nutrients which will be removed in the

ongoing maintenance program. All of the key creeks targeted are in the DEP BMAP Water Quality System.

What living coastal/marine resources will be improved and by how much? The sustained discharge from the restored hydrology contrasted with the current large rapid runoff event to mid fall reduction, cessation of runoff of base flow and surface waters. is significant to all estuarine flora and fauna. It provides more suitable conditions for SAV flora, chlorophyll levels of phyto & zoo plankton followed by feeding fish larvae and juvenile fish including Snook seeking the freshwater marshes as nursery. The conditions also favor native species of fish and herpta-fauna over exotic species. Shore birds including listed species seek out the restored wetlands for foraging and even nesting as pressure from development and habitat loss provide loss of suitable habitat in the beach and Gulf habitats. The mega fauna of Panthers, and Black Bear habitat are improved in habitat quality and diversity of native food sources

How will community resilience be enhanced? The most striking result we have seen from this habitat restoration in early completed projects on the Ranch is with the removal of exotic plants and restoration of hydrology generates a healthy and far more ecological diversity in the restored native communities even though they cannot be restored to the same native communities that existed on the land over a hundred years ago. This resilience characteristic and exemplar becomes a motivator for other land owners to strive to replicate the effort. Babcock Ranch State Preserve has an international exposure and the Ecotour program gets people excited with their experience in a healthy, thriving, native Florida full of fascinating native flora and fauna and encourages them to seek at the similar opportunities experiencing the bays and beaches. We are blessed that Florida's semi-tropical climate lends itself to rapid recovery and if the water is right the flora and fauna demonstrate a natural affinity for showing their resilient character and the exotics less expensive and more manageable to control.

Additional Justification:

The Babcock Ranch purchase along with the Fred C. Babcock and Cecil Webb Wildlife Management Area state lands and adjacent Lee County 2020 acquisitions is more than a billion dollar investment of public funds. The difficulty in these financially tough times is to secure funding to effectively manage and restore this enormous public investment in perpetuity. This funding source can move the possibility from promise to reality and once completed become a sustainable management level of service. A collaboration among regional efforts and partners can multiply the effectiveness of the impact of the limited funding.

Add any photos or maps that explain project:

Maps: 1. Site Location

2. Babcock Ranch Sub-basin watersheds – project area

3. Tidal Caloosahatchee discharge creeks

