Coastwide Projects

Coastwide Projects

Project Number	Project Proposals
CW-01	Coastwide Hydrologic Improvements
CW-02	Pilot Feral Swine Bounty Program

CW-01

Coastwide Hydrologic Improvements

PPL28 PROJECT NOMINEE FACT SHEET
January 30, 2018

Project Name
Coastwide Hydrologic Restoration

Louisiana's 2017 Coastal Master Plan
Hydrologic restoration is considered consistent

Project Location
Coastwide

Problem
For decades, the natural hydrology and tidal flows of the Louisiana coast have been altered by development, oil and gas exploration, wetland management techniques, as well as storms, erosion, and other manmade and natural processes. These alterations can take various forms such as installation of dikes, roadways, levees, and other barriers, inadequate or failing culverts and water-control structures, etc. These modifications reduce or restrict tidal or freshwater exchanges and change the structure and function of coastal habitats, which can eliminate nursery grounds for important marine and coastal species. Coastal marshes have been altered, degraded, and lost. By focusing restoration efforts in relatively small footprints, such as removing barriers to tidal flow or freshwater exchange, hundreds or even thousands of acres of coastal marshes can be positively impacted.

Goals
Restore and/or improve hydrology to coastal marshes through increasing freshwater, nutrient and sediment inputs, and tidal exchange. The project will also strive to increase fisheries access to unused or underutilized nursery habitat, increase the functionality of coastal marsh habitats, and improve water quality. The project will provide a funding mechanism to implement hydrologic restoration projects within the scale of the CWPPRA program.

Proposed Solution
Installation, improvement, replacement, repair, removal of water control structures (for example culverts, weirs, plugs, dikes, spoil banks, etc.). Freshwater conveyance by dredging (using material beneficially). This project will provide a funding mechanism to implement hydrologic restoration projects within the scale of the CWPPRA program. The project is not intended to provide for construction or maintenance of other funded projects with existing O&M funding mechanisms. The project will not provide funds for design or construction of water control features which would place new areas under management and further restrict flows and/or fisheries access. The project is not intended to rebuild deteriorated marsh management units and further restrict flows and/or fisheries access.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly?*
   The project is expected to yield benefits to approximately 2,000 - 2,500 acres every three years estimated from the implementation of approximately two projects per cycle in interior marsh with 0.5% loss rate.

2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 200 - 250 net acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
Approximately 50% loss rate reduction is assumed for the implementation area over the project life.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
No.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
N/A

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
Potential for synergy with the large number of restoration projects across the state.

Considerations
Pipelines, roads, and other infrastructure are considerations in project design.

Preliminary Construction Costs
The project will provide $3M per implementation cycle to design and construct hydrologic improvements. It is planned to implement 6 cycles over the 20-year life of the project.

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Coastwide Hydrologic Improvements

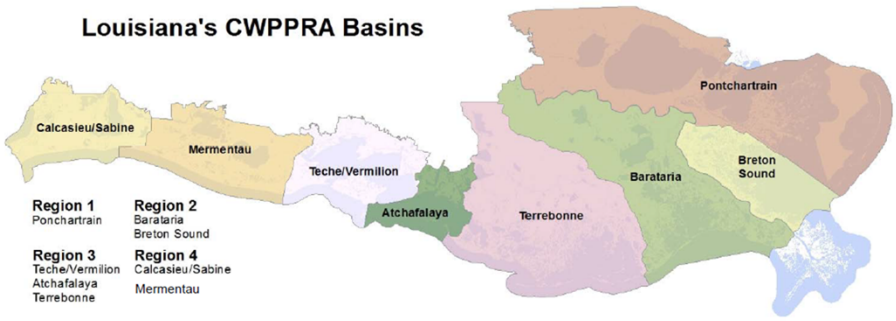
NOAA FISHERIES

Coastal Louisiana

Presenter: Jason Kroll, Civil Engineer, NOAA

PPL28 CWPPRA Regional Planning Team Meetings

Coastwide Opportunity



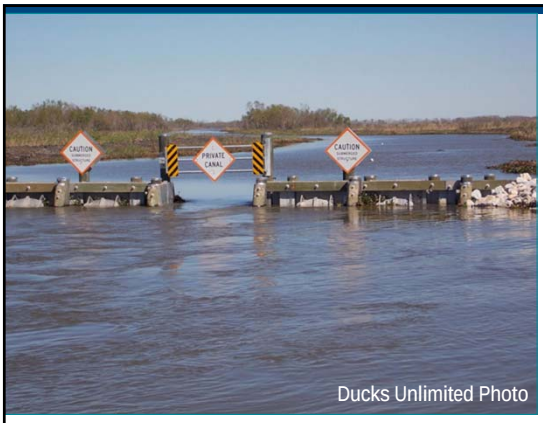
Coastal Process Problems Caused by Altered Hydrology

- Wetland degradation
- Habitat Loss
- Decreased fisheries access
- Excessive flooding stress on marshes
- Entrapment of higher salinity waters

Proposed Project Solution

- Replace non-functioning structures with new structures
- Increase freshwater flows carrying sediment and nutrients
- Improve tidal flows
- Restore marsh plant communities
- Increase fisheries access

Provide a funding mechanism to implement hydrologic restoration projects within the scale of the CWPPRA program.



Model Project

- Consistent with 2017 Coastal Master Plan
- Cost Estimate – Approximately $3M per cycle to design and construct hydrologic improvements One cycle is three years. (6 cycles planned)
- Approximately 2,000-2,500 acres of habitat improvement per cycle, approximately 200-250 net acres over 20 year project life.

- New or replacement culvert installation
- Spoil bank gapping/degrading
- Freshwater conveyance by dredging (using material beneficially)
- Plug and Weir Removal
- Structure removal

- Replacement Structures with increased hydrologic connectivity:
  - Vertical slots
  - Boat Bays
  - Increased number of gates
  - Variable crest weirs instead of fixed crests

What this project is NOT:

- The project is not intended to provide for construction or maintenance of other funded projects with existing O&M funding mechanisms.
- The project will not provide funds for design or construction of water control features which would place new areas under management and further restrict flows and/or fisheries access.
- The project is not intended to rebuild deteriorated marsh management units and further restrict flows and/or fisheries access.

Project Benefits Criteria:

- Project areas must have a clear and scientifically identifiable ecological problem leading to a measurable loss of coastal wetland habitat.
- Increase freshwater flows by TBD CFS
- Increase fisheries access by TBD criteria (allowing for more tidal exchange)
- Increase potential for SAV growth

These and other benefits will be determined during Phase 0 Candidacy.

Summary

- Approx. 15,000 Acres Benefited
- $3M in funding per cycle
- 6 cycles over 20 years.
- 200-250 NET ACRES

Ducks Unlimited Photo

Implementation Note:

- Project would be implemented similar to LA-39 Coastwide Vegetative Plantings Project
- For implementation information contact Jason Kroll.

Contact information:
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CW-02

Pilot Feral Swine Bounty Program

CW-2

PPL28 PROJECT NOMINEE FACT SHEET
January 2018
Draft To Be Updated

Project Name
Pilot Feral Swine Bounty Program

Louisiana's 2017 Coastal Master Plan
Herbivory Control

Project Location.
Terrebonne, St. Mary, Iberia and Vermilion Parishes, Region III

Problem
Feral swine (*Sus scrofa*) are an invasive species that eat birds, mammals, amphibians, reptiles – some of which are listed as threatened or endangered species. Wild pigs also damage marsh habitat by rooting and upturning fragile marsh soils in their quest to consume subsurface portions of common marsh plants and burrowing invertebrates. Noted as having the highest reproduction capacity of any large mammal in North America, feral swine can degrade and modify natural plant communities more than any other vertebrate (Wood and Barrett, 1979). Rooting can damage/destroy marsh plants, adversely affect succession and influence changes in species composition (Bratton, 1977).

Goals
Generally modeled after, and administered similar to, the Coastwide Nutria Control Program (LA-03b), the primary goal of this project is to develop, sponsor and promote a program that will successfully begin the systematic eradication of feral swine.

Proposed Solution
To initiate a pilot bounty program to reduce the growing numbers of feral swine in Louisiana's coastal zone supported by a means of reporting and documenting kill data. If shown to be successful, the program can be expanded to additional parishes, coastwide and possibly statewide.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   To be determined.

2) *How many acres of wetlands will be protected/created over the project life?*
   To be determined.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   To be determined.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc?*
   To some degree, the eradication of feral hogs would result in the reduction of rooting and resulting disturbance of the ground surface and shallow root zone of some geomorphic features.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
None.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
Results of the program could conceivably have a positive benefit on some of the CWPPRA projects constructed to date in Region III.

Other Considerations
While the program would be administered from lessons learned from the Coastwide Nutria Control Program, it would be conducted independently.

Preliminary Construction Costs:
While there are no construction costs, the estimated costs of recording kills, random inspection and confirmation of reported kills at reported kill locations, paying bounties, administering the program would be $331,795. The proposed bounty budget is $150,000 based on $10/hog x 15,000 kills. A breakdown of tasks includes: (1) Tag Collection: $26,769; (2) Swine Kill Verification: $100,818; (3) Project Management: $33,888 (4) Modify database/Software Program: $20,320. Based on 15,000 kills the cost for eradicating each hog is $22.12. 10,000 kills would raise the cost to $28.18/hog.

Preparer(s) of Fact Sheet:
Ed Fike: Coastal Environments, Inc. 225-383-7455, x 128; efike@coastalenv.com

References

Bratton, S. P.
1977. Wild hogs in the United States – origin and nomenclature. Pp 1-4 in *Research and Management of Wild Hog Populations* (G. W. Wood, ed.). The Belle W. Baruch Forest Science Institute of Clemson University, Georgetown, SC.

Wood, G. W. and R. H. Barrett
1979. *Status of wild pigs in the United States*. Wildlife Society Bulletin 7:237-246.

Pilot Feral Swine Bounty Program

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(225) 383-7455

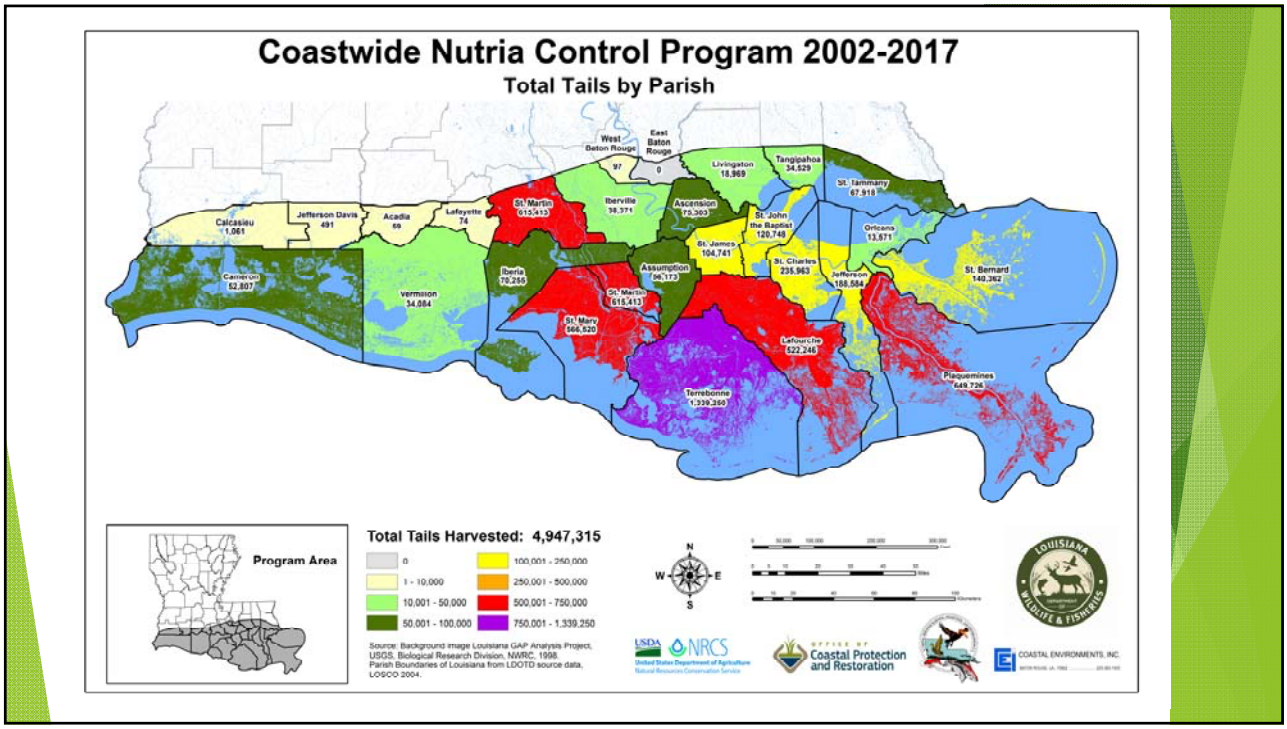
REFERENCES: New Iberia LDWF office (337) 373-0032
Edmond Mouton
Jennifer H. Manuel
Catherine Normand

Feral Swine Impacts to Coastal Marsh Zones:

- Feral swine will consume or destroy aquatic plants, converting marsh land to open water (USDA, 2014)
- Feral swine impact the soil building process by reducing marsh plant production and root expansion, creating further destruction of coastal habitat and expediting coastal erosion (Mouton, 2009)
- **Louisiana's feral hog population was estimated at half a million in 2013**, the second-largest state population in the US. **Populations are expected to double every five years, if not controlled** (Tanger, 2015)
- In 2009 LDWF researchers determined that feral hog damage to coastal wetlands to be more severe than damage caused by the invasive nutria. In those areas of coastal Louisiana, feral hogs "are severely impacting wetlands especially acreages recovering from the negative impacts of nutria herbivory", (Mouton, 2009).
- Mr. Edmond Mouton testified in a 2009 congressional hearing that if the feral hog destruction of coastal Louisiana were left unchecked, negative impacts to essential wetlands could increase to 90,000 or more acres, numbers not seen since the implementation of the CNCP in 2002.

Bonin, P. 30 April 2015

Honn, D. 05 Oct 2016


Coastwide Nutria Control Program 2002-2017
Total Tails by Parish
West Baton Rouge
97
East Baton Rouge
0
Livingston
18,969
Tangipahoa
34,529
St. Tammany
67,918
Iberville
98,371
Ascension
73,203
St. John the Baptist
120,748
Orleans
13,571
Calcasieu
1,061
Jefferson Davis
491
Acadia
69
Lafayette
74
St. Martin
615,413
St. James
104,741
St. Charles
235,963
Jefferson
188,584
St. Bernard
140,362
Cameron
52,807
Vermilion
34,084
Iberia
70,255
Assumption
96,173
St. Martin
615,413
St. Mary
566,820
Lafourche
522,246
Terrebonne
1,339,269
Plaquemines
649,726
Program Area
Total Tails Harvested: 4,947,315
0
1 - 10,000
10,001 - 50,000
50,001 - 100,000
100,001 - 250,000
250,001 - 500,000
500,001 - 750,000
750,001 - 1,339,250
Source: Background image Louisiana GAP Analysis Project, USGS, Biological Research Division, NWRC, 1998. Parish Boundaries of Louisiana from LDOTD source data, LOSCO 2004.
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W
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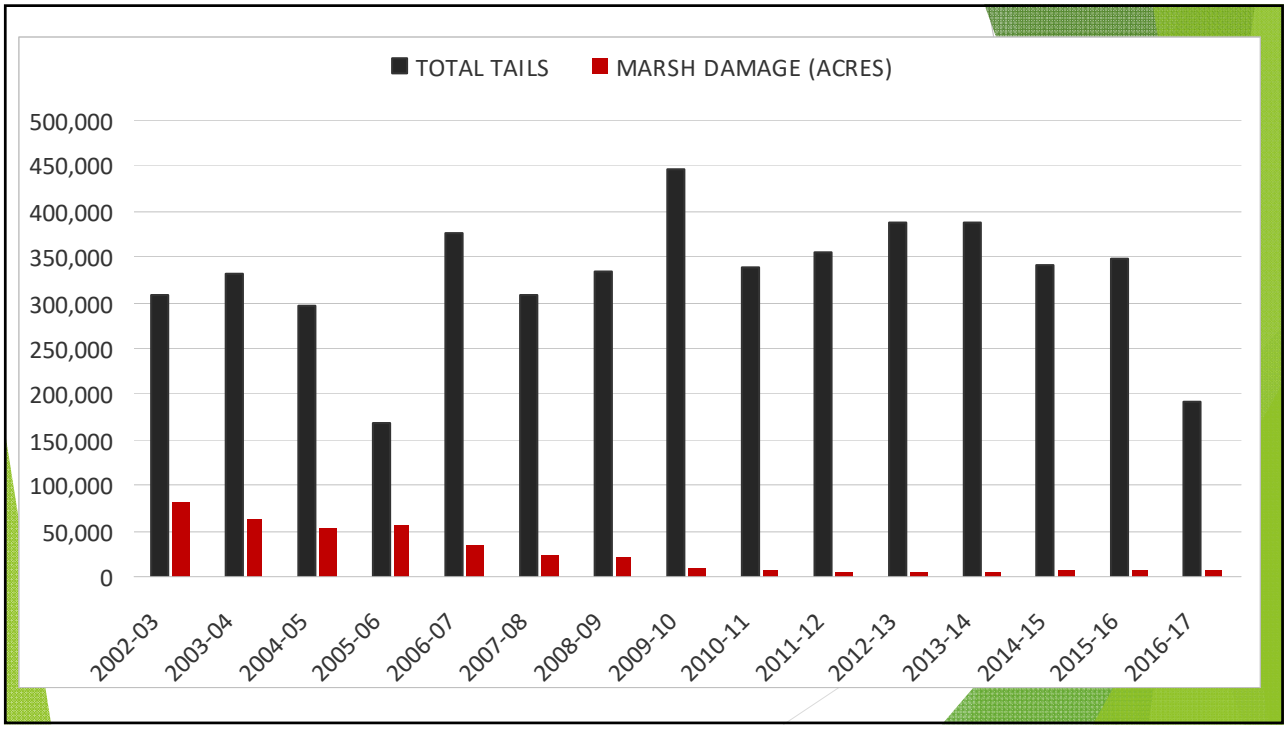
S
USDA
NRCS
United States Department of Agriculture
Natural Resources Conservation Service
Office of Coastal Protection and Restoration
LOUISIANA WILDLIFE & FISHERIES
COASTAL ENVIRONMENTS, INC.


TOTAL TAILS
MARSH DAMAGE (ACRES)
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17

AMOUNT AND ECONOMIC OF FERAL HOG DAMAGE TO UNIQUE BASIN MARSH WETLAND IN FLORIDA

R. M. Engeman et al.

Florida Park Service, 2003 "Parknership" Technical Report

- 65.23-ac study area included fresh marsh and transitional areas in a basin marsh in Savannas Preserve State Park, south of Fort Pierce
- Damage defined as ground overturned during foraging (rooting)
- Through sampling with a tape measure along transects, 19% or 12.39 ac of the project area showed hog damage
- **Wetland Damage Valuations: $1,238,710 or $99,976/ac using Freshwater Emergent Valuation**

  $4,036,130 or $325,757/ac using Open-Water-Emergent Valuation
- Two valuations are underestimated because T&E species, water quality impacts and transmission of diseases are not considered

CNCP offers lessons for feral hog field operations

- Pilot bounty program to be initiated in the late fall of 2019, run for approximately 19 weeks, with a target of 15,000+ feral swine in Terrebonne, St. Mary, Iberia, and Vermilion Parishes
- Custom-software, previously developed for CNCP, could easily be updated to track feral hog bounty data. Harvest data and field observations would be processed into a deliverable report
- Proposed methodology involves combination of current Alligator and Nutria Programs. Trial-run participants would be qualified in a similar as those participants in noted programs
- If trial proves successful, bounty program could be extended to additional parishes, coastwide, or statewide
- Program as proposed is subject to revisions/recommendations from the US Fish and Wildlife Service, the federal sponsor