MONITORING PLAN

PROJECT NUMBER LA-3b
COASTWIDE NUTRIA CONTROL PROGRAM

September 10, 2002

Project Description

The Coastwide Nutria Control Program (LA-03b) was authorized on the 11th priority list of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) to control the population of nutria in coastal Louisiana which are exacerbating the states wetland loss problem. The program area for the Coastwide Nutria Control Program will be coastal Louisiana, bounded on the north by Interstate 10 from the Louisiana-Texas state line to Baton Rouge, Interstate 12 from Baton Rouge to Slidell, and Interstate 10 to Louisiana-Mississippi state line.

Louisiana's coastal wetlands are disappearing at an alarming rate, with 25 - 35 square miles a year changing from marsh to open water (Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority 1998). This loss is attributed to many factors such as subsidence, salt-water intrusion, alterations to natural river systems, and herbivory. Smaller scale studies have shown that the nutria (*Myocastor coypus*), an introduced rodent, can severly damage marsh vegetation and is responsible for the majority of herbivory damage in coastal Louisiana (Fuller et al. 1985, Foote and Johnson 1993, Mouton et al. 1998, 1999, 2000, 2001).

Historic records of the introduction of the nutria to Louisiana are unclear, but it appears they were placed in captivity and released sometime in the mid to late 1930's. The population expanded to most of south Louisiana by the late 1940's, and by the late 1950's there were an estimated 20 million nutria residing in and consuming the marshes of coastal Louisiana (Kinler 1993). During this period, impacts to agricultural crops and marsh vegetation were reported (Chabreck et al. 1959, Harris and Webert 1962). Scientific research conducted in response to elevated levels of herbivory revealed the severe impact of nutria on *Sagittaria* marshes in the Atchafalaya River Delta (Fuller et al. 1985) and the brackish and freshwater marshes of the Barataria Basin (Foote and Johnson 1993).

Between the late 1960's and early 1980's, over 1 million nutria were harvested annually (Lowery 1974, Kinler 1993) (figure 1). The high price for fur during this period made nutria trapping a viable trade. As a result, nutria populations were controlled, and damage to the marsh was minimized. Recently, however, a decline in the price and demand for nutria pelts with a corresponding decline in harvest (figure 1) have resulted in increased marsh herbivory.

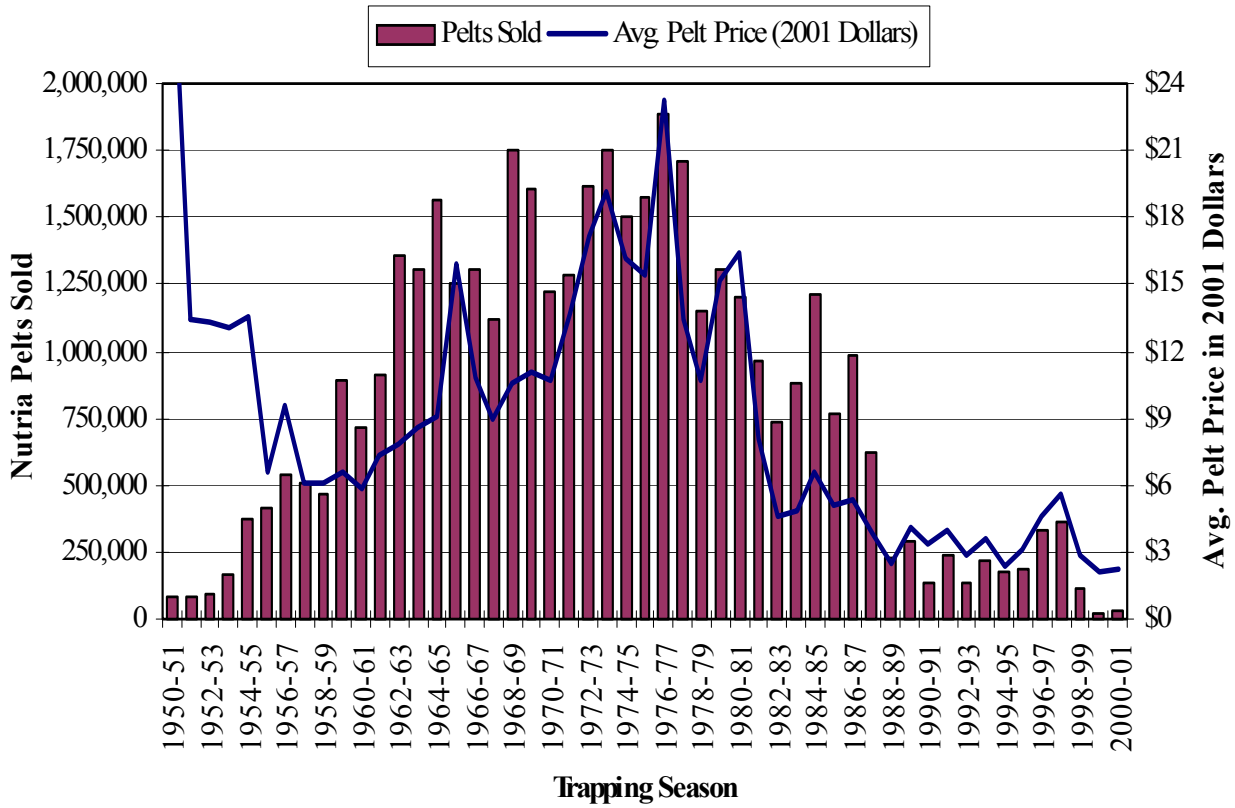

Figure 1. Number of nutria pelts sold and average price per pelt in constant 2001 dollars from the 1950-51 through 2000-01 trapping seasons (Balkum 2002, modified from Mouton et al. 2001).

In 1998, the first coast wide nutria herbivory survey was flown as part of the Nutria Harvest and Wetland Demonstration Program (LA-02) [Louisiana Department of Natural Resources (LDNR) 1998]. Survey results showed that swamps and bottomland hardwoods, as well as fresh, intermediate, and brackish marshes were all identified as being significantly damaged by nutria (Mouton et al. 1998). Overall, a total of 23,960 acres of damaged wetlands was identified along the survey transects in 1998 (table 1). In 1999, the area of herbivory damage increased to 27,356 acres, but decreased in 2000 and again in 2001 to 22,139 acres (table 1). This decrease in damage over the past few years is most likely attributed to the effect of the recent drought on nutria populations. When extrapolated, the coast-wide damage was estimated at 100,000 acres (Mouton et al. 2001), which is likely conservative because only the severely impacted areas can be detected by aerial survey methods.

Table 1. LDWF annual aerial survey results of the extent of nutria herbivory impact in coastal Louisiana.

Year	Number of Sites Surveyed	Number of sites with current damage (Acres)	Number of sites with vegetative recovery (Acres)
1998	204	170 (23,960*)	34 (4,447)
1999	184	150 (27,356*)	34 (611)
2000	170	132 (25,939*)	38 (4,512)
2001	142	124 (22,139*)	18 (2,342)

* Figure represents acres damaged along survey transects. Actual damage coastwide was estimated to be four times the area observed during the survey.

The direct impact of herbivory is the removal of vegetative cover from the surface of the marsh. However, secondary impacts can result from overgrazing by nutria. As significant amounts of vegetation are removed, the fragile organic soils become exposed to erosion through tidal action and storm events, and if damaged areas do not revegetate quickly, they become open water as tidal scour removes soil and thus lowers elevation. Frequently the plant's root systems are also damaged, making recovery through vegetative regeneration very slow or non-existent.

Local, state, and federal agencies have spent millions of dollars during the past 20 years on a variety of projects designed to reduce marsh loss and create additional vegetative habitat in open-water areas. These restoration projects however, may not provide the expected level of benefit without adequate control of nutria herbivory. Vegetative damage caused by nutria has been documented in at least 11 CWPPRA project sites in the Barataria-Terrebonne Basins alone (Mouton et al. 2001). As has been shown in the past, control over nutria populations can be achieved through an increase in the commercial harvest of these animals (Mouton et al. 1998). The problem lies with the economics of the current market. To make nutria trapping economically practical, the minimum price per animal must be in the range of $4 to $5 (Kinler 1993). However, in recent years, the price for a nutria pelt has averaged between $1 to $3. Therefore, to make nutria trapping an economically viable option, the price for the animal must be subsidized with an incentive payment to encourage increased harvest.

Genesis Laboratories, Inc. evaluated the following nutria control techniques which are in use or have been used to reduce rodent damage to wetlands and/or agricultural crops: incentive payment, chemical control (toxicants), incentive-bonus, induced fertility, trapping, control hunting, and chemical repellants (Balkum 2002). Incentive payment ranked first of the seven control techniques analyzed, considering cost-effectiveness, feasibility of implementation, and probability of goal attainment.

Project Goals and Strategies/Coast 2050 Strategies Addressed

CWPPRA projects are reviewed prior to authorization of construction funds for compatibility of project goals with those in the Coast 2050 Plan (Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority 1998), and for the probability that proposed restoration strategies will accomplish those goals. Project goals and strategies are provided to LDNR by the sponsoring federal agency through the Environmental Assessment and/or Wetland Value Assessment for the project. The following goal and strategy for the Coastwide Nutria Control project were provided by the United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) (2001).

Project Goal:

1) Significantly reduce damage to coastal wetlands resulting from nutria herbivory

Project Strategy:

1) Implement an incentive payment program to remove 400,000 nutria annually, by compensating licensed trappers $4 for each nutria tail delivered to a collection center.

This project goal is consistent with the Coast 2050 common strategy of herbivory control, which "is aimed at reducing the severe levels of marsh destruction by increasing trapping incentives, developing better markets for nutria, etc." (Louisiana Coastal Wetlands Conservation and Restoration Task Force and Wetlands Conservation and Restoration Authority 1998).

Project Features

This project will determine if the nutria harvest can be stimulated by making incentive payments to licensed trappers. This would be done by using CWPPRA funds for incentive payments of $4 per nutria tail delivered to collection centers established in coastal Louisiana. This program will identify coastal areas impacted by nutria herbivory, quantify statewide nutria harvest and its distribution, and monitor recovery of impacted areas. The Louisiana Department of Wildlife and Fisheries (LDWF) will administer and evaluate the Coastwide Nutria Control Program through a process involving a licensed contractor and licensed trappers.

Application Process:

Licensed trappers wishing to participate in the program must submit a Nutria Control Program Participant Application form to the contractor to review for completeness and validity. To be considered complete, the application must contain the following information: Name, address, telephone number, social security number, and Trapping License number of applicant; description of property to be trapped/hunted (acres, parish, township, range, section), and tax receipt for property; name, address, and telephone number of landowner(s) (private or public); signature of participant; signature of landowner(s) or designated representative. If the participant anticipates that an assistant would be delivering tails to a collection center, the participant must provide the name of the assistant with the application. Once the application is approved, the participant will receive his/her Nutria Control Program Registration Number by mail.

Program Protocol:

The contractor shall set up nutria collection stations across coastal Louisiana. Registered participants or their representatives shall deliver to these stations fresh or well-preserved whole tails equal to or greater than 7 inches in length. At time of delivery, participant must declare location where animals were taken and indicate method of take and carcass use. Once tails have been counted the participant will be presented with a receipt/voucher, and will subsequently be mailed a check in a timely fashion. The contractor shall deliver tails to an approved disposal facility and receive documentation that ensures the nutria tails shall be properly disposed of and shall not leave the facility. If the number of tails collected approaches 400,000 there will be a public notification of an end date for collection, unless LDWF, LDNR and NRCS decide to use contingency funds to extend collection. Should the collection not reach 400,000, tails will be collected through about April 5 each year.

Tasks:

The contractor shall process and maintain records regarding participants, number and location of origin of tails collected, method of take, carcass use, receipts, and payments. The LDWF will conduct annual coastwide aerial surveys during spring/summer to document the current year impact of nutria herbivory. Methods for this survey will follow techniques described by Linscombe and Kinler (1997). The data collected during the aerial survey, along with the harvest data submitted by the contractor will be analyzed by LDWF and a herbivory report produced. In this report, LDWF will determine project effectiveness based on the goals and strategies of the project. Accordingly, the report will include figures and text detailing damage and/or recovery estimates and harvest numbers and location.

Monitoring Goals

Priorities:

Damage to coastal wetlands by means of nutria herbivory becomes apparent only when vegetative consumption reaches excessive levels and results in "eat-outs"(Mouton et al. 2001). While aerial surveys are effective at quantifying large areas of vegetative damage they cannot determine the magnitude of damage to the marsh that occurs at less-than-excessive levels. Therefore, results obtained from aerial survey data may underestimate the actual effects of nutria herbivory. By having harvest locations, a comparison can be made between what is discovered on aerial surveys and where nutrias are coming from during the harvest. This may potentially allow for adaptive management of the program in years to come.

Specific Monitoring Goal:

1) Determine the extent of nutria herbivory impact (number of sites, number of acres, severity of damage, marsh type, by township and parish) in coastal Louisiana.

2) Determine the number and distribution of nutria harvested, method of harvest and use of carcass (e.g. sell for fur and meat) by parish, township, and marsh type.

3) Relate harvest number and distribution to the impact of nutria herbivory.

Monitoring Strategies

1) LDWF will conduct annual coastwide aerial surveys to document impact of nutria herbivory. Survey techniques will follow Linscombe and Kinler (1997), and will be conducted in 2002-2022. Results will be analyzed annually and number of acres impacted or recovered calculated. The number of sites observed, degree of impact for all sites, and the number of sites converted to open water will also be presented by parish, township, and marsh type.

2) LDWF will track harvest distribution with information provided by the trapper on the area hunted and with the number harvested by each trapper. Method of harvest and use of carcass will be compiled with information supplied by the trapper at time of tail delivery. This information will be collected annually during the same years as aerial surveys, and will be compiled according to parish, township and marsh type.

3) Within townships comparisons will be made on the number of acres damaged and nutria harvested, number of acres recovered and nutria harvested, and the number of nutrias harvested by marsh type.

4) After one year of data collection, LDWF will investigate the potential for finer-scale spatial evaluations (more precise harvest locations).

Notes

1.	Planned implementation:	Start project:	June 2002
		End project:	June 2022
2.	NRCS Point of contact:	Mike Carloss	(337)291-3063
	LDWF Point of contact:	Greg Linscombe	(318)373-0032
3.	LDNR Project Manager:	Bob Roberts	(225)342-9423
	LDNR Monitoring Manager:	Brady Carter	(504)288-5988

4. The fully-funded 20-year cost is estimated to be $68,595,647, although initial funding was approved for 5 years at a cost of $12,945,696.

5. LDWF will prepare an annual report to evaluate the Coastwide Nutria Control Program. The report will evaluate program participation, nutria harvest statistics, disbursement of funds, vegetative monitoring data, recommendations for the next years program, and include maps of nutria damage and harvest locations.

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