

E C O L O G I C A L R E V I E W

Coastwide Nutria Control Program
CWPPRA Priority Project List 11
(State No. LA-03b, Federal No. LA-CW-1)

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by

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ECOLOGICAL REVIEW

Coastwide Nutria Control Program

In August 2000, the Louisiana Department of Natural Resources initiated the Ecological Review to improve the likelihood of restoration project success. This is a process whereby each restoration project's biotic benefits, goals, and strategies are evaluated prior to granting construction authorization. This evaluation utilizes monitoring and engineering information, as well as applicable scientific literature, to assess whether or not, and to what degree, the proposed project features will cause the desired ecological response.

I. Introduction:

Nutria (*Myocastor coypus*), an invasive rodent native to South America, have damaged approximately 100,000 acres of coastal wetlands in Louisiana. Although introduced in the late 1930s or early 1940s, the potential for nutria to deplete marsh vegetation was not fully recognized until the late 1980s when reports of such damage became routine. This phenomenon is believed to have been caused by a dramatic drop in nutria pelt prices throughout the 1980s which depressed harvest efforts. Prior to this decrease in fur values, the demand for pelts encouraged nutria trapping which in turn prevented overpopulation and minimized wetland damage.

Coast 2050 has identified herbivory control as a Coastwide Common Strategy 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 the Wetlands Conservation and Restoration Authority 1998).

II. Goal Statement:

The goal of the project is to eliminate or significantly reduce damage to coastal wetlands resulting from nutria herbivory.

III. Strategy Statement:

An incentive payment program would compensate licensed trappers \$4 for each nutria tail delivered to a collection center in an effort to increase the annual nutria harvest to 400,000 animals.

IV. Strategy-Goal Relationship:

The implementation of an incentive payment program, in conjunction with current pelt and meat prices, would enable trappers to profit from nutria harvesting. Incentive payments will result in increased nutria trapping, thereby reducing herbivory damage to coastal wetlands.

V. Project Feature Evaluation:

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, controlled hunting, and chemical repellants. Genesis Laboratories' ranking of the seven control techniques can be found

in Table 1. The rankings take into consideration cost-effectiveness, feasibility of implementation, and probability of goal attainment.

Table 1. Ranking of nutria control techniques based on cost-effectiveness and concerns associated with each (Genesis Laboratories, Inc. 2002).

Control Technique	Rank	Description	Potential Concerns
Incentive Payment	I	A secondary value would be paid for the nutria tail in addition to the pelt and/or meat.	Payment could encourage animal husbandry. Since a significant portion of the alligator's diet is comprised of nutria, complete eradication is not desirable. State trapping regulations may discourage participation.
Chemical Control	II	Use of toxicants to control nutria populations	Certified applicators required. Toxicants also target birds and other mammals, while the effect on deer, alligators, crawfish, and shrimp is not understood. Baiting would preclude human consumption of nutria. Compounds rendered ineffective by heavy rain and high humidity. Pre-baiting, re-application, and raft construction are labor-intensive and costly, making it cost prohibitive for large-scale use.
Incentive-Bonus	III	Salaried trappers/hunters would control nutria and upon successful eradication, a bonus would be paid.	Nutria have been eradicated on a smaller scale in Great Britain. However, in Louisiana the size of nutria populations, mild winter temperatures, and the difficulty in site accessibility would greatly compromise the ability of trappers to eradicate nutria statewide. Eradication would negatively impact alligator populations. Large-scale use may be cost prohibitive.
Trapping	IV	Lethal and non-lethal traps used by licensed trappers.	Although no expense for State and Federal Agencies, the present market values for pelts and meat do not exceed processing expenses which will ensure limited trapper participation.
Controlled Hunting	V	Open season by licensed hunters.	Although no expense for State and Federal Agencies, the low demand for nutria pelts and meat and the opportunistic nature of hunting would result in limited hunter effort.
Induced Fertility	N/A	Chemical compounds to limit fertility of males or females or both.	Lack of scientific knowledge in this field. Delivery method of contraceptives would be cost prohibitive on a coastwide scale. Contraceptives have been shown to affect other mammalian and avian species.
Chemical Repellants	N/A	Used to repel nutria using a non-lethal device to decrease damage.	No effective repellants have been developed for nutria. Not a valid consideration due to lack of efficacy and long-term effect.

VI. Assessment of Goal Attainability:

In 1998, the Nutria Harvest and Wetland Restoration Demonstration Project was implemented through the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). The specific goal of the project was to document the current extent of nutria herbivory impact in coastal Louisiana and to document continued damage and/or recovery (O'Neil 1998). The Louisiana Department of Wildlife and Fisheries (LDWF) has since conducted annual coastwide aerial surveys to quantify the current year impact of nutria herbivory. The results of these surveys are presented

below in Table 2. When extrapolated, the coastwide damage estimate is approximately 100,000 acres (Mouton, et al. 2001). The vast majority of the marsh vegetation damage is concentrated in the Barataria-Terrebonne basins where a similar survey, conducted in 1996 by the Barataria-Terrebonne National Estuary Program, estimated that between 62,000 and 83,000 acres were impacted by nutria (Linscombe and Kinler 1996).

Table 2. 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.

Over the past five years LDWF has been documenting the extent of nutria damage to Louisiana's coastal wetlands which was exacerbated by the declining fur trade throughout the 1980s. Utilizing historical trapping and fur industry records, Genesis Laboratories summarized the dramatic decline of the nutria harvest over the past twenty years (Figure 1). From the 1962-63 trapping season through the 1980-81 season, the sale of nutria pelts surpassed 1,000,000 annually. Since then, in the past twenty years, pelt sales have topped 1,000,000 only once (1984-85 season) and prices have averaged less than \$6 per pelt (based on 2001 dollars) in every season except for two (1981-82 and 1984-85). A very strong correlation coefficient (r) of 0.851 further establishes the linear association between annual nutria pelt sales and average annual pelt prices (in 2001 dollars) from the 1955-56 trapping season through the 2000-01 season.

The current lack of a nutria market, for either fur or meat, has resulted in the current low market prices. Over the last two trapping seasons, with the average price for a nutria pelt at \$2.18, trappers have harvested less than 50,000 animals. It is the goal of this project, that by implementing an incentive payment program, the total price paid for a single nutria would be sufficient to stimulate the harvest. The proposed incentive payment of \$4, in combination with current pelt prices, would raise the total value of a nutria to approximately \$6. The project target of 400,000 animals per year is likely attainable based on historical trends (Table 3).

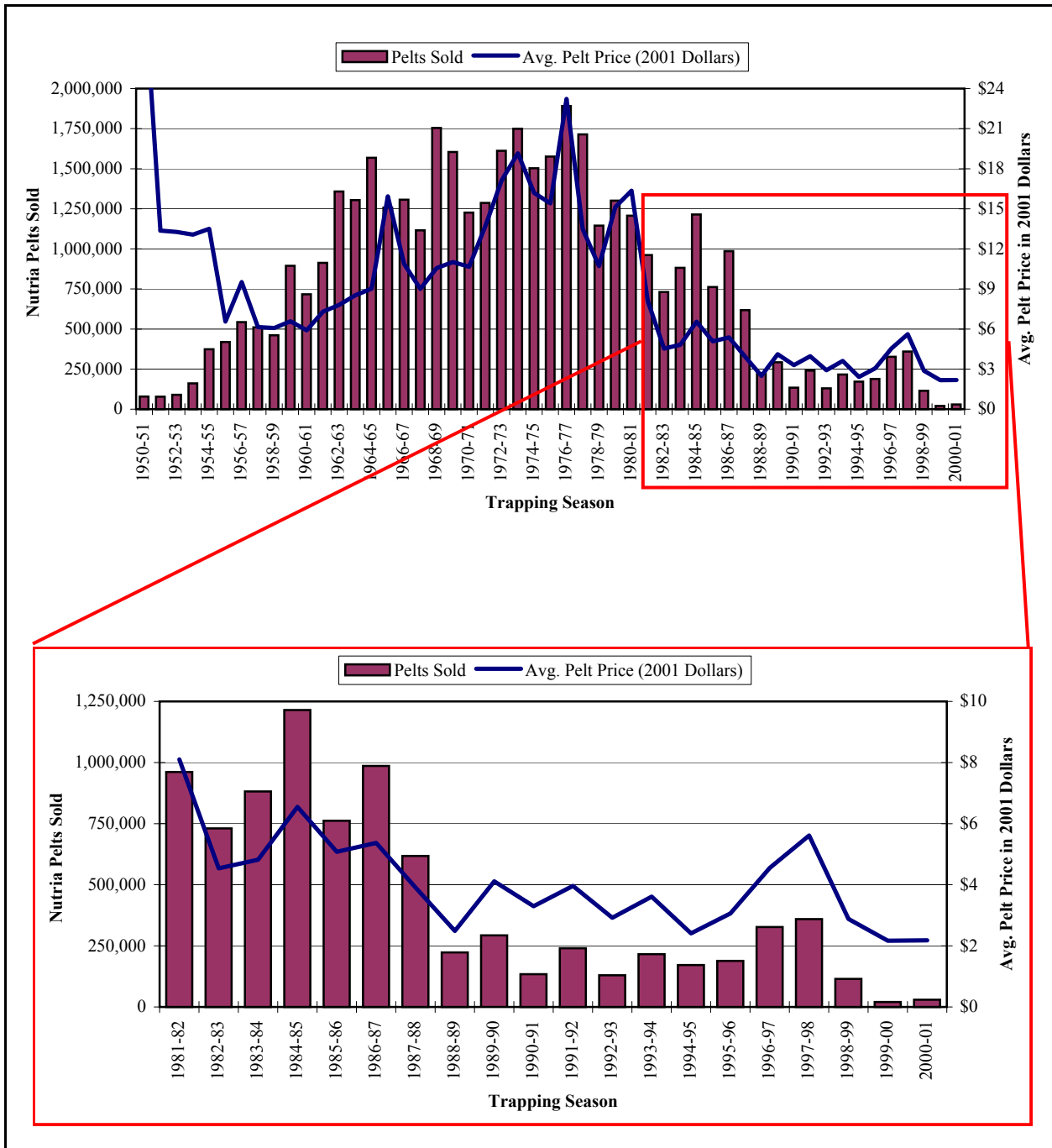


Figure 1. Number of nutria pelts sold and average price per pelt in constant 2001 dollars from the 1950-51 through 2000-01 trapping seasons.

Table 3. Average nutria pelt prices compared to the average number of pelts sold annually from 1982-1986 and from 1996-1997.

Trapping Seasons	Avg. Pelt Price (2001 Dollars)	Avg. Pelts Sold Annually
1982-83 - 1986-87 (5 seasons)	\$5.27	914,969
1996-97 - 1997-98 (2 seasons)	\$5.08	343,259

The ultimate success of the Coastwide Nutria Control Program will depend upon the following issues:

1. Will the delay in payment to the trapper discourage participation?
2. Will the incentive payment of \$4 be sufficient to guarantee the annual harvest of 400,000 nutria?
3. What effect will a nutria harvest of 400,000 animals per year have on Louisiana's coastal wetlands?

Monitoring of the proposed Coastwide Nutria Control Program will include tracking of the number and location of nutria harvested and annual surveys to determine the location and effect of the program on nutria herbivory damage. The program will be reviewed annually to determine if any adjustment in the incentive payment or target harvest levels is warranted.

VI. Summary of Findings:

Based on the evaluation of historical trapping data and economic information, the Louisiana Department of Natural Resources, Coastal Restoration Division is confident that the project's incentive payment program will increase the annual nutria harvest to levels consistent with the established target of 400,000 animals per year. It is recommended that the Coastwide Nutria Control Program project be approved for CWPPRA Phase 2 funding.

References

- Genesis Laboratories, Inc. 2002. Nutria (*Myocastor coypus*) in Louisiana. A report prepared for the Louisiana Department of Wildlife and Fisheries. 156 pp.
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- Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority. 1998. Coast 2050: Toward a Sustainable Coastal Louisiana. Louisiana Department of Natural Resources. Baton Rouge, LA. 161 pp.
- Mouton, E., G. Linscombe, and S. Hartley. 2001. A survey of nutria herbivory damage in coastal Louisiana in 2001. Louisiana Department of Wildlife and Fisheries, Fur and Refuge Division. Baton Rouge, LA. 18 pp.
- O'Neil, T. 1998. Monitoring Plan: Project No. LA-02, Nutria Harvest and Wetland Restoration Demonstration Project. Baton Rouge, LA: Louisiana Department of Natural Resources, Coastal Restoration Division. 6 pp.