

# **Coastwide Nutria Control Program 2008-2009**

**Nutria Harvest and  
Distribution 2008-2009  
and  
A Survey of Nutria  
Herbivory Damage  
in Coastal Louisiana in  
2009**



**Conducted by:  
Coastal and Nongame Resources  
Louisiana Department of Wildlife and  
Fisheries**

**As part of the  
Coastwide Nutria Control Program\*  
CWPPRA Project (LA-03b)**



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# TABLE OF CONTENTS

	Page
Section 1	Nutria Harvest Distribution 2008-2009----- 4-12
Section 2	A Survey of Nutria Herbivory Damage in Coastal Louisiana in 2009----- 13-20
Section 3	Summary----- 20-22
Figures	
	Figure 1 (Annual Harvest and Avg. Price of Nutria) ----- 5
	Figure 2 (Range of Nutria Harvest) ----- 9
	Figure 3 (Nutria Harvest per Month) ----- 9
	Figure 4 (Harvest by Marsh Type) ----- 10
	Figure 5 (Method of Take) ----- 10
	Figure 6 (Method of Take by Marsh Type) ----- 11
	Figure 7 (Harvest by Parish) ----- 12
	Figure 8 (Damage Type) ----- 16
	Figure 9 (Percentage of Damaged Acres per Parish) ----- 17
	Figure 10 (Damaged Acres by Marsh Type) ----- 17
	Figure 11 (Nutria Relative Abundance Rating) ----- 18
	Figure 12 (Vegetative Damage Rating) ----- 18
	Figure 13 (Age of Damage and Condition Rating) ----- 19
	Figure 14 (Prediction of Recovery) ----- 19
	Figure 15 (CNCP Progress) ----- 21
Tables	
	Table 1 (Carcass Use) -----11
	Table 2 (Muskrat Damage) -----20
	Table 3 (Three Years Prior to CNCP) ----- 21
	Table 4 (First Five Years of the CNCP) ----- 21
	Table 5 (Nutria Harvest by Parish Seasons 1-7) ----- 24-25
	Table 6 (Method of Take by Parish Seasons 1-7) ----- 26-27
	Table 7 (Status and Number of Nutria Herbivory Sites) ----- 28
	Table 8 (Number of Nutria Damage Sites and Acres) ----- 29-30
	Table 9 (Number of Damage Sites and Acres by Marsh Type) ----- 31
	Table 10 (Nutria Relative Abundance Rating) -----32-33
	Table 11 (Vegetative Damage Rating) ----- 34-35
	Table 12 (Age of Damage and Condition Rating) ----- 36-37
	Table 13 (Prediction of Recovery) ----- 38-39
	Table 14 (2008 Nutria Veg. Damage Survey Results) ----- 41
	Table 15 (2009 Nutria Veg. Damage Survey Results) ----- 44

## Appendices

Appendix A -----	23-39
- Season Comparison Data	
Appendix B -----	40-42
- 2008 Nutria Veg. Damage Sites	
- 2008-2009 Harvest and 2009 Damage Sites Map	
Appendix C -----	43-46
- 2009 Veg. Damage Survey Results	

## Section 1

### NUTRIA HARVEST DISTRIBUTION 2008-2009

#### Introduction

Since 2001, annual coast wide aerial surveys assessing herbivory in Louisiana have documented approximately 26,273 acres of marsh converted to open water due to nutria vegetative damage. (This acreage is actual observed acreage multiplied by a constant to account for land not seen from the transects.) This loss of marsh in Louisiana is devastating to the people that depend on it for their livelihood as well as people that use it for recreation. It is vital to the people of Louisiana to protect the wetlands from destruction whenever possible. In order to remove the threat of land loss due to nutria, the Coastwide Nutria Control Program was developed.

The nutria (Myocastor coypus) is a large semi-aquatic rodent indigenous to South America. The first introduction of nutria to North America occurred in California in 1899; however it was not until the 1930's that additional animals were introduced in seven other states. These importations, primarily for fur farming, failed during the Second World War as a result of poor pelt prices and poor reproductive success. After the failures of these fur farms, nutria were released into the wild. Sixteen states now have feral populations of nutria.

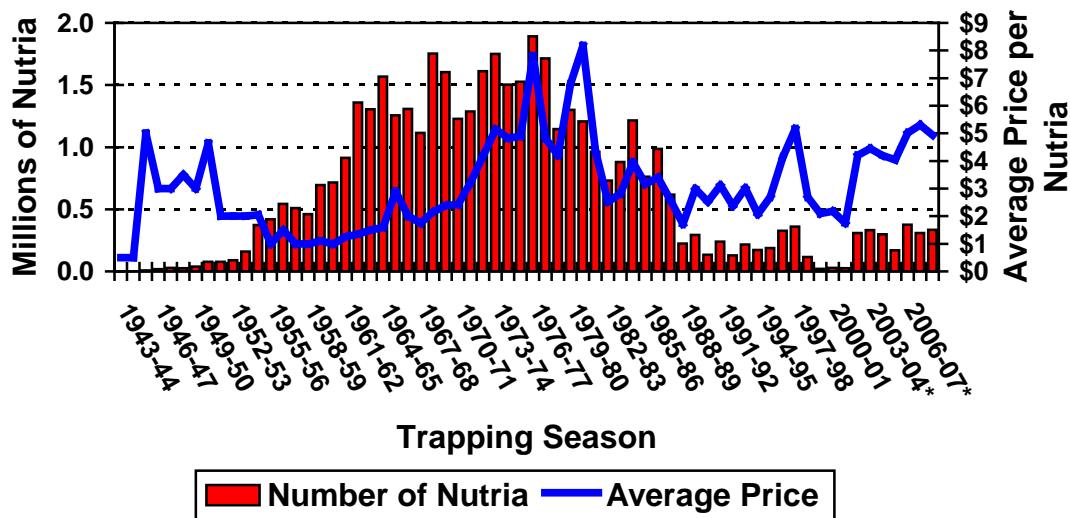
The Gulf Coast nutria population originated in Louisiana in the 1930's from escapes and possible releases from nutria farms. Populations first became established in the western coastal portion of the state and then later spread to the east through natural expansion coupled with stocking. During the mid-1950s muskrat populations were declining, nutria had little fur value, and serious damage was occurring in rice fields in southwestern Louisiana and sugarcane fields in southeastern Louisiana; farmers complained about damage to crops and levee systems, while muskrat trappers blamed the nutria for declining numbers of muskrats. In 1958, the Louisiana Legislature placed the nutria on the list of unprotected wildlife and created a \$0.25 bounty on every nutria killed in 16 south Louisiana parishes, but funds were never appropriated.

Research efforts were initiated by the federal government in the southeastern sugarcane region of the state to determine what control techniques might be successful. This research conducted by the U.S. Fish and Wildlife Service during the 1960's examined movements in relation to sugarcane damage and recommended shooting, trapping, and poisoning in agricultural areas. Ted O'Neil, Chief of the Fur and Refuge Division, Louisiana Department of Wildlife and Fisheries (LDWF), believed that the problem could only be solved through the development of a market for nutria pelts. A market for nutria developed slowly during the early 1960's and by 1962 over 1 million pelts were being utilized annually in the German fur trade. The nutria became the backbone of the Louisiana fur industry for the next 20 years, surpassing the muskrat in 1962 in total numbers harvested. In 1965, the state legislature returned the nutria to the protected list. As fur prices showed a slow rise during most of the 1970's and early 1980's, the harvest averaged 1.5 million pelts and complaints from agricultural interest became uncommon. From 1971 through 1981 the average annual value of the nutria harvest to the coastal trappers was \$8.1 million. The nutria harvest in Louisiana from 1962 until 1982 remained over 1 million annually. The harvest peaked in 1976 at 1.8 million pelts worth \$15.7 million to coastal trappers (Figure 1).

The nutria market began to change during the early 1980's. In 1981-1982, the nutria harvest dropped slightly below 1 million.

This declining harvest continued for two more seasons; then in the 1984-1985 season, the harvest jumped back up to 1.2 million. During the 1980-1981 season, the average price paid for nutria was \$8.19. During the 1981-1982 season, the price dropped to \$4.36 and then in 1982-1983, the price dropped to \$2.64. Between the 1983-1984 season and the 1986-1987 season, prices fluctuated between \$3.00 and \$4.00. Then in 1987-1988 and again in 1988-1989 prices continued to fall (Figure 1). From 1982 through 1992 the average annual value of the nutria harvest was only \$2.2 million. Between 1988-1989 and 1995-1996 the number of nutria harvested annually remained below 300,000 and prices remained at or below a \$3.00 average.

Due to a strong demand for nutria pelts in Russia in both 1996-1997 and in 1997-1998, 327,286 nutria were harvested at an average price of \$4.13 and 359,232 nutria were harvested at an average price of \$5.17 during those seasons respectively. In September 1998, the collapse of the Russian economy and general instability in the Far East economies weakened the demand for most wild furs including nutria. The demand for nutria pelts in Russia declined quickly due to the devaluation of the Russian ruble. During the 1998-1999 trapping season, pelt values fell to \$2.69 and harvest decreased to only 114,646, less than one-third of the previous year. During the 1999-2000 trapping season there was virtually no demand for nutria pelts. The harvest decreased to 20,110 nutria. This was, by far, the lowest nutria harvest on record since the mid-1950s. The number of nutria harvested in 2000-2001 trapping season increased to 29,544. The value of nutria pelts decreased to \$1.75 during the 2001-2002 season, prompting another decrease in harvest to 24,683 nutria.



**Figure 1**

During the strong market period for nutria pelts, there were no reports of wetland damage caused by nutria. However, before the market developed and after the market declined, reports of marsh vegetation damage from land managers became common. Such complaints began in 1987 and became more frequent during the early 1990's. In response, the Fur and Refuge Division of the Louisiana Department of Wildlife and Fisheries (LDWF) initiated limited aerial survey flights, particularly in southeastern Louisiana. Survey flights of Barataria and Terrebonne basins were conducted during the 1990's, with initial support from Barataria-Terrebonne National Estuary Program (BTNEP) and later support from Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). From 1993 to 1996 these flights showed acres of damage increasing from approximately 45,000 to 80,000 acres within the basins. The first CWPPRA funded coast wide survey, conducted in 1998, showed herbivory damage areas totaling approximately 90,000 acres. By 1999 this coast wide damage had increased to nearly 105,000 acres.

This rapid and dramatic increase in damaged acres prompted LDWF to pursue funding for the Coastwide Nutria Control Program (CNCP) in January 2002.

The project is funded by the CWPPRA through the Natural Resources Conservation Service (NRCS) and the Louisiana Department of Natural Resources (LDNR) with the LDWF as the lead implementing agency. Task number 1 requires LDWF to conduct an annual aerial survey to evaluate the herbivory damage caused by nutria. Task number 2 of the LDNR and LDWF Interagency Agreement No. 2511-02-29 for the CNCP requires LDWF to conduct general project operation and administration. LDWF is required to 1) conduct and review the registration of participants in the CNCP; 2) establish collection stations across coastal Louisiana; 3) count valid nutria tails and present participants with a receipt/voucher; 4) deliver tails to an approved disposal facility and receive documentation that ensures the nutria will be properly disposed of and shall not leave the facility; and 5) process and maintain records regarding participants, number and location where tails were collected. Task 3 requires LDWF to provide incentive payments to program participants and task 4 requires LDWF to provide a report regarding the distribution of the harvest by township.

The program area is coastal Louisiana bounded to the north by Interstate-10 from the Texas state line to Baton Rouge, Interstate-12 from Baton Rouge to Slidell, and Interstate-10 from Slidell to the Mississippi state line. The project goal is to significantly reduce damage to coastal wetlands attributable to nutria herbivory by removing 400,000 nutria annually. This project goal is consistent with the Coast 2050 common strategy of controlling herbivory damage to wetlands. The method chosen for the program is an incentive payment to registered trappers/hunters for each nutria tail delivered to established collection centers. Initially, registered participants were given \$4.00 per nutria tail. To encourage participation, the payment was increased to \$5.00 per tail in the 2006-2007 season.

### **This section reports on the Nutria Harvest Distribution for 2008-2009.**

#### **Methods**

The application for participation in the Coastwide Nutria Control Program (CNCP) was developed in July 2002 but was modified in June 2003 to obtain better information about the location of nutria harvest. It was made available through the LDWF offices and website, as well as LSU Cooperative Extension offices. In order for a participant to be qualified, the individual must complete the application, obtain written permission from a landowner or land manager with property in the program area, complete a W-9 tax form and provide LDWF with a complete legal description of the property to be hunted or trapped. A map outlining the property boundaries was an added requirement of participants beginning with the 2003-2004 season. Once an applicant was accepted, the participant was mailed information on the program's regulations, collection sites for nutria tails, contact information and a CNCP registration card.

Coastal Environments Inc. (CEI) was selected as the contractor to develop and maintain the program database, collect nutria tails, and distribute incentive payment checks to participants for tail harvests. The contract with CEI, which began with the 2002-2003 season, was extended to include the 2003-2004 through 2006-2007, with the option to renew for 3 years there after. CEI's first renewal season was (2007-2008), and they just completed the second (2008-2009). Tail collection sites were originally established at Rockefeller Refuge, Abbeville, Berwick (Morgan City), Houma, Luling and Slidell.

Collections were made once a week at each site, except for Rockefeller Refuge, Abbeville and Slidell, where collections were made by appointment only, due to low numbers of participants in those areas.

Louisiana's open trapping season began on November 20, 2008, and nutria tail collections began a week later. Collections were made utilizing a 16 foot by 8 foot trailer containing a freezer, sorting table and desk. A participant reported to a collection site, presented his nutria control program registration card and presented his tails to a CEI representative.



One CEI representative conducted an exact count of the nutria tails, which was then verified with the participant to ensure they were in agreement. At that time, the counted tails were placed into a plastic garbage bag labeled with the participant's CNCP registration number and the number of tails contained in that bag. Another CEI representative filled out a voucher for the number of tails delivered, checking to make sure the mailing address of the participant was correct. The participant was asked to provide the following information: 1) the method of taking the nutria, 2) the method in which the nutria carcass was used or abandoned, and 3) the month or months in which the nutria were harvested. When complete, the voucher was signed by the participant who would also indicate on a detailed map of their lease the location or locations where the nutria were harvested. The CEI representative recorded township and range of harvest, number of nutria harvested, and the transaction number on the map. One copy of the voucher was given to the participant, while one copy was retained by the CEI representative.



The information on the voucher was entered into a laptop computer and transferred electronically to the CEI main offices via an FTP site for analysis and quality control.

The data transfer occurred at the end of each collection day. Collected tails were transported to the BFI waste storage facility in Sorrento, Louisiana, at the end of each collection day or multiple times a day if necessary. The CEI representative checked in at a guard station where the vehicle containing the tails was weighed. The vehicle was also weighed when exiting the disposal site in order to calculate the exact amount of waste deposited at the facility. The tails were deposited into a biohazard waste pit under supervision of a BFI employee. The number of bags disposed, as well as weight deposited, was recorded on a receipt given to the CEI representative. Copies of the receipts for all disposals made were supplied to LDWF.

At the end of the collection week, the maps were transported to CEI's office in Baton Rouge. At this time QA/QC of the data transferred for the entire week took place. The trapped/hunted areas that were outlined on the lease maps were digitized into Arc Map GIS 9.2. CEI sent a weekly report to LDWF detailing each transaction, including a digitized map of that week's trapped/hunted areas. Each Monday morning, after receiving a weekly report and bill, LDWF sent a payment to CEI for the amount of tails collected and services rendered. CEI in turn sent participants checks through the mail for the amount of tails turned in. Louisiana's open trapping season ended on March 31, 2009, and nutria tail collections continued for one week into April. After the conclusion of the season, CEI provided LDWF with all the transaction information for the entire season from November to March. This final report contains information recorded on the vouchers, the digitized trapped/hunted area, the nutria control program database and an Arc Map 9.2 project map with related information.



## Results and Discussion

### Participant Totals

A total of 334,038 nutria tails, worth \$1,670,190 in incentive payments, were collected from 262 participants in the 2008-2009 season. Approximately one third of these participants turned in 800 or more tails (Figure 2.)

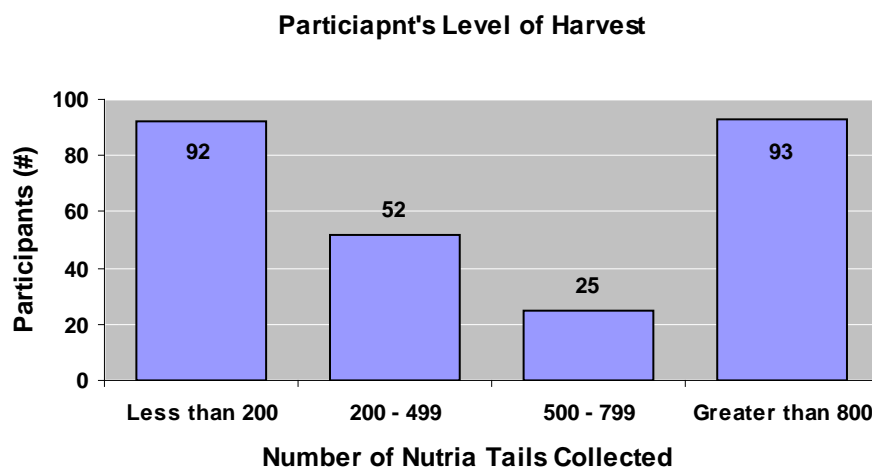


Figure 2

### Harvest by Month

The 2008-2009 trapping season began November 20<sup>th</sup>, 2008 and continued through March 31<sup>st</sup>, 2009. One hundred three thousand and eighty one (103,081) tails were collected in the month of February making it the most active month of the season (Figure 3.)

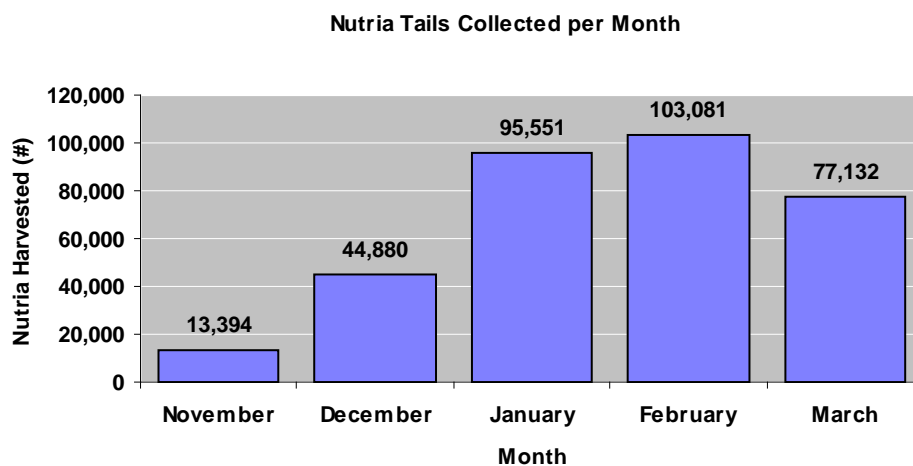


Figure 3

## Harvest by Marsh Type

Harvest data were classified by marsh type, which includes: fresh marsh, intermediate marsh, brackish marsh, salt marsh and other. The category “other” includes swamp, mixed forest, open water and agriculture land types.

In the 2008-2009 season, 45% of the nutria harvested fell into the “Fresh Marsh” category, followed by 32% being harvested from the “Other” (Figure 4.).

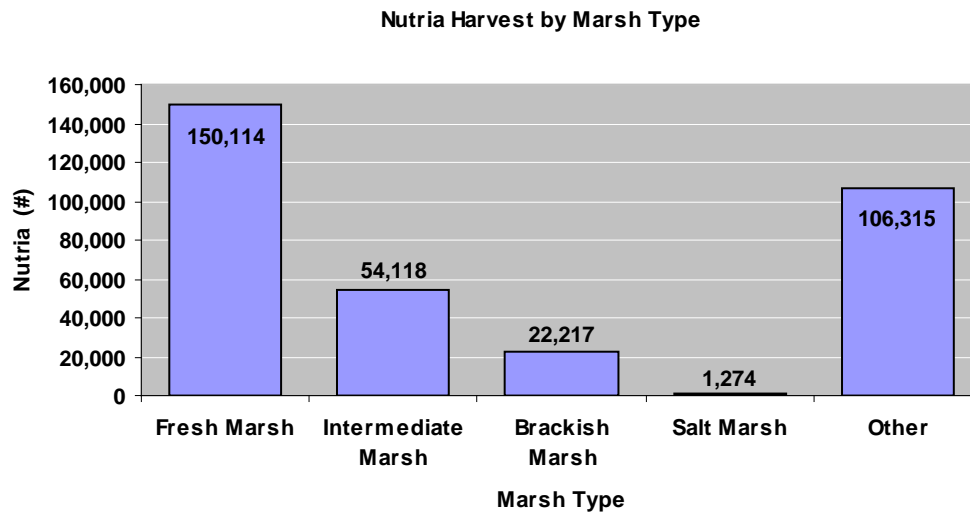


Figure 4

## Method of Take

During collection transactions, program participants indicated their method of take: trapped, shot with rifle, or shot with shotgun.

The predominant method used in the 2008-2009 season was shooting with a rifle (Figure 5.)

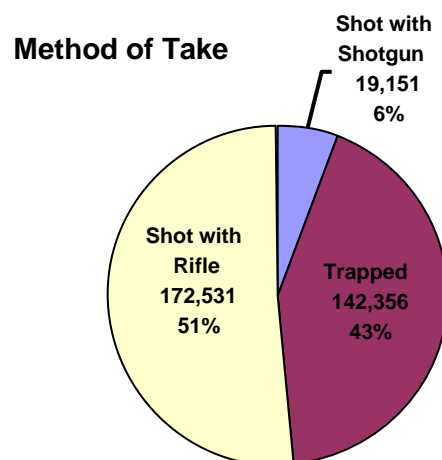
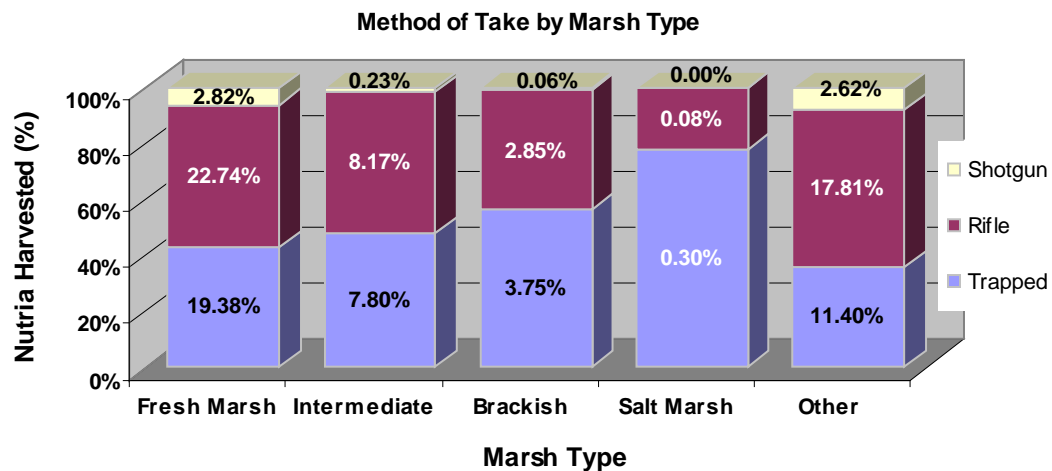


Figure 5

While shooting with a rifle was the most popular method of taking nutria in fresh marsh, trapping was the most utilized method in brackish and salt marshes (Figure 6.)



**Figure 6**

### Carcass Use

Use of nutria carcasses, was recorded for each participant transaction. For the purpose of this survey, use categories include: 1) harvested for meat and/or 2) harvested for fur (Table 1.)

MARSH TYPE	Fur	Meat	Abandon Buried	Abandon Vegetation	Abandon Water
Fresh	3,525	3,636	108,227	21,418	16,606
Intermediate	4,853	4,453	39,956	3,825	5,485
Brackish	7,148	6,589	12,629	802	1,565
Salt	940	940	313	21	0
Other	2,571	1,934	86,612	11,769	5,364
<b>Total</b>	<b>19,036</b>	<b>17,553</b>	<b>247,737</b>	<b>37,834</b>	<b>29020</b>

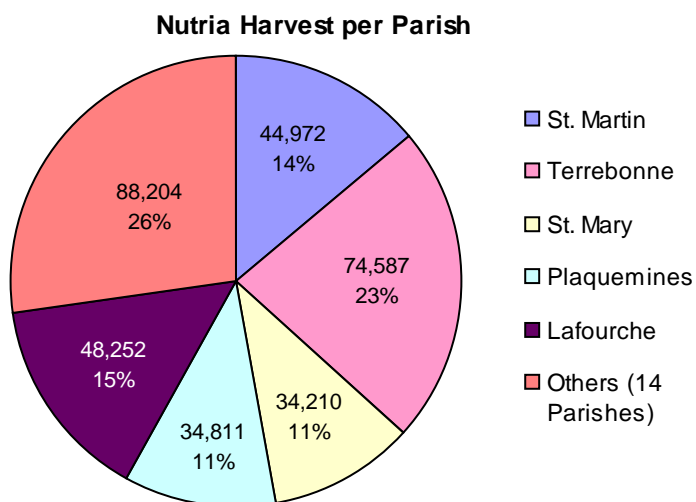
**Table 1**

Overall, almost 11% of the nutria harvested was utilized for meat and/or fur. This is a little less than half the utilization last season. The remaining 89% were disposed of by approved methods, categories include: 1) buried carcasses, 2) placed in heavy overhead vegetation, or 3) placed in water (Table 1.)

All interested participants were supplied a fur buyer/fur dealer list to encourage the use of animals for the fur and meat, and interested fur buyers/dealers were supplied with a list of program participants.

## Harvest by Parish

Nineteen parishes were represented in the 2008-2009 season of the Coastwide Nutria Control Program, with nutria harvests ranging from 231 to 74,587. Terrebonne Parish reported the highest number of tails with 74,587 followed by Lafourche and St. Martin Parish with 48,252 and 44,972 respectively (Figure 7).



**Figure 7**

## **Section 2**

### **A SURVEY OF NUTRIA HERBIVORY DAMAGE IN COASTAL LOUISIANA IN 2009**

#### **Introduction**

Herbivory damage was noticed in the late 1980s by landowners and land managers when the price of fur dropped and the harvest of nutria all but ceased. The LDWF was contacted to investigate the problem. The first region wide aerial survey became possible because of the interest and concern of many state and federal agencies, coastal land companies and, in particular, funding provided by BTNEP. The objectives of the aerial survey were to: (1) determine the distribution of damage along the transect lines as an index of region wide damage, (2) determine the severity of damage as classified according to a vegetative damage rating, (3) determine the abundance of nutria by the nutria relative abundance rating (4) determine the species of vegetation being impacted and (5) determine the status of recovery of selected damaged areas (Linscombe and Kinler 1997).

Helicopter surveys were flown in May and December 1993 and again in March and April 1996 across the Barataria and Terrebonne Basins. During the December 1993 survey, 90 damaged sites were observed with more than 15,000 acres of marsh impacted along the transects and an estimated 60,000 acres across the study area. In 1996, a total of 157 sites were observed. The damage observed along the transect lines increased to 20,642 acres, and an extrapolated acreage of 77,408 acres across the study area. (The extrapolated coast wide estimate is derived by multiplying the observed acres by 3.75 to account for area not visible from the transect lines.) All of the 1993 sites were evaluated again in 1996, but only 9% showed any recovery. Clearly, the trend identified was a continued increase in both the number of sites and the extent of nutria damage in the Barataria and Terrebonne Basins.

In 1998, the first coast wide nutria herbivory survey was flown, as part of the Nutria Harvest and Wetland Demonstration Program (LA-03a). A total of 23,960 acres of damaged wetlands were located at 170 sites along the survey transects, with an extrapolated coast wide estimate of 89,850 acres. In 1999, the damage increased to 27,356 acres located at 150 sites, with an extrapolated coast wide estimate of 102,585 acres. In 2000, the damage slightly decreased to 25,939 acres located at 132 sites, with an extrapolated coast wide estimate of 97,271 acres. In 2001, the damage decreased to 22,139 acres located at 124 sites, with an extrapolated coast wide estimate of 83,021 acres. In the 2002 survey, the first survey funded as part of the CNCP and the survey which preceded implementation of the CNCP incentive payments, the damage decreased again, but only slightly to 21,185 acres located at 94 sites, with an extrapolated coast wide estimate of 79,444 acres. During the 2003 survey, a total of 84 sites had some level of vegetative damage and covered a total of 21,888 acres, with an extrapolated coast wide estimate of 82,080 acres. In summary, the coast wide estimates of nutria herbivory damage prior to implementation of the CNCP incentive payments (from 1998 to 2003) ranged from 79,444 to 102,585 acres.

Vegetative damage caused by nutria has been documented in at least 11 Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) project sites in the Barataria and Terrebonne Basins. Nutria herbivory is only one of many factors causing wetlands loss, but the additional stress placed on the plants by nutria herbivory may be very significant in CWPPRA projects sites and throughout coastal Louisiana.

The previous extrapolated estimates of 79,444 to 102,585 acres of marsh damaged was conservative because only the worst sites (most obvious) can be detected from aerial surveys; the actual number of acres being impacted was certainly higher. When vegetation is removed from the surface of the marsh, as a result of over grazing by nutria, the very fragile organic soils are exposed to erosion through tidal action and/or storms. If damaged areas do not revegetate quickly, they may become open water as tidal scour removes soil and thus lowers elevation. This is evident as the damaged sites that converted to open water over the last five years have been in the intermediate and brackish marsh types. Frequently the plant's root systems are also damaged, making recovery through vegetative regeneration very slow.

In an effort to create an incentive for trappers and hunters, the CNCP was implemented. Task number 1 of the LDNR and LDWF Interagency Agreement No. 2511-02-29 for the CNCP requires LDWF to conduct annual coast wide aerial surveys during spring/summer to document the current year impact of nutria herbivory. Survey techniques followed Linscombe and Kinler (1997), and CNCP funded surveys, have been conducted each spring from 2003 to 2009. Results were analyzed and the numbers of acres impacted or recovered were determined.

### **This section reports on the 2009 Coastwide Nutria Herbivory Survey.**

#### **Methods**



The 2009 coast wide nutria herbivory survey was conducted April 6<sup>th</sup>- 9<sup>th</sup>, April 15<sup>th</sup>-17<sup>th</sup>, and April 20<sup>th</sup> -22<sup>nd</sup>. North-South transects were flown throughout the fresh, intermediate and brackish marshes of coastal Louisiana. A total of 155 transects (covering 2,354.7 miles) were surveyed for damage; the transects were spaced approximately 1.8 miles apart, starting at the swamp-marsh interface and continuing south to the beginning of the salt marsh. Due to low nutria population density, salt marsh habitat was not included in the survey. Depending upon visibility and vegetative conditions, an altitude of 300-400 feet was considered optimum. At this altitude, vegetative damage was identifiable and allowed for a survey transect width of about 1/4 mile on each side of the helicopter. Flight speed was approximately 60 mph. Two observers were used to conduct the survey, each positioned on opposite sides of the helicopter. In addition to locating vegetative damage, one observer navigated along the transect line and the other observer recorded all pertinent data.



When vegetative damage was identified, the following information was recorded.

- 1) Location of each site was determined by recording latitude and longitude utilizing GPS equipment. A real time differential corrected (WAAS Enabled) GPS (Garmin GPSmap 296) was utilized to allow for accurate location of damaged sites. The software used was DNRGarmin (written by Minnesota DNR) operating in ArcView 9.2. The size of each damage site was recorded by logging polygons using stream digitizing with the GPS equipment.
- 2) The abundance of nutria sign was placed in one of the following nutria relative abundance rating (NRAR) categories: **no nutria sign visible (0), nutria sign visible (1), abundant feeding (2), heavy feeding (3).**
- 3) The extent of damage to the vegetation was placed in one of the following vegetative damage rating categories: **no vegetative damage (0); minor vegetative damage (1)** which is defined as a site containing feeding holes, thinning vegetation and some visible soil; **moderate vegetative damage (2)** which is defined as a site that has large areas of exposed soil and covers less than 50% of the site; **severe vegetative damage (3)** which is defined as a site that has more than 50% of the soil exposed; or **converted to open water (4).**
- 4) The dominant plant species were identified and recorded for damaged areas, recovering areas and in the adjacent areas.
- 5) The age of damage and condition is determined by considering feeding activity and vegetation condition. The age of damage and condition was placed in one of the following categories: **recovered (0), old recovering (1), old not recovering (2), recent recovering (3), recent not recovering (4) or current (occurring now)(5).**
- 6) The prediction of vegetative recovery is made considering feeding activity, age of damage and the extent of damage. The prediction of vegetative recovery by the end of 2008 was characterized by one of the following categories: **no recovery (0), full recovery (1), partial recovery (2) or increased damage (3).**
- 7) The number of nutria observed at each site was recorded.

In addition to searching for new damaged sites, all previously identified damaged sites were revisited to assess extent and duration of damage or to characterize recovery. All data were entered into a computer for compilation. Damaged site locations are provided on the attached herbivory map and a data summary in Appendix B.

## Results and Discussion

There were 27 sites included in the 2009 vegetative damage survey, 26 previously classified as damage sites in the 2008 survey and 1 new site. Four of the nutria damage sites from 2008 have completely recovered as well as 2 storm related sites. One site has partially recovered and partially converted to open water. The remaining 20 sites are classified as damage sites and broken into 3 categories (Figure 8.)

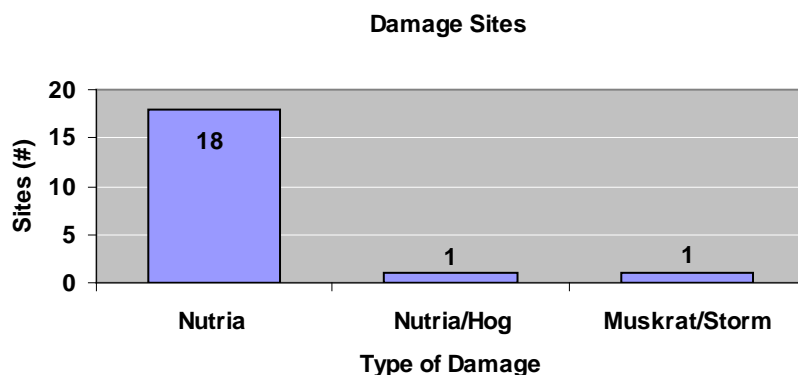


Figure 8

## Nutria Damage

The following discussion details the 19 sites that had nutria, or nutria/hog damage (Appendix A). A total of 5,422 acres along transects (extrapolated to be 20,333 acres coast wide) in 2009, were impacted by nutria feeding activity. This represents approximately a 12% decrease in acres impacted by nutria in 2008 (6,171 acres, extrapolated 23,141 acres coast wide.)



## Damage by Parish

Terrebonne parish experienced more than half of the damaged acres in 2009 (Figure 9.).

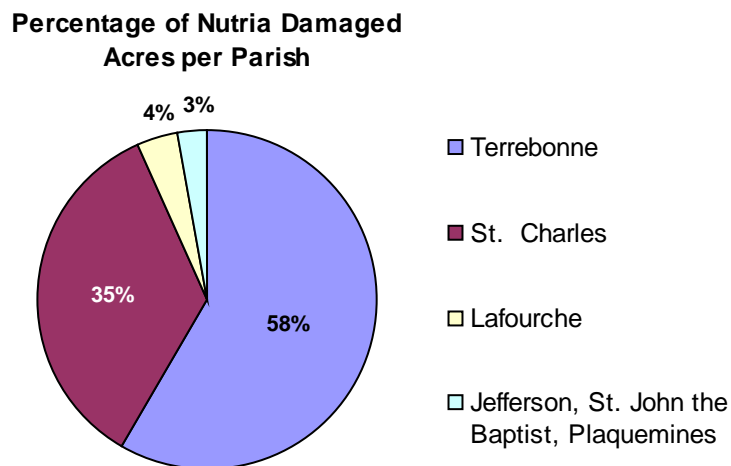


Figure 9

## Damage by Marsh Type

Marsh type was recorded for each damage site, as well as the type of vegetation based on the Linscombe and Chabreck 2001 survey (Figure 10.)

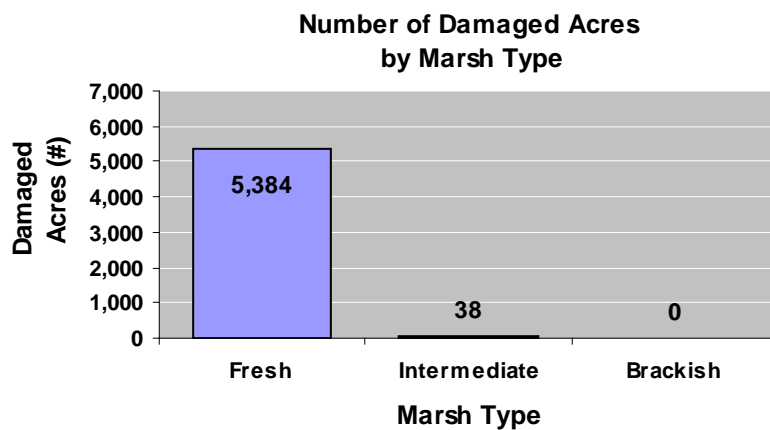


Figure 10

Fresh marsh continued to be the most affected by nutria herbivory (~ 93%). The typical vegetation impacted in fresh marsh was *Eleocharis* spp. and *Hydrocotyle* spp., while *Schoenoplectus americanus* (formerly *Scirpus olneyi*) and *Eleocharis* spp. were commonly impacted species in intermediate and brackish marshes.

## Nutria Relative Abundance Rating

A nutria relative abundance rating (NRAR) was used to quantify the abundance of nutria at each site. Categories include: (0) no nutria sign visible, (1) nutria sign visible, (2) abundant feeding sign, and (3) heavy feeding sign; sites converted to open water are not given a NRAR (Figure 11.)

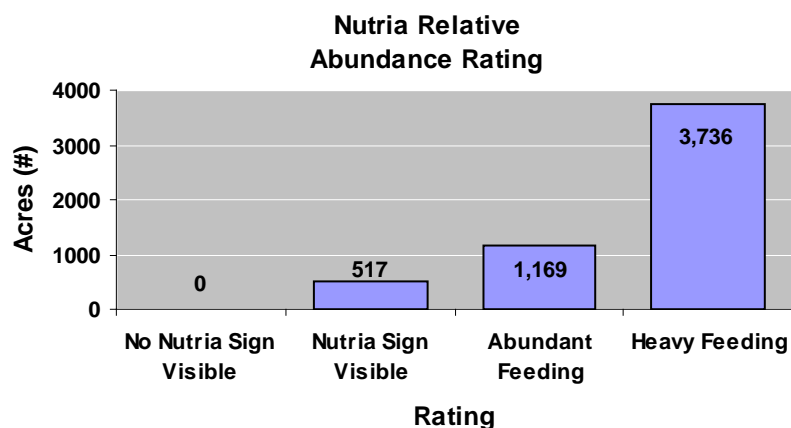


Figure 11

## Vegetative Damage Rating

Vegetative damage was also evaluated at each site. A rating system was developed in order to quantify nutria vegetative damage. The vegetative damage rating (VDR) has five categories: (0) no vegetative damage, (1) minor vegetative damage, (2) moderate vegetative damage, (3) severe vegetative damage, (4) converted to open water (Figure 12.)

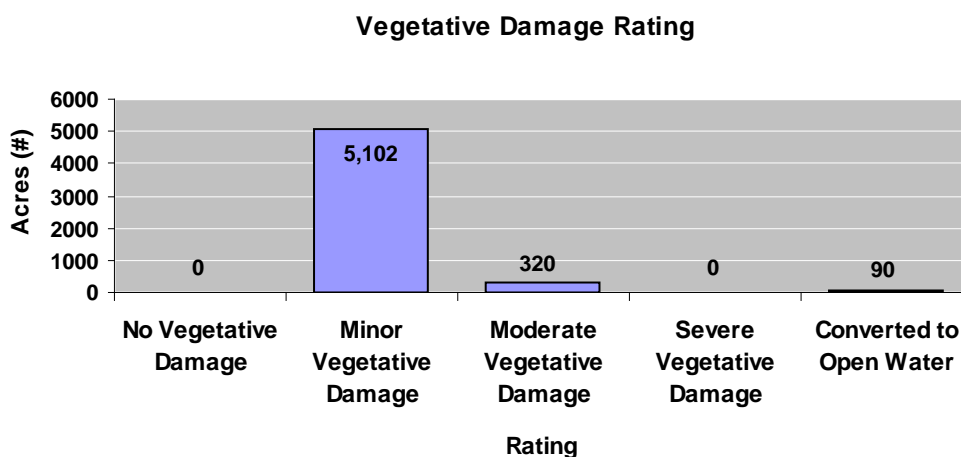


Figure 12

Only 1 partial site converted to open water in 2009. This was site number 94, and it is located at the north end of Lake Salvador. This area is in the Davis Pond Pool, which is heavily influenced by water level fluctuations. The acres converted to open water may be a result of the increased flow of the project.

## Age of Damage Rating

Categories for the age of damage and condition rating include: (1) current damage, (2) recent damage-recovering, (3) recent damage not recovering, (4) old damage-recovering, (5) old damage-not recovering, and (0) recovered (Figure 13.)

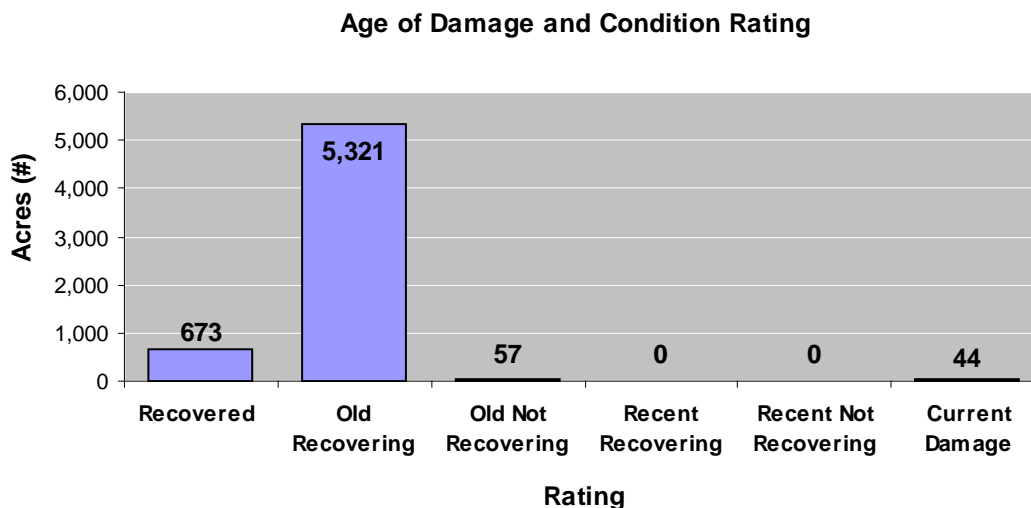


Figure 13

## Prediction of Recovery

For each site with current damage, the degree of recovery by the end of the 2009 growing season was predicted. These categories include: (1) full recovery, (2) partial recovery, (3) increased damage and (4) no recovery predicated (Figure 14.)

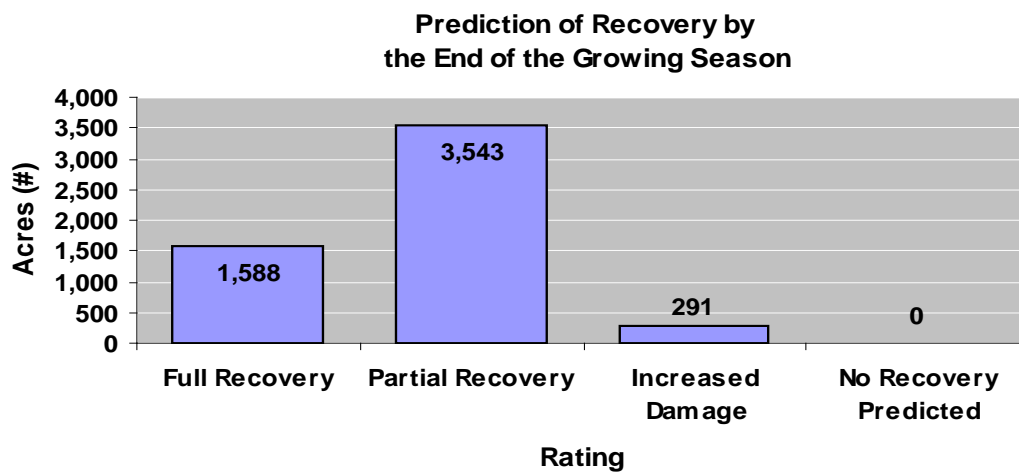


Figure 14

## Muskrat Damage

During the 2009 survey, 1 muskrat damage site from 2008 was re-evaluated.

Site #	Damage Type in 2008	Damage Type in 2009/ Condition
422	New Muskrat Site	Storm damage (no muskrat visible)

**Table 2**

## Conclusions

The 2009 vegetative damage survey yielded a total of 5,422 acres of nutria damage along transect lines. This figure, when extrapolated, demonstrates that 20,333 acres were impacted coast wide at the time of survey. When compared to 2008 (6,171 acres or 23,141 acres extrapolated coast wide), there was approximately a 12% decrease in the number of damaged acres.

Due to the distance between survey lines, all areas impacted by nutria herbivory could not be identified. Additionally, there were survey miles where nutria activity was observed but marsh conditions did not warrant a damage classification. Again, only the most obvious impacted areas were detected so the total impact of nutria was probably underestimated, however the trend in both decreasing damage acreage and increased marsh recovery are significant.

## Section 3

### CNCP: Summary of Results (2002-2009) and Adaptive Management

Since the beginning of the Coastwide Nutria Control Program, the number of nutria damage sites observed by aerial surveys has continued to decline (Figure 15.)

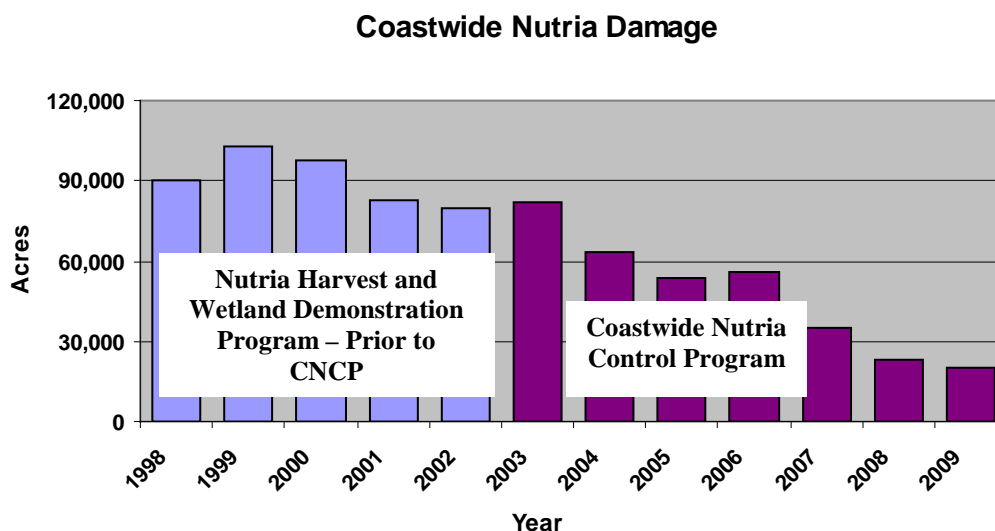


Figure 15

Three years prior to implementation of CNCP incentive payments.

	Nutria Harvested		Herbivory Damage (acres)
<b>1999-2000</b>	20,110	<b>2000</b>	97,271
<b>2000-2001</b>	29,544	<b>2001</b>	83,021
<b>2001-2002</b>	24,683	<b>2002</b>	79,444

Table 3

Seven years of CNCP incentive payment implementation.

	Nutria Harvested		Herbivory Damage (acres)
<b>2002-2003</b>	308,160	<b>2003</b>	82,080
<b>2003-2004</b>	332,396	<b>2004</b>	63,398
<b>2004-2005</b>	297,535	<b>2005</b>	53,475
<b>2005-2006</b>	168,843	<b>2006</b>	55,755
<b>2006-2007</b>	375,683	<b>2007</b>	34,665
<b>2007-2008</b>	308,212	<b>2008</b>	23,141
<b>2008-2009</b>	334,038	<b>2009</b>	20,333

Table 4

Once again proving the Coastwide Nutria Control Program successful, the 2008-2009 season ended with a record harvest as well as fewer impacted acres. To date, nutria harvest in coastal Louisiana has increased to an average of 303,552 animals per year, and the number of damage acres continues to decrease.

As in the past, CNCP applications will be sent to all participants who submitted applications over the last two years. LDWF will also continue the coordination with trappers and fur buyers/dealers to encourage the maximum use of the entire animal, and landowners will be encouraged to trap/hunt the existing damage sites.

**Appendix A.**  
**A Comparison of Seasons 1-7**  
**(2002-2009)**

PARISH	2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage
Ascension	2,710	0.90%	5,474	1.60%	1,858	0.60%	1,678	1.00%	2,226	0.59%
Assumption	3,128	1.00%	814	0.20%	428	0.10%	2,307	1.40%	2,095	0.56%
Calcasieu	143	-	374	0.10%	448	0.20%	58	0.00%	19	0.01%
Cameron	7,851	2.60%	8,701	2.60%	16,617	5.60%	3,744	2.20%	1,725	0.46%
Iberia	1,412	0.50%	1,960	0.60%	3,521	1.20%	3,014	1.80%	18,910	5.03%
Iberville	0	-	1,567	0.50%	5,559	1.90%	2,360	1.40%	9,172	2.44%
Jefferson	20,529	6.70%	24,896	7.50%	11,036	3.70%	2,875	1.70%	10,405	2.77%
Jefferson Davis	121	-	85	-	175	0.10%	110	0.10%	0	0.00%
Lafayette	39	-	25	-	10	0.00%	0	-	0	0.00%
Lafourche	28,852	9.40%	51,736	15.60%	32,411	10.90%	24,668	14.60%	28,038	7.46%
Livingston	2,631	0.90%	357	0.10%	911	0.30%	1,921	1.10%	1,250	0.33%
Orleans	597	0.20%	0	-	538	0.20%	0	-	575	0.15%
Plaquemines	63,208	20.50%	86,720	26.10%	39,043	13.10%	1,816	1.10%	5,815	1.55%
St. Bernard	5,769	1.80%	13,344	4.00%	4,344	1.50%	0	-	291	0.08%
St. Charles	11,169	3.60%	12,672	3.80%	15,867	5.30%	13,807	8.20%	18,690	4.97%
St. James	95	-	487	0.20%	2,841	1.00%	4,912	2.90%	7,111	1.89%
St. John the Baptist	18,450	6.00%	6,137	1.80%	8,404	2.80%	6,384	3.80%	15,786	4.20%
St. Martin	11,425	3.70%	15,039	4.50%	31,656	10.60%	15,903	9.40%	113,629	30.25%
St. Mary	26,004	8.40%	16,277	4.90%	20,940	7.00%	21,023	12.50%	34,693	9.23%
St. Tammany	4,638	1.50%	3,756	1.10%	5,175	1.70%	1,423	0.80%	2,067	0.55%
Tangipahoa	1,245	0.40%	745	0.20%	565	0.20%	826	0.50%	1,843	0.49%
Terrebonne	92,831	30.10%	72,846	21.90%	81,135	27.30%	57,756	34.20%	99,433	26.47%
Vermilion	5,313	1.70%	8,584	2.60%	14,503	4.70%	2,258	1.30%	1,813	0.48%
West Baton Rouge	-	-	-	-	-	-	-	-	97	0.03%
<b>Total</b>	308,160	99.90%	332,596	99.90%	297,535	100.00%	168,843	100.00%	375,683	100.00%

**Table 5.** Nutria harvested by parish seasons 1-7, Coastwide Nutria Control Program.



PARISH	2007-2008		2008-2009									
	Nutria Harvested	Percentage	Nutria Harvested	Percentage								
Ascension	1,957	0.63%	7,029	2.10%								
Assumption	3,863	1.25%	1,093	0.33%								
Calcasieu	19	0.01%	0	0.00%								
Cameron	649	0.21%	1,245	0.37%								
Iberia	6,119	1.99%	978	0.29%								
Iberville	2,105	0.68%	231	0.07%								
Jefferson	11,299	3.67%	12,515	3.75%								
Jefferson Davis	0	0.00%	0	0.00%								
Lafayette	0	0.00%	0	0.00%								
Lafourche	25,473	8.26%	48,252	14.45%								
Livingston	695	0.23%	444	0.13%								
Orleans	1,333	0.43	656	0.20%								
Plaquemines	41,072	13.33%	42,212	12.64%								
St. Bernard	4,150	1.35%	13,965	4.18%								
St. Charles	18,271	5.93%	21,215	6.35%								
St. James	9,604	3.12%	8,990	2.69%								
St. John the Baptist	6,728	2.18%	10,189	3.05%								
St. Martin	54,726	17.76%	44,972	13.46%								
St. Mary	34,210	11.10%	34,811	10.42%								
St. Tammany	4,356	1.41%	5,680	1.70%								
Tangipahoa	2,323	0.75%	4,974	1.49%								
Terrebonne	78,934	25.61%	74,587	22.33%								
Vermilion	326	0.11%	0	0.00%								
West Baton Rouge	0	0.00%	0	0.00%								
<b>Total</b>	308,212	100.00%	334,038	100.00%								

**Table 5 (Continued).** Nutria harvested by parish seasons 1-7, Coastwide Nutria Control Program.

PARISH	2002-2003			2003-2004			2004-2005			2005-2006		
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shot Gun	Trap	Rifle	Shotgun
Ascension	0	2,306	404	0	4,093	1,381	100	1,678	80	470	908	300
Assumption	284	2,786	58	47	767	0	188	106	134	1,454	711	143
Calcasieu	0	143	0	0	374	0	213	24	212	57	1	0
Cameron	3,611	4,210	30	4,974	3,639	89	5,779	8,961	1,877	1,362	583	1,799
Iberia	0	1,353	59	636	1,324	0	1,286	1,310	926	1,215	449	1,350
Iberville	0	0	0	717	850	0	4,348	1,211	0	1,156	622	582
Jefferson	5,869	14,094	566	12,991	11,835	70	6,286	4,307	443	2,234	477	164
Jefferson Davis	121	0	0	85	0	0	158	18	0	109	1	0
Lafayette	19	10	10	0	25	0	0	10	0	0	0	0
Lafourche	11,807	16,826	219	28,516	22,780	440	12,221	18,212	1,977	9,113	11,000	4,555
Livingston	0	2,631	0	0	336	21	0	911	0	0	1,921	0
Orleans	287	219	91	0	0	0	538	0	0	0	0	0
Plaquemines	9,899	52,933	376	34,683	51,302	735	18,121	20,642	280	343	843	630
St. Bernard	2,877	2,892	0	5,412	7,783	149	727	3,617	0	0	0	0
St. Charles	2,099	8,706	364	2,801	9,543	329	1,279	13,958	631	1,863	10,915	1,029
St. James	48	47	0	97	350	40	32	2,752	57	278	4,239	395
St. John the Baptist	1,505	11,132	5,813	2,517	2,200	1,420	2,971	4,788	645	2,165	3,488	538
St. Martin	1,497	9,593	335	5,784	8,790	465	10,684	9,703	11,269	4,137	5,355	6,412
St. Mary	11,073	14,849	82	6,616	9,619	42	9,700	10,798	442	9,266	11,202	554
St. Tammany	3,088	1,529	21	2,687	1,069	0	2,692	2,483	0	533	800	90
Tangipahoa	335	894	16	577	169	0	35	530	0	142	638	46
Terrebonne	46,761	45,317	753	44,419	26,335	2,092	31,730	45,893	3,512	28,132	25,577	4,047
Vermilion	2,370	2,729	214	5,119	3,435	30	5,580	7,900	572	1,076	1,182	0
West Baton Rouge	0	0	0	0	0	0	0	0	0	0	0	0
<b>*Total</b>	103,550	195,199	9,411	158,678	166,618	7,303	114,668	159,810	23,057	65,104	80,912	22,634

**Table 6.** Method of take by parish for seasons 1-7, Coastwide Nutria Control Program

\* Totals may not be exact due to reporting of percentages.

PARISH	2006-2007			2007-2008			2008-2009					
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun			
Ascension	0	2,008	218	0	1,905	52	217	6,751	61			
Assumption	354	686	1,056	634	2,944	285	85	933	75			
Calcasieu	19	0	0	19	0	0	0	0	0			
Cameron	347	902	477	509	70	70	1,062	128	55			
Iberia	6,695	4,635	7,580	3,623	1,248	1,247	258	524	196			
Iberville	4,907	460	3,860	754	508	843	103	0	128			
Jefferson	4,731	5,568	106	3,901	6,456	943	4,185	8,146	184			
Jefferson Davis	0	0	0	0	0	0	0	0	0			
Lafayette	0	0	0	0	0	0	0	0	0			
Lafourche	12,279	11,480	4,279	9,702	11,425	4,345	32,373	13,324	2,555			
Livingston	0	1,250	0	0	695	0	0	444	0			
Orleans	575	0	0	1,333	0	0	656	0	0			
Plaquemines	3,200	2,554	61	30,093	10,609	0	21,394	19,372	1,447			
St. Bernard	146	146	0	4,071	79	370	9,790	4,131	43			
St. Charles	6,637	9,401	2,652	3,607	13,366	1,298	6,111	14,036	1,068			
St. James	203	6,439	469	425	9,128	51	597	7,862	531			
St. John the Baptist	4,223	9,215	2,348	2,323	3,834	572	1,490	8,372	327			
St. Martin	39,972	35,737	37,920	27,937	17,123	9,666	21,134	17,512	6,326			
St. Mary	12,810	19,997	1,886	10,783	21,304	2,123	13,357	18,480	2,974			
St. Tammany	1,452	529	86	1,736	2,216	404	3,377	1,848	456			
Tangipahoa	542	1,189	113	563	1,760	0	321	4,530	124			
Terrebonne	36,867	51,357	11,209	28,055	45,000	5,879	25,846	46,139	2,602			
Vermilion	1,174	494	145	262	65	0	0	0	0			
West Baton Rouge	0	97	0	0	0	0	0	0	0			
<b>*Total</b>	137,133	164,144	74,465	130,330	149,734	28,148	142,356	172,531	19,151			

**Table 6 (continued).** Method of take by parish for seasons 1-7, Coastwide Nutria Control Program

\* Totals may not be exact due to reporting of percentages.

<b>Year</b>	<b>Number of sites surveyed</b>	<b>Number of sites with current damage</b>	<b>Number of site converted to open water</b>	<b>Sites with vegetative recovery</b>
2002	108 <sup>1</sup>	86	8	12
2003	100	81	3	16
2004	93	68	1	24
2005	78	47	2	29
2006	52	31	9	12
2007	34	23	3 (partial sites)	11 <sup>2</sup>
2008	23	16	1 (partial site)	6
2009	24	19	1 (partial site)	5 <sup>2</sup>

**Table 7.** Status and number of nutria herbivory sites surveyed from 2002 to 2009.

<sup>1</sup> Two sites could not be evaluated due to high water.

<sup>2</sup> Total includes 1 site with partial recovery.

PARISH	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Terrebonne	41	12,951	34	12,521	27	7,679	18	4,541	14	7,340
Lafourche	8	1,222	7	610	5	381	2	127	0	0
Jefferson	17	3,003	10	1,805	9	1,718	7	1,383	5	874
Plaquemines	10	882	13	2,540	7	2,494	7	1,850	7	1763
St. Charles	6	768	6	1,266	9	2,564	6	4,690	5	3249
Cameron	0	0	0	0	0	0	0	0	1	233
St. Bernard	6	921	5	918	5	1,035	4	882	4	1,004
St. John	0	0	1	20	2	111	2	240	2	241
Iberia	0	0	0	0	0	0	1	158	0	0
St. Tammany	4	752	2	360	0	0	0	0	0	0
Orleans	2	686	2	962	0	0	0	0	0	0
St. Mary	0	0	0	0	0	0	0	0	0	0
Vermilion	0	0	4	886	5	924	2	389	1	76
Jefferson Davis	0	0	0	0	0	0	0	0	1	88
St. John the Baptist	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	94	21,185 <sup>1</sup>	84	21,888 <sup>1</sup>	69	16,906 <sup>1</sup>	49	14,260 <sup>1</sup>	40	14,868 <sup>1,2</sup>

**Table 8.** Number of nutria damaged sites and acres damaged along transects by parish in coastal Louisiana, 2002 - 2009.

<sup>1</sup>This figure represents acres damaged along transects only. Actual damage coast wide is approximately 3.75 times larger than the area estimated by this survey.

<sup>2</sup>This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

<sup>3</sup>These figures include acres from sites that were partially converted to open water.

PARISH	2007		2008		2009					
	NUMBER OF		NUMBER OF		NUMBER OF					
	SITES	ACRES	SITES	ACRES	SITES	ACRES				
Terrebonne	12	5,915	12	3,768	10	3,162				
Lafourche	2	328	2	338	2	207				
Jefferson	3	177 <sup>3</sup>	2	69	1	29				
Plaquemines	0	0	1	11	1	9				
St. Charles	4	2,216 <sup>3</sup>	5 <sup>3</sup>	2,215 <sup>3</sup>	4	1,895				
Cameron	1	167	0	0	1	120				
St. Bernard	1	225 <sup>3</sup>	0	0	0	0				
St. John	0	0	0	0	0	0				
Iberia	0	0	0	0	0	0				
St. Tammany	0	0	0	0	0	0				
Orleans	0	0	0	0	0	0				
St. Mary	0	0	0	0	0	0				
Vermilion	0	0	0	0	0	0				
Jefferson Davis	1	81	0	0	0	0				
St. John the Baptist	1	135	1	70	0	0				
<b>Total</b>	25	9,244 <sup>1,3</sup>	23	6,471 <sup>1,3</sup>	19	5,422 <sup>1</sup>				

**Table 8 (Continued).** Number of nutria damaged sites and acres damaged along transects by parish in coastal Louisiana, 2002 - 2009.

<sup>1</sup>This figure represents acres damaged along transects only. Actual damage coast wide is approximately 3.75 times larger than the area estimated by this survey.

<sup>2</sup>This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

<sup>3</sup>These figures include acres from sites that were partially converted to open water.

MARSH TYPE	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Fresh	41	11,593	36	10,871	37	10,565	26	9,811	23	11,273
Intermediate	39	7,416	31	8,086	25	5,128	19	3,789	16	3,421
Brackish	14	2,176	17	2,931	7	1,213	4	660	1	174
<b>Total</b>	94	21,185	84	21,888	69	16,906	49	14,260	40	14,868

**Table 9.** Number of nutria damaged sites and acres damaged, by marsh type along transects in coastal Louisiana during 2002 to 2009; number includes sites converted to open water.

<sup>1</sup> Total includes sites that were partially converted to open water.

MARSH TYPE	2007		2008		2009					
	NUMBER OF		NUMBER OF		NUMBER OF					
	SITES	ACRES	SITES	ACRES	SITES	ACRES				
Fresh	21	8,842	21	6,127	17	5,384				
Intermediate	3	298	2	44	2	38				
Brackish	1	104	0	0	0	0				
<b>Total</b>	25 <sup>1</sup>	9,244 <sup>1</sup>	23	6,471 <sup>1</sup>	19	5,422				

**Table 9 (Continued).** Number of nutria damaged sites and acres damaged, by marsh type along transects in coastal Louisiana during 2002 to 2009; number includes sites converted to open water.

<sup>1</sup> Total includes sites that were partially converted to open water.

NUTRIA RELATIVE ABUNDANCE RATING	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
NO NUTRIA SIGN VISIBLE	21	5,990	23	5,972	13	3,569	12	2,992	4	519
NUTRIA SIGN VISIBLE	31	4,379	26	3,562	29	6,040	28	6,748	26	11,223
ABUNDANT FEEDING	17	4,198	19	6,682	19	5,251	4	4,113	1	573
HEAVY FEEDING	17	5,568	14	5,599	7	2,026	1	273	0	0
<b>TOTAL</b>	86	20,135	81	21,815	69	16,886	47	14,126	31	12,315

**Table 10.** Number of nutria damage sites and acres damaged by revised nutria relative abundance rating in coastal Louisiana during 2002 to 2009; numbers do not include sites converted to open water.



NUTRIA RELATIVE ABUNDANCE RATING	2007		2008		2009					
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
NO NUTRIA SIGN VISIBLE	2	73	0	0	0	0				
NUTRIA SIGN VISIBLE	12	3,402	13	2,234	6	517				
ABUNDANT FEEDING	5	1,495	8	3,522	8	1,169				
HEAVY FEEDING	4	3,658	2	415	5	3,736				
<b>TOTAL</b>	23	8,628	23	6,171	19	5,422				

**Table 10 (Continued).** Number of nutria damage sites and acres damaged by revised nutria relative abundance rating in coastal Louisiana during 2002 to 2009; numbers do not include sites converted to open water.

VEGETATIVE DAMAGE RATING	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
NO VEGETATIVE DAMAGE	1	30	0	0	0	0	0	0	0	0
MINOR VEGETATIVE DAMAGE	28	3,498	26	8,732	35	6,675	34	8,070	21	7,621
MODERATE VEGETATIVE DAMAGE	44	13,156	41	9,221	29	9,536	12	5,905	9	4,581
SEVERE VEGETATIVE DAMAGE	13	3,451	14	3,862	4	675	1	151	1	113
CONVERTED TO OPEN WATER	8	1,050	3	73	1	20	2	134	9	2,553
<b>TOTAL</b>	94	21,185	84	21,888	69	16,906	49	14,260	40	14,868

**Table 11.** Number of nutria damage sites and number of acres by the vegetative damage rating in coastal Louisiana 2002 to 2009.

<sup>1</sup> Total includes sites that were partially converted to open water.

VEGETATIVE DAMAGE RATING	2007		2008		2009					
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
NO VEGETATIVE DAMAGE	0	0	0	0	0	0				
MINOR VEGETATIVE DAMAGE	17	4,021	17	5,402	15	5,102				
MODERATE VEGETATIVE DAMAGE	6	4,607	5	640	4	320				
SEVERE VEGETATIVE DAMAGE	0	0	1	129	0	0				
CONVERTED TO OPEN WATER	3 <sup>1</sup>	616 <sup>1</sup>	1 <sup>1</sup>	300	1 <sup>1</sup>	90				
<b>TOTAL</b>	26 <sup>1</sup>	9,244 <sup>1</sup>	24 <sup>1</sup>	6,471 <sup>1</sup>	20	5,512				

**Table 11 (Continued).** Number of nutria damage sites and number of acres by the vegetative damage rating in coastal Louisiana 2002 to 2009.

<sup>1</sup> Total includes sites that were partially converted to open water.

AGE OF DAMAGE AND CONDITON RATING	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Recovered	12	1,119	16	1,674	24	6,049	29	4,169	13 <sup>1</sup>	1,341 <sup>1</sup>
Old Recovering	51	7,694	51	14,382	53	12,338	39	10,878	21	9,429
Old Not Recovering	31	11,449	17	5,375	5	2,898	2	656	4	1,519
Recent Recovering	0	0	0	0	1	35	1	10	0	0
Recent Not Recovering	0	0	0	0	0	0	0	0	1	285
Current Damage	4	992	13	2,058	9	1,615	5	2,582	5	1,082
<b>Total</b>	98	21,254	97	23,489	92	22,935	76	18,295	44 <sup>1</sup>	13,656 <sup>1</sup>

**Table 12.** Number of nutria damage sites by age of damage and condition rating in coastal Louisiana in 2002 to 2009.

<sup>1</sup> Total includes sites that were partially recovered.

AGE OF DAMAGE AND CONDITON RATING	2007		2008		2009					
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Recovered	11 <sup>1</sup>	1,783 <sup>1</sup>	6	736	5 <sup>1</sup>	673 <sup>1</sup>				
Old Recovering	14	5,011	15	3,852	16	5,321				
Old Not Recovering	5	2,874	3	1,914	2	57				
Recent Recovering	0	0	0	0	0	0				
Recent Not Recovering	0	0	0	0	0	0				
Current Damage	4	743	5	405	1	44				
<b>Total</b>	34 <sup>1</sup>	10,411 <sup>1</sup>	29	6,907	23	6,095				

**Table 12 (Continued).** Number of nutria damage sites by age of damage and condition rating in coastal Louisiana in 2002 to 2009.

<sup>1</sup> Total includes sites that were partially recovered.

PREDICTION OF RECOVERY BY END OF GROWING SEASON	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Full Recovery	7	919	8	4,238	10	338	6	443	4	828
Partial Recovery	59	13,950	64	14,497	50	13,440	36	10,073	27	11,487
Increased Damage	5	1,086	6	1,646	6	2,811	5	3,610	0	0
No Recovery Predicated	15	4,180	3	1,434	2	297	0	0	0	0
<b>TOTAL</b>	94	21,185	84	21,888	69	16,906	49	14,260	31	12,315

**Table 13.** Number of nutria damage sites and acres damaged, by prediction of recovery rating in coastal Louisiana in 2002 to 2009.

PREDICTION OF RECOVERY BY END OF GROWING SEASON	2007		2008		2009					
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Full Recovery	2	350	1	80	2	1,588				
Partial Recovery	21	8,278	22	6,091	16	3,543				
Increased Damage	0	0	0	0	1	291				
No Recovery Predicated	0	0	0	0	0	0				
<b>TOTAL</b>	23	8,628	23	6,171	19	5,422				

**Table 13 (Continued).** Number of nutria damage sites and acres damaged, by prediction of recovery rating in coastal Louisiana in 2002 to 2009.

**APPENDIX B.**  
**2008 Nutria Vegetative Damage Sites**

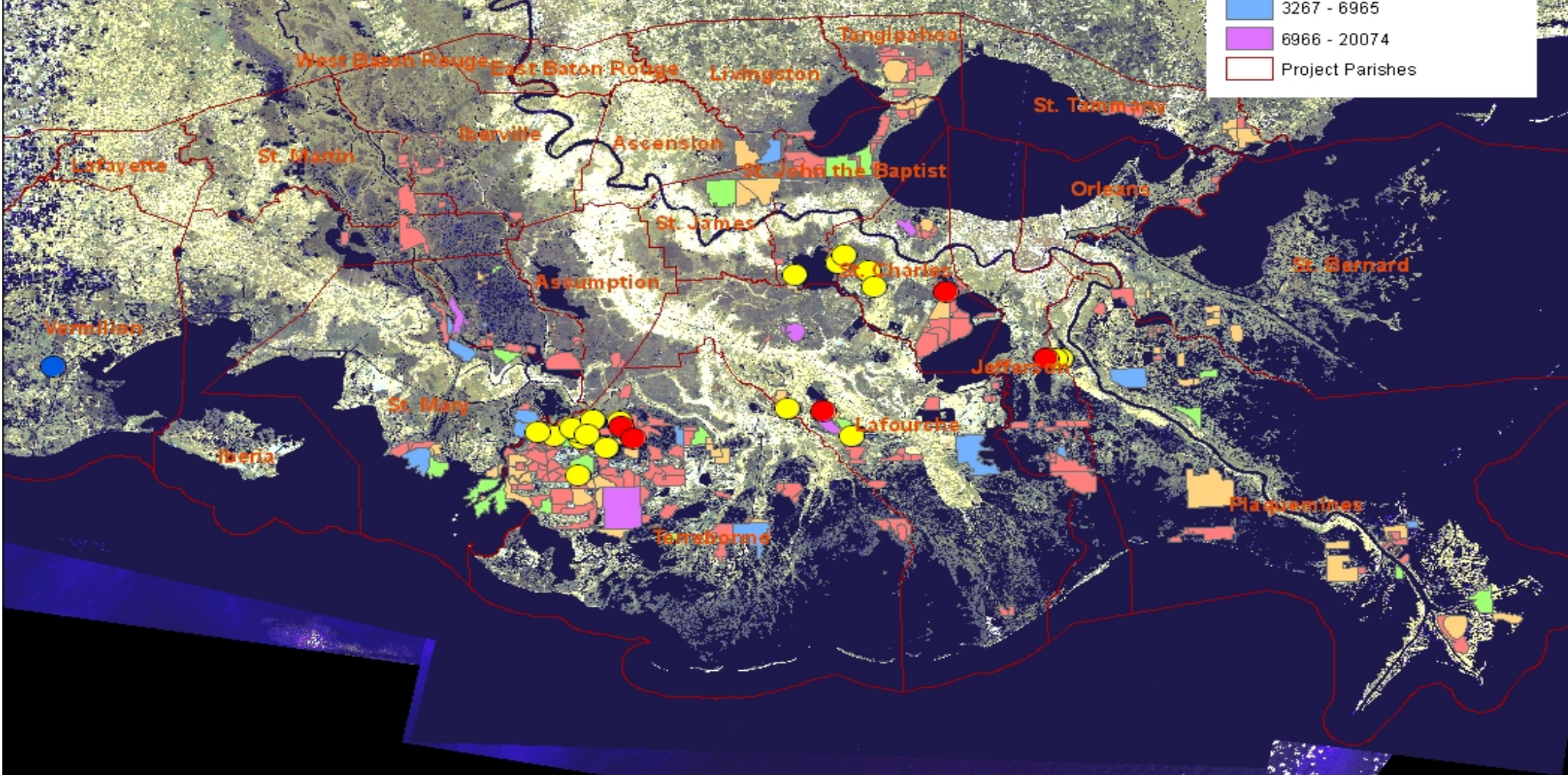
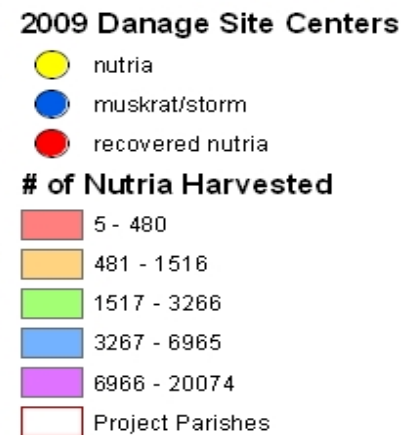


SITE	MARSH TYPE	LATITUDE	LONGITUDE	DAMAGE TYPE	DAMAGED ACRES	ACRES TO OPEN WATER	NRAR	VDR	AGE OF DAMAGE	PREDICTION	PARISH
8	F	29.574	-91.17139	Nutria	504	0	2	2	2	2	Terrebonne
9	F	29.5813	-91.12733	Nutria	495	0	1	1	1	2	Terrebonne
17	F	29.5385	-91.04686	Nutria	286	0	3	1	1	2	Terrebonne
60	I	29.7173	-90.04149	Nutria	11	0	1	2	1	2	Plaquemines
60B	I	29.716	-90.05147	Nutria	33	0	1	2	1	2	Jefferson
92	F	29.7178	-90.07776	Nutria	36	0	1	1	1	2	Jefferson
94	F	29.8696	-90.2885	Nutria	129	300	3	3	2	2	St. Charles
120	F	29.5907	-91.06539	Nutria	1018	0	2	1	1	2	Terrebonne
171	F	29.9114	-90.47039	Nutria	1281	0	2	1	2	2	St. Charles
238	F	29.9272	-90.52978	Hog/Nutria	148	0	1	1	1	2	St. Charles
274	F	29.5649	-91.08909	Nutria	252	0	1	1	1	2	Terrebonne
311	F	29.5514	-90.97915	Nutria	464	0	1	1	1	2	Terrebonne
344	F	29.5283	-91.02	Nutria	212	0	0	0	0	99	Terrebonne
345	F	29.614	-90.57279	Nutria	80	0	1	1	1	1	Lafourche
349	B	29.504	-91.79	Muskrat/Storm	519	279	0	0	0	99	Iberia
390	F	29.8824	-90.44819	Nutria	144	0	1	1	1	2	St. Charles
392	I	29.7121	-90.075	Muskrat/Nutria	154	0	0	0	0	99	Jefferson
400	F	29.5755	-91.11566	Nutria	390	0	2	1	1	2	Terrebonne
402	F	29.9472	-90.6395	Nutria	135	0	0	0	0	99	St. John The Baptist
408	I	29.895	-93.216	Storm	2228	0	0	2	1	2	Cameron
410	I	29.8315	-93.1977	Storm	676	0	0	2	1	2	Cameron
414	F	29.5978	-90.9507	Nutria	96	0	0	0	0	99	Terrebonne
416	F	29.9967	-92.9448	Nutria	167	0	0	0	0	99	Cameron
417	F	30.0709	-92.9795	Nutria	81	0	0	0	0	99	Jeff Davis
418	F	29.5865	-91.01636	Nutria	54	0	2	1	1	2	Terrebonne
419	F	29.6009	-91.01346	Nutria	183	0	2	1	1	2	Terrebonne
420	F	29.6223	-90.64151	Nutria	258	0	1	1	1	2	Lafourche
421	F	29.5574	-90.5127	Nutria	45	0	0	0	0	99	Lafourche
422	I	29.7318	-92.27	Muskrat	152	0	0	3	5	2	Vermillion
423	F	29.5773	-91.19447	Nutria	35	0	1	1	5	2	Terrebonne
424	F	29.485	-91.10953	Nutria	65	0	1	1	5	2	Terrebonne
425	F	29.5588	-91.1008	Nutria	22	0	2	2	5	2	Terrebonne
426	F	29.948	-90.51209	Nutria	213	0	1	1	5	2	St. Charles
427	F	29.9174	-90.62198	Nutria	70	0	2	2	5	2	St. John The Baptist

**Table 14.** 2008 Nutria vegetative damage sites with tails harvested.

\* The number of nutria tails harvested by site is an average due to multiple trappers and overlapping areas.

**2008-2009  
Coastwide Nutria Control Program  
Total Tail: 334,038**



**APPENDIX C.**  
**Data collected at each damage site during the 2009**  
**vegetative damage survey.**



SITE	MARSH TYPE	LATITUDE	LONGITUDE	DAMAGE TYPE	DAMAGE D ACRES	ACRES TO OPEN WATER	NRAR	VDR	AGE OF DAMAGE	PREDICTION	PARISH
8	F	29.574	-91.17139	Nutria	291	0	3	1	1	2	Terrebonne
9	F	29.5813	-91.12733	Nutria	254	0	1	2	1	2	Terrebonne
17	F	29.5385	-91.04686	Nutria	261	0	2	1	1	2	Terrebonne
60	I	29.7173	-90.04149	Nutria	9	0	1	2	1	2	Jefferson
60B	I	29.716	-90.05147	Nutria	29	0	3	2	2	2	Jefferson
92	F	29.7178	-90.07776	Nutria	36	0	0	0	0	99	Jefferson
94	F	29.8696	-90.2885	Nutria	39	90	0	0	0	99	St. Charles
120	F	29.5907	-91.06539	Nutria	1,457	0	3	1	1	2	Terrebonne
171	F	29.9114	-90.47039	Nutria	1,484	0	3	1	1	3	St. Charles
238	F	29.9272	-90.52978	Hog/Nutria	213	0	2	1	1	2	St. Charles
274	F	29.5649	-91.08909	Nutria	198	0	2	1	1	2	Terrebonne
311	F	29.5514	-90.97915	Nutria	464	0	0	0	0	99	Terrebonne
345	F	29.614	-90.57279	Nutria	80	0	0	0	0	99	Terrebonne
390	F	29.8824	-90.44819	Nutria	104	0	1	1	1	1	St. Charles
400	F	29.5755	-91.11566	Nutria	475	0	3	1	1	2	Terrebonne
418	F	29.5865	-91.01636	Nutria	54	0	0	0	0	99	Terrebonne
419	F	29.6009	-91.01346	Nutria	168	0	2	1	1	2	Terrebonne
420	F	29.6223	-90.64151	Nutria	163	0	2	1	1	1	Lafourche
422	I	29.7318	-92.27	Muskrat/ Storm	152	0	0	0	0	2	Vermillion
423	F	29.5773	-91.19447	Nutria	16	0	1	1	1	2	Terrebonne
424	F	29.485	-91.10953	Nutria	14	0	1	1	1	2	Terrebonne
425	F	29.5588	-91.1008	Nutria	28	0	2	2	2	2	Terrebonne
426	F	29.948	-90.51209	Nutria	94	0	2	1	1	2	St. Charles
427	F	29.9174	-90.62198	Nutria	120	0	1	1	1	2	St. John the Baptist
428	f	29.55822	-90.50727	Nutria	44	0	2	1	5	2	Lafourche

**Table 15.** 2009 Nutria Vegetative Damage Sites.

## Data Sheet utilized for 2009 nutria herbivory survey.

### 2009 NUTRIA VEGETATIVE DAMAGE SURVEY

DATE: \_\_\_\_\_

TRANSECT#: \_\_\_\_\_

PHOTOGRAPHY

MARSH TYPE: \_\_\_\_\_

FRAME # \_\_\_\_\_

LAT: \_\_\_\_\_

LAT: \_\_\_\_\_

LON: \_\_\_\_\_

LON: \_\_\_\_\_

#### LOCATION DESCRIPTION

ON TRANSECT \_\_\_\_\_

EAST OF TRANSECT \_\_\_\_\_

WEST OF TRANSECT \_\_\_\_\_

SITE# \_\_\_\_\_

#### DAMAGE TYPE

\_\_\_\_\_ DAMAGE NOT RELATED TO NUTRIA FEEDING

\_\_\_\_\_ DAMAGE - STORM RELATED

\_\_\_\_\_ DAMAGE - MUSKRAT

\_\_\_\_\_ DAMAGE - NUTRIA

\_\_\_\_\_ DAMAGE - OTHER \_\_\_\_\_

\_\_\_\_\_ DAMAGED AREA SUBJECT TO TIDAL ACTION: \_\_\_\_ YES \_\_\_\_ NO

\_\_\_\_\_ ESTIMATED SIZE OF AREA (ACRES)

#### NUTRIA RELATIVE ABUNDANCE RATING

\_\_\_\_\_ NO NUTRIA SIGN VISIBLE (0)

\_\_\_\_\_ NUTRIA SIGN VISIBLE (1)

\_\_\_\_\_ ABUNDANT FEEDING (2)

\_\_\_\_\_ HEAVY FEEDING (3)

#### VEGETATIVE DAMAGE RATING

\_\_\_\_\_ NO VEGETATIVE DAMAGE (0)

\_\_\_\_\_ MINOR VEGETATIVE DAMAGE (1)

\_\_\_\_\_ MODERATE VEGETATIVE DAMAGE (2)

\_\_\_\_\_ SEVERE VEGETATIVE DAMAGE (3)

\_\_\_\_\_ CONVERTED TO OPEN WATER (4)

#### NUTRIA VISIBLE IN AREA

\_\_\_\_\_ WERE NUTRIA SIGHTED: \_\_\_\_ YES \_\_\_\_ NO

\_\_\_\_\_ IF YES, HOW MANY? \_\_\_\_\_

#### PLANT SPECIES IMPACTED

#### PLANT SPECIES RECOVERING

#### PLANT SPECIES ADJACENT

#### AGE OF DAMAGE AND CONDITION

\_\_\_\_\_ RECOVERED (0)

\_\_\_\_\_ OLD RECOVERING (1)

\_\_\_\_\_ OLD NOT RECOVERING (2)

\_\_\_\_\_ RECENT RECOVERING (3)

\_\_\_\_\_ RECENT NOT RECOVERING (4)

\_\_\_\_\_ CURRENT (OCCURRING NOW) (5)

#### PREDICTION OF RECOVERY BY END OF 2009 GROWING SEASON

\_\_\_\_\_ NO RECOVERY PREDICTED (0)

\_\_\_\_\_ FULL RECOVERY (1)

\_\_\_\_\_ PARTIAL RECOVERY (2)

\_\_\_\_\_ INCREASED DAMAGE (3)

\_\_\_\_\_ CHECK NEXT YEAR

## **CODES FOR NUTRIA HERBIVORY SURVEY DATA**

### **<sup>1</sup>Marsh Type**

Fresh	F
Intermediate	I
Brackish	B

### **<sup>2</sup>Nutria Relative Abundance Rating**

No Nutria Sign Visible	0
Nutria Sign Visible	1
Abundant Feeding Sign	2
Heavy Feeding	3

### **<sup>3</sup>Vegetative Damage Rating**

No Vegetative Damage	0
Minor Vegetative Damage	1
Moderate Vegetative Damage	2
Severe Vegetative Damage	3
Converted To Open Water	4

### **<sup>4</sup>Age of Damage and Condition**

Recovered	0
Old Recovering	1
Old Not Recovering	2
Recent Recovering	3
Recent Not Recovering	4
Current (Occurring Now)	5

### **<sup>5</sup>Prediction of Recovery by End of 2009 Growing Season**

No Recovery Predicted	0
Full Recovery	1
Partial Recovery	2
Increased Damage	3

99 – Entry does not apply to this site.