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MONTHLY VARIATION IN NUTRIA PELT QUALITY

BY

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The value of individual nutria (*Myocastor coypus*) pelts is in direct proportion to pelt quality and size. Various factors affect pelt quality such as fur primeness, fur color, and holes in the skin. Pelt quality in nutria is thought to vary during different periods of the year; however, this has not been confirmed.

Observations by O'Neil (1949) show that the Louisiana muskrat reaches the height of its prime from mid-January to mid-February. Shanks and Arthur (1952) found that the value of muskrat pelts in Missouri increased by 202 percent from September to December, because of increased pelt quality. The harvest of nutria has been scheduled to conform with the trapping season for muskrat (*Ondatra zibethica*). In general, the harvest in Louisiana has been permitted during a 3-month period from December through February. If additional time was required the trapping season was extended into March.

Because of the increasing importance of nutria to the fur industry in Louisiana and of the importance of pelt quality to pelt value, a study was begun on Rockefeller Wildlife Refuge in 1961 to determine the monthly variation in nutria pelt quality. An additional purpose of the study was to compare the various factors affecting pelt quality (such as primeness, damage, and color) and to determine the months which would produce the greatest revenue from a given number of nutria.

After the nutria was introduced into Louisiana in 1938, its population increased and by 1945 the animal had invaded practically all Louisiana coastal marsh areas (Dozier 1951). Nutria were trapped extensively for fur and by the 1961-62 season provided a fairly stable industry with the value of pelts taken totaling over \$1 million annually (Louisiana Wild Life and Fisheries Commission, 1964). In Louisiana the harvest of nutria ranked second only to muskrat (*Ondatra zibethica*).

Nutria also spread into agricultural areas adjacent to the marshes and numerous complaints of damage were voiced by sugar cane and rice farmers

(Ensminger, 1956). As a result the Louisiana Legislature declared the nutria an outlaw animal in 1958, permitting the killing of nutria at any time and by any means.

This law was later repealed and the nutria placed on the fur-bearer list with harvest regulations established by the Louisiana Wild Life and Fisheries Commission. During the 1961-62 trapping season the take of nutria surpassed that of muskrat (Louisiana Wild Life and Fisheries Commission, 1964). Trapping was permitted from November 15 until March 1. Regulations in later years provided for a 3-month trapping season beginning on December 1 and terminating on February 28.

METHODS

The study extended over 24 months beginning in January 1961, and terminating in December, 1962. Ten nutria were collected each month, skinned and the pelts placed in cold storage. This procedure was followed for one year, then all pelts were stretched and dried. A code system was devised whereby individual pelts could be recognized only by an attached number. The color and number of holes were recorded for each pelt. The pelts were then submitted to two local fur buyers for grading. The buyers graded the pelts only on the basis of primeness, and each pelt was classified as prime or flat (not prime).

The same procedure was followed for the second year with 10 nutria pelts collected each month. All animals were collected from the same area, since differences in pelt quality exist with nutria taken from different areas.

Nutria pelts vary with size and quality, and normally in grading nutria pelts 3 grades are used. The groups have different names depending on the buyer, but in general they are listed as Tops, Seconds and Thirds. The following is a description of the grades used for nutria pelts at the time of this study:

Tops

- A. Length - 26 inches or over.
- B. Prime fur.
- C. Not damaged.
- D. Heavy skin.

Seconds

- A. Length 23 to 26 inches having B, C and D in Tops.
- B. Length 26 inches or over but lacking B, C or D in Tops.

Thirds

- A. Length 20 to 23 inches and having B, C and D of Tops.
- B. Length 23 to 26 inches but lacking B, C or D in Tops.
- C. Length 26 inches or over with damage exceeding 4 holes.

Only the belly of the nutria pelt was of value and only that side graded. The length was measured from the mouth to the shortest portion of the posterior edge of the skin. Primeness was determined by density and length of the guard hairs and fur fiber. Damage was regarded simply as the number of holes in the pelt.

For the purpose of this study we disregarded the length of pelts so as not to enter this factor as a variable. Nutria reproduce throughout the year and it is possible to find all sizes during any given month (Atwood, 1950; Harris, 1956). During the study only large animals were pelted.

The data were tested using Chi Square as described by Cochran and Cox (1957). Differences in pelt primeness and pelt damage were tested between both months and years; also orthogonal comparisons were made between certain months.

RESULTS AND DISCUSSION

Pelt Primeness.

On the basis of pelt primeness (Table 1) the winter months (December, January and February) produced the largest numbers of top pelts. Statistical analysis of the data showed the difference between months to be highly significant ($X^2 = 61.59$ c 11d. f.). Of the 240 pelts taken during the study (10 each month) only 63 had prime fur. Of these, 59 percent were taken during December, January and February. Of all pelts taken during these months, 62 percent were prime, but during the remaining 9 months only 14 percent were prime.

Statistical analysis of the data showed no significant difference in pelt primeness between years. However, observations on nutria pelts over a number of years in other areas suggest that annual variation does exist under certain conditions. The development of a winter coat is a condition long recognized in fur-bearing animals (Hamilton and Cook, 1946), but other factors apparently operate to reduce this condition.

TABLE I

PELT PRIMENESS OF NUTRIA COLLECTED MONTHLY
FROM JANUARY, 1961 THROUGH DECEMBER, 1962

MONTH	1961			1962			Total		
	No. Pelts	No. Prime	No. Flat	No. Pelts	No. Prime	No. Flat	No. Pelts	No. Prime	No. Flat
JAN.	10	3	7	10	8	2	20	11	9
FEB.	10	8	2	10	6	4	20	14	6
MARCH	10	3	7	10	3	7	20	6	14
APRIL	10	2	8	10	2	8	20	4	16
MAY	10	1	9	10	3	7	20	4	16
JUNE	10	2	8	10	1	9	20	3	17
JULY	10	0	10	10	1	9	20	1	19
AUG.	10	0	10	10	0	10	20	0	20
SEPT.	10	1	9	10	0	10	20	1	19
OCT.	10	0	10	10	2	8	20	2	18
NOV.	10	2	8	10	3	7	20	5	15
DEC.	10	7	3	10	5	5	20	12	8

Water depth in a marsh has been suggested as a factor affecting nutria pelt primeness. Since the ventral portion of the animal is the part considered in grading, excessive travel over dry ground may cause enough wear on the fur to significantly reduce the length of guard hairs and the fur fiber.

We were unable to test the relationship of pelt primeness to water depth during this study; however, the nutria were collected in a de-watered marsh at the refuge headquarters. Although a network of canals was present in the area, nutria traveled over dry ground much of the time and possibly reduced pelt primeness.

Pelt Damage.

Slight differences were noted in pelt damage for the various months, but no pattern could be discerned and monthly differences were non-significant. The least number of damaged pelts was in May, June and December (Table 2). Most damage was found in April and November. Similarly, May and June had the least number of holes per damaged pelt, while July, August and September had the greatest number.

From these data it can be concluded that the amount of damage in nutria pelts may be high or low, regardless of the month taken.

Fur Color.

Nutria fur varies in color from dark brown to yellowish-brown. The value of individual pelts varies with color of the fur with the dark pelts having the greatest value. During this study a small number of light-colored pelts was found each month, but this varied considerably and no relationship was found between pelt color and month of capture.

Pelt Value.

Nutria pelts examined during this study were of greatest value during December, January and February (Table 3). From October to December the mean value of pelts increased 74 percent and from November to December, 42 percent. Pelt values remained high through February, then declined. The rate of decline after February was similar to the rate of increase before December. From February through March pelt values decreased 46 percent and from February through May they decreased 65 percent.

CONCLUSIONS

Since the value of nutria pelts varies with pelt quality, and pelt quality with the time of year, trappers and landowners, whose primary interests are fur production, profit by a harvest scheduled at such times when the greatest percentage of animals produce top quality pelts.

A marsh will produce only a certain number of nutria, and generally the harvest is one nutria per acre or less. With systematic trapping, harvesting can be completed within a three-month period each year.

This study clearly shows that on a basis of fur quality the greatest economic return can be gained per unit of effort by beginning nutria trapping in early December and continuing through February. However, should a season longer than 90 days be needed or desired, then trapping could be extended into March.

During the trapping season the largest catches are made at the beginning of the season. Trapping success then drops at a fairly progressive rate throughout the season. Therefore, beginning the trapping season earlier than December would result in the harvest of a large number of low quality pelts. But, by waiting until December, pelt values will be at their peak.

TABLE 2
 PELT DAMAGE OF NUTRIA COLLECTED MONTHLY FROM
 JANUARY, 1961 THROUGH DECEMBER, 1962

MONTH	1961		1962		Total	
	No. Pelts	No. Damaged	No. Pelts	No. Damaged	No. Pelts	No. Damaged
JAN.	10	3	10	3	20	6
FEB.	10	2	10	3	20	5
MARCH	10	4	10	2	20	6
APRIL	10	4	10	4	20	8
MAY	10	1	10	2	20	3
JUNE	10	0	10	2	20	2
JULY	10	2	10	4	20	6
AUG.	10	3	10	3	20	6
SEPT.	10	2	10	2	20	4
OCT.	10	5	10	2	20	7
NOV.	10	7	10	4	20	11
DEC.	10	2	10	1	20	3

TABLE 3
MONTHLY VALUE OF NUTRIA PELTS* BASED ON PELT
PRIMENESS, ROCKEFELLER REFUGE, 1961 AND 1962

MONTH	Tops			Seconds		Total Value	Mean Pelt Value
	Total No. Pelts	No. Pelts	Value at \$2.75 Each	No. Pelts	Value at \$1.00 Each		
JAN.	20	11	\$30.25	9	\$9.00	\$39.25	\$1.96
FEB.	20	14	\$38.50	6	\$6.00	\$44.50	\$2.23
MARCH	20	6	\$16.50	14	\$14.00	\$30.50	\$1.53
APRIL	20	4	\$11.00	16	\$16.00	\$27.00	\$1.35
MAY	20	4	\$11.00	16	\$16.00	\$27.00	\$1.35
JUNE	20	3	\$8.25	17	\$17.00	\$25.25	\$1.26
JULY	20	1	\$2.75	19	\$19.00	\$21.75	\$1.09
AUG.	20	0	\$0.00	20	\$20.00	\$20.00	\$1.00
SEPT.	20	1	\$2.75	19	\$19.00	\$21.75	\$1.09
OCT.	20	2	\$5.50	18	\$18.00	\$23.50	\$1.18
NOV.	20	5	\$13.75	15	\$15.00	\$28.75	\$1.44
DEC.	20	12	\$33.00	8	\$8.00	\$41.00	\$2.05

*Assuming all pelts 26 inches long and not damaged. Prices used are based on the prices at Grand Chenier, Louisiana, during the Winter 1962-63.

SUMMARY

The study was begun in February, 1961, with the primary objective to determine the monthly variation in nutria pelt quality.

Pelt primeness was the only factor noted during the study that was affected by the month of capture. Pelt damage and color showed no differences between months.

December, January and February produced the highest percentage of top quality pelts. From November to December pelt value increased 42 percent. From February through March pelt values decreased 46 percent.

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A TELEMETRIC STUDY OF NESTING FEMALE ALLIGATORS ON ROCKEFELLER REFUGE, LOUISIANA

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INTRODUCTION

This paper describes movements and activities of adult female alligators (*Alligator mississippiensis*) and attempts to evaluate this data in order to formulate management practices for the species.

Due to excessive hunting pressure, Louisiana's alligator population has been declining since the mid 1930's. This decline in the population was primarily brought about as a result of the systematic exploration of the natural resources in the coastal marshes of the state. Canals were dug into the remote areas of the marshes in the development of various oil and gas leases. In a relatively short period of time this development was expanded to include a network of canals along the entire Louisiana coast. This network of waterways provided hunters and trappers convenient access into the more remote marshes for the purpose of hunting alligators and trapping fur-bearing animals. During periods of drought, alligators would come to these canals and would be killed by the untold thousands (McIlhenny, 1935).