

A RESOURCE ANALYSIS OF FUR-BEARING ANIMALS IN TEXAS

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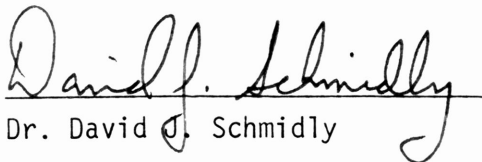
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Approved by:


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ABSTRACT

The last decade has witnessed a 665% increase in licenses sold to fur trappers in Texas. In 1976-77, the Texas Parks and Wildlife Department initiated a program of sending questionnaires to a randomly selected sample of these trappers after each trapping season. This program continued for 5 years through the 1980-81 trapping season. Data from these surveys have been computer-coded and statistically evaluated to yield estimates of furbearer harvests and number of trappers harvesting. Results show a general increase in the number of trappers from 1976-77 to 1979-80, whereas in 1980-81 the number of trappers declined considerably. These same trends were evident with respect to fur prices. Raccoons provide the single most important economic contribution to the Texas fur industry followed by coyotes and bobcats. Trends in harvest levels may be indicative of the influence of trapping pressure and fur prices on furbearers. Possible management implications of these data are discussed.

DEDICATION

To my parents,
Mr. and Mrs. Robert Q. Cohen

ACKNOWLEDGMENTS

The author wishes to express sincere appreciation to Dr. David J. Schmidly for his encouragement, patience, and challenging attitude and for his help in conducting this study and in the preparation of this manuscript. The author also wishes to express appreciation to Glenn Norton for his tutelage in conducting tabulations and for aid in graphic preparation.

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A RESOURCE ANALYSIS OF FUR-BEARING MAMMALS IN TEXAS

Doubtless the most important of man's activities which affect fur animals is the direct one of trapping (Grinnell, et al., 1937). Unfortunately, little information is available in Texas to assess the effect trapping has on furbearer populations. Frye and Lay (undated) tabulated the number of licensed trappers and fur buyers from 1925 to 1941, the amount of furs shipped by fur dealers in 1941-42, and the average price paid for furs from 1936 to 1942. After that, Texas Parks and Wildlife Department (TPW) kept a sporadic account of fur harvests until 1976, when it initiated a trapper survey. Since then, five unpublished reports have shown the total number of species harvested, total number of trappers, and total value of each species in Texas.

The information accumulated in the aforementioned survey indicate that the amount of money earned per trapper, and in the industry as a whole, has increased significantly over the past four decades. For example, in 1941 more than 17,000 persons worked traplines in Texas and earned an average of \$38 for their efforts; by 1978 approximately 38,617 persons bought licenses to sell furs and each received an average income of \$680 (Boone, 1981). Both of these incomes, in their respective time frames, were a significant source of supplementary cash to trappers.

During the 1970's the estimated annual income from the harvest of fur-bearing mammals increased from about \$1,200,000 in 1972-73 to about

The citations herein follow the style of The Journal of Mammalogy.

\$26,200,000 in 1978-79 (estimates from Texas Parks and Wildlife Department). The increase in prices paid for raw furs during this decade produced a 665% increase in licenses sold to trappers (Read, 1979) as well as a dramatic increase in the annual harvest of furbearers.

The mushrooming of licenses purchased by trappers has produced more concern over the possible adverse effects of increased harvest pressure on the fur-bearing species in the state. In response to this concern, TPW initiated a survey of licensed trappers in the state to assess the man-days spent trapping, harvest techniques, numbers of each species harvested, and the geographic distribution of harvest rates. The survey was distributed to a random sample of 10% of the licensed trappers in each county for a five year period beginning with the 1976-77 trapping season and ending with the 1980-81 season.

The survey instruments returned by the trapper are on file at the TPW offices in Austin, Texas. There has been no comprehensive attempt to assess the furbearer community and industry since Frye and Lays (undated) report in the 1940's. Therefore, these instruments provide invaluable information about the present day furbearer community.

Dr. David J. Schmidly obtained permission to analyze the surveys and under this agreement, Jody Read computer coded and tabulated the 1976-77 and 1977-78 trapper data. In 1978-79, Glenn Norton assisted Jody Read with the survey tabulation. In the spring of 1981, I assisted Glenn Norton with the computer work for the 1979-80 trapping season. I began my Undergraduate Fellows Research Project in the Fall of 1981, and as part of my research I tabulated and computer coded the 1980-81 season's data.

OBJECTIVES

Evaluation of the data obtained from the trapper surveys focused on answering the 4 following questions:

- (1) What are the most important species to the fur trapping industry in terms of numbers harvested and economic productivity?
- (2) How has the number of licensed trappers and the value of raw furs fluctuated over the study period?
- (3) What patterns are evident in harvest levels with respect to the different vegetative regions of the state?
- (4) What are the patterns in harvest levels for each species (i.e., do they increase, decrease, or remain stable)?

METHODS

The TPW survey questionnaire is shown in Fig. 1. It assesses two major categories of information. The first concerns information about the trapper, including such questions as (1) whether or not the trapper actually trapped; (2) the county in which he/she actually trapped; and (3) methods used to take furbearers. The second major category pertained to the species trapped. Fifteen species were listed on the survey with a blank "other" category. Trappers were asked to fill in the number of individuals of each species taken.

The information for the five trapping seasons was coded and entered into the Amdahl computer at Texas A&M University using the Wylbur system. The following tabulations were made for each of the counties in Texas as well as for Gould's (1975) 10 major ecological

Figure 1. Sample of the questionnaire used by Texas Parks and Wildlife Department to survey fur trappers in Texas from 1976-77 to 1980-81.

FUR TRAPPER SURVEY · TEXAS PARKS AND WILDLIFE DEPARTMENT

INSTRUCTIONS: This survey card should reflect the activity of only the person to whom it is addressed. Please complete and return immediately, even if you did not trap or hunt furbearers this past season or were not successful.

1. Did you trap or hunt fur-bearing animals during the Past Fur Season? YES NO
2. In which County(s) did you trap or hunt fur-bearing animals? _____
3. How many days did you actively trap or hunt fur-bearing animals? _____ days
4. What method(s) did you use to take fur-bearing animals?
 Steel Trap Live Trap Hunt with Gun Dead on Road Other (Specify) _____
5. What method did you use to take most of your fur-bearing animals?
 Steel Trap Live Trap Hunt with Gun Dead on Road Other (Specify) _____
6. Approximately how many steel traps did you use to take fur-bearing animals during the past fur season? _____
7. Indicate the approximate number of each of the following fur-bearing animals you harvested during the past fur season:
 Raccoon _____ Red Fox _____ Coyote _____ Skunk _____ Mink _____
 Ringtail _____ Gray Fox _____ Badger _____ Nutria _____ Otter _____
 Opossum _____ Bobcat _____ Civet Cat _____ Muskrat _____ Beaver _____
 Other: _____

regions (Fig. 2) using programs written for the Statistical Analysis System (SAS):

NLTR = number of licensed trappers

NTRQ = number of trappers receiving questionnaires

NTRR = number of trappers responding to questionnaires

NRNT = number of respondents that did not trap

NRDT = number of respondents that did trap

TRI = number of trappers harvesting a given species

TNSH = number of individuals of a given species harvested

NTDT = number of trappers harvesting furbearers

AVNPTR = (average harvest of a given species per trapper harvesting that species) = $TNSH/TRI$

PERTRH = (percentage of trappers harvesting a given species) = $TRI/NTDT$

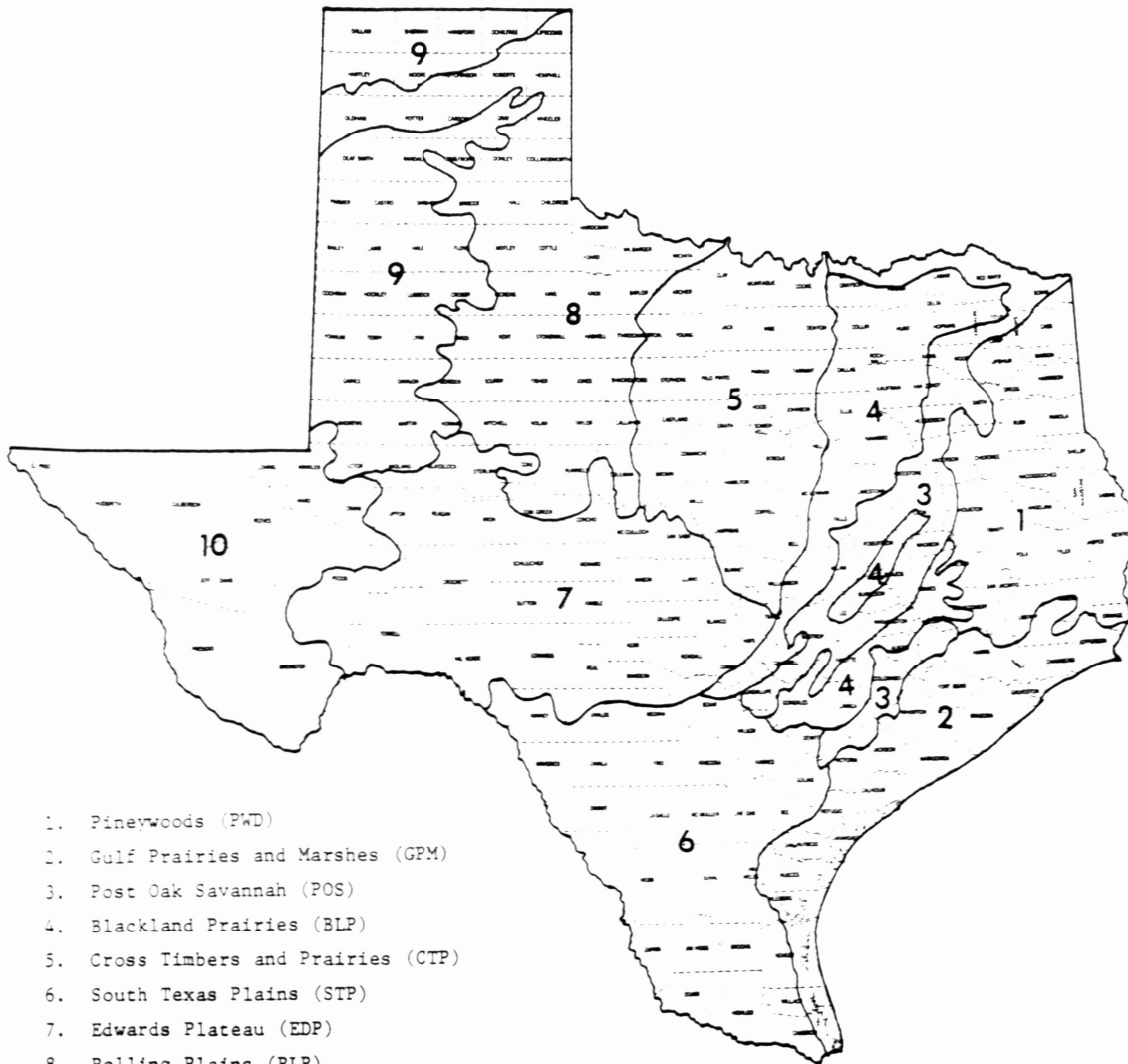
A series of additional calculations were made so that the sample of trappers responding to the questionnaire could be extrapolated to give the total population of trappers (including non-respondents). A correction factor (CR) was calculated to account for the number of people who purchased a license but did not trap:

$$CR = 1 - NRNT/NTRR$$

Using this correction factor, an estimate of the total number of active trappers (NTAT) was made using the following equation:

$$NTAT = NLTR \times CR$$

Figure 2. A map of Gould's ten ecological regions in Texas.



1. Pineywoods (PWD)
2. Gulf Prairies and Marshes (GPM)
3. Post Oak Savannah (POS)
4. Blackland Prairies (BLP)
5. Cross Timbers and Prairies (CTP)
6. South Texas Plains (STP)
7. Edwards Plateau (EDP)
8. Rolling Plains (RLP)
9. High Plains (HGP)
10. Trans-Pecos, Mountains and Basins (TMB)

Next, the projected number of trappers taking a species (ENUMTR) was calculated as follows:

$$\text{ENUMTR} = \text{NTAT} \times \text{PERTRH}$$

Finally, the estimated take for a given species by all trappers (ETAKE) was calculated as follows:

$$\text{ETAKE} = \text{ENUMTR} \times \text{AVNPTR}$$

(Schmidley, et al., 1980).

Survey data evaluation focused on the ETAKE (harvest level) and ENUMTR (trapping pressure). These estimates were converted to number of individuals and number of trappers per 100 or 1000 square miles and graphically displayed by year for each of Gould's 10 ecological regions. These graphs were used to evaluate regional harvest importance of a species and trends in harvest numbers and trappers. Statewide harvest importance was determined by adding all of a species harvests for each of the five years to obtain a total harvest. Using this data, an average rank of importance, ranging from 1 to 15 was assigned to each of the species.

Economic productivity was computed by multiplying the estimated take of a species and the species average fur value for a particular year. This was determined for each ecological region by year. Statewide and regional economic importance of a species was determined by adding all of the values for each of the five years to obtain an overall dollar value. From this data an average rank of economic importance, ranging from 1 to 15, was assigned to each of the species.

RESULTS

Species Fur Value

Trappers harvested 15 species of furbearers for the value of their pelts from 1976-77 to 1980-81. Data on species fur values were collected by the Texas Parks and Wildlife Department, and these are presented in Fig. 3.

Bobcats possess the single most valuable pelt, ranging from a state average of \$55 in 1977-78 to \$85 in 1980-81. Red fox and otter pelts were also very valuable ranging from \$17 in 1980-81 to \$45 in 1978-79, and 1979-80, and \$28 in 1977-78 and 1980-81 to \$40 in 1976-77, 1978-79, and 1979-80, respectively. Other valuable furbearers were the gray fox, coyote, and raccoon. A majority of the furbearers show a general increase in fur prices for the first two or three years followed by a subsequent decline. This trend is most evident in the more important species such as raccoons, opossums, ringtail cats, red foxes, gray foxes, bobcats, coyotes, and striped skunks.

One major dealer, from 1936 to 1942, reported that 13 species were actively bought for the value of their fur. The single most valuable pelt was that of the beaver (\$8.11) followed by the mink (\$5.62) and coyote (\$1.99). Other valuable pelts included the ringtail cat (\$1.77), raccoon (\$1.59), badger (\$1.30), gray fox (\$.90), wild cat (\$.85), striped skunk (\$.59), and muskrat (\$.54). The spotted skunk, opossum, and rabbit were all worth less than \$.30 each (Frye and Lay, undated).

Figure 3. Species fur value from 1976-77 to 1980-81.



This increase in fur values from 1936 to 1981 has made the fur industry one of the most important economic resources in Texas.

Licensed Trappers

A "trapper", as defined by Texas Parks and Wildlife Laws, is a person who takes a fur-bearing animal or the pelt of a fur-bearing animal. These wildlife laws require that a trapper possess a trapping license before he can harvest a fur-bearing animal or a pelt. License fees were \$5 for residents and \$200 for non-residents from 1976-77 to 1980-81 (Anonymous, 1979).

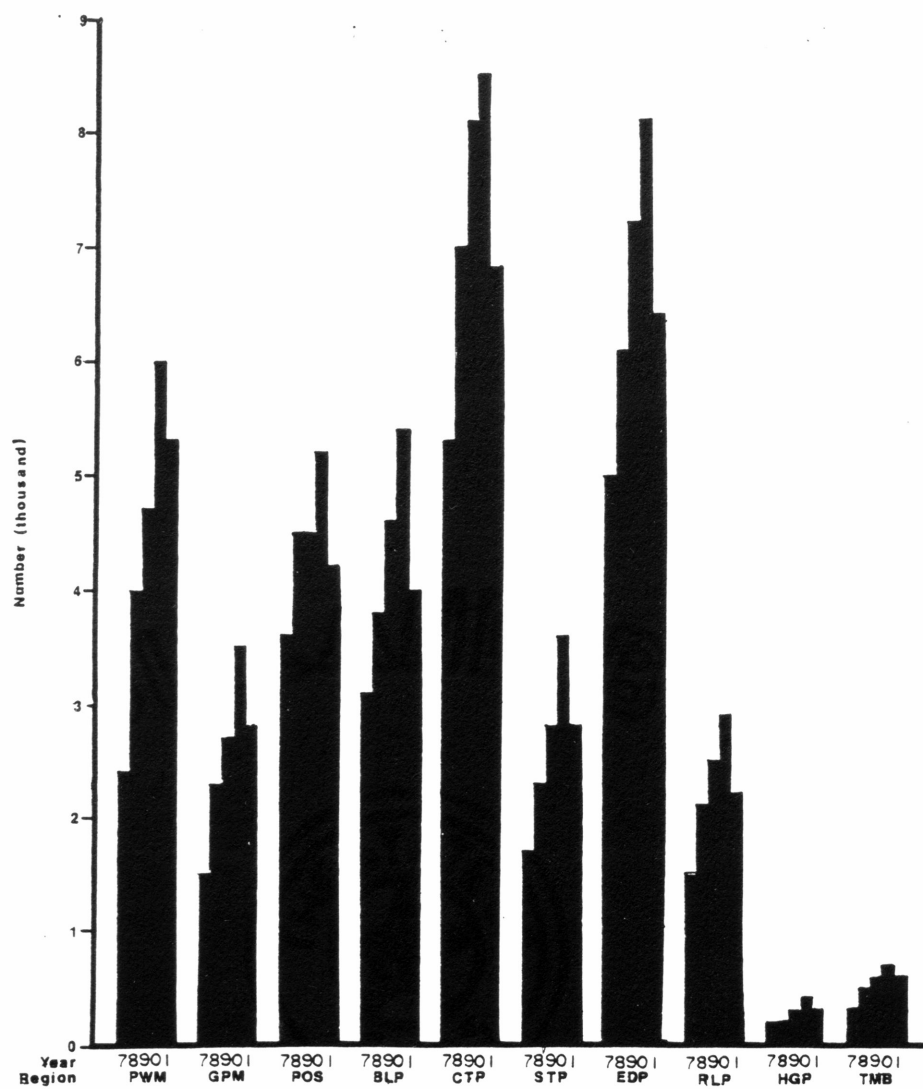
The greatest concentration of licensed trappers was in the Cross Timbers and Prairies and Edward's Plateau ecological region; areas of secondary importance include the Pineywoods, Post Oak Savannah, and Blackland Prairies regions (Fig. 4). The Gulf Prairies and Marshes, South Texas Plains, and Rolling Plains contained relatively few trappers, and the lowest number of trappers was in the High Plains and Trans-Pecos Mountains and Basins.

There was a consistent increase in licensed trappers from 1976-77 to 1979-80 followed by a subsequent decline in 1980-81. This trend is evident in each of the 10 ecological regions.

Species Accounts

Fifteen species of furbearers were harvested in Texas from 1976-77 to 1980-81. Each of the species is discussed in the following text with respect to harvest levels (ETAKE), trapping pressure (ENUMTR), and economic importance.

Figure 4. Regional distribution of licensed trappers from 1976-77 to 1980-81.



Raccoon

The raccoon (Procyon lotor), which occurs throughout Texas, ranked first among furbearers in number of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 394,775 in 1980-81 to 524,614 in 1979-80 (Table 1). These values represent an increase of 490 to 650 percent above the harvest level of 80,218 raccoons reported by Frye and Lay (undated) for 1941-42.

The most important ecological regions for harvesting raccoons were the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, and Cross Timbers and Prairies (Fig. 5a). Regions of secondary importance included the Blackland Prairie, Edwards Plateau, South Texas Plains, and Rolling Plains. Harvest levels were negligible in the High Plains and Trans-Pecos Mountains and Basins regions.

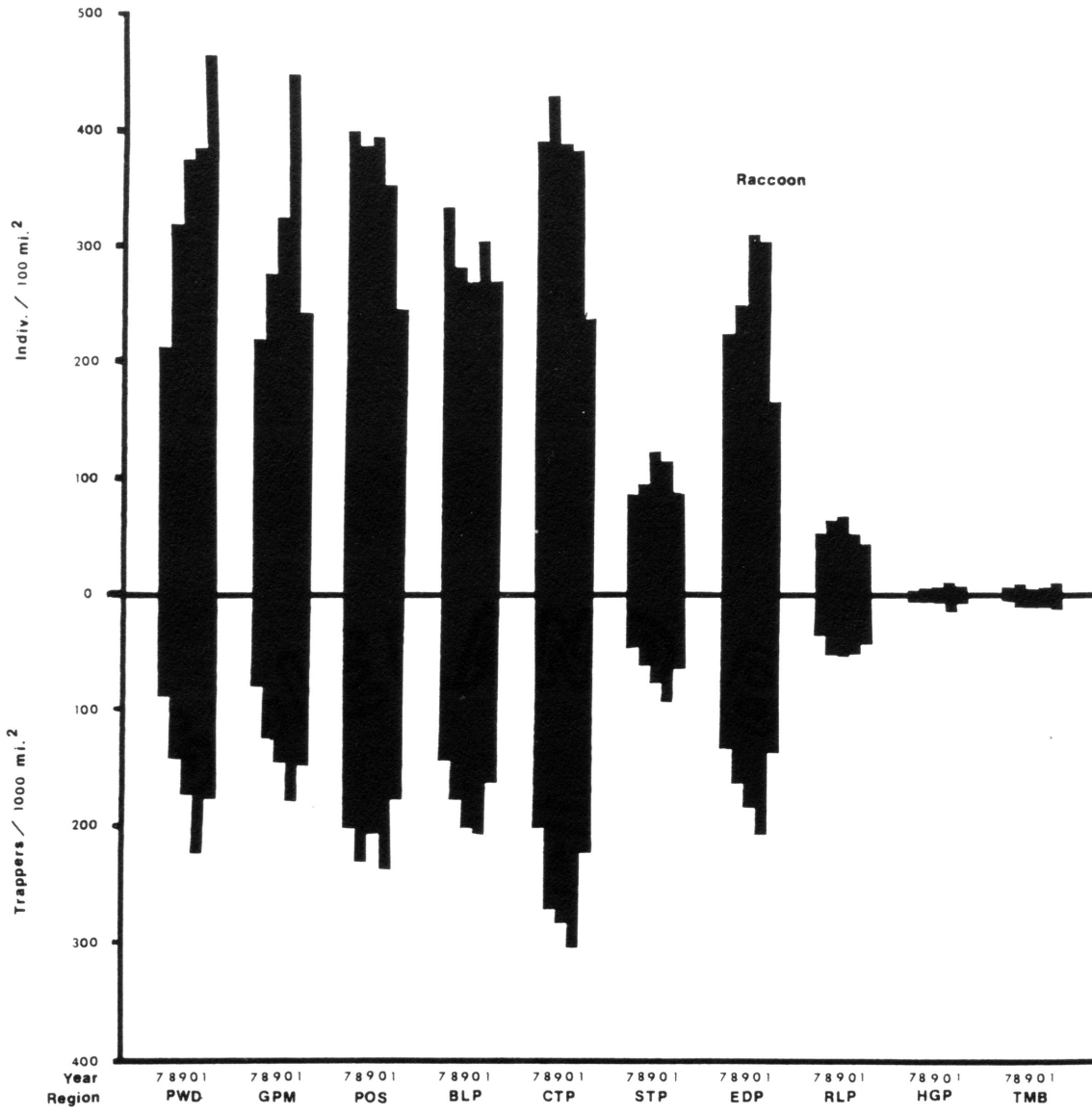
Raccoon harvest levels consistently increased in the Pineywoods region throughout the five year period of the TPW survey. Even though trapping pressure decreased in 1980-81 relative to the previous year, the number of raccoons harvested actually increased. Harvest levels and trapping pressure exhibited an increase for the first two or three years followed by a subsequent decline in the Gulf Prairies and Marshes, Cross Timbers and Prairies, South Texas Plains, Edwards Plateau, Rolling Plains, and High Plains regions. These variables were virtually constant in the Trans-Pecos Mountains and Basins region, whereas they showed an overall decrease in the Post Oak Savannah and Blackland Prairie regions.

Raccoons are the most economically important furbearer in the State; in 1941-42 they ranked second. The value of their pelts during

Table 1. Statewide harvest levels for each species of furbearer from 1976-77 to 1980-81.

	1976-77	Rank	1977-78	Rank	1978-79	Rank	1979-80	Rank	1980-81	Rank	Total	Rank
Raccoon	430,130	1	477,852	1	517,334	1	524,614	1	394,775	1	2,344,705	1
Ringtail	85,249	3	76,155	3	134,393	3	105,602	4	60,363	5	461,762	3
Opossum	198,224	2	226,514	2	314,901	2	405,497	2	243,485	2	1,388,621	2
Red Fox	7,243	9	11,199	9	27,268	8	17,425	9	9,188	9	72,323	9
Gray Fox	32,715	6	33,722	6	54,415	7	43,263	6	29,886	7	194,001	6
Bobcat	16,473	8	19,510	8	25,886	9	21,515	8	13,769	8	97,153	8
Coyote	46,085	5	69,851	4	113,522	4	98,229	5	65,607	4	393,294	5
Badger	2,390	12	2,351	14	9,261	11	14,464	10	3,268	14	31,734	10
Spotted Skunk	2,203	13	4,488	11	6,888	12	6,783	11	3,964	12	24,326	11
Striped Skunk	56,900	4	60,105	5	87,550	5	147,996	3	71,596	3	424,147	4
Nutria	18,455	7	27,103	7	61,165	6	37,177	7	48,297	6	192,197	7
Muskrat	86	14	6,575	10	10,172	10	1,863	14	3,991	11	22,687	12
Mink	3,297	10	2,399	13	3,347	14	3,198	12	5,939	10	18,180	13
Otter	20	15	246	15	261	15	707	15	812	15	2,046	15
Beaver	3,096	11	3,643	12	4,279	13	2,602	13	3,539	13	17,159	14
TOTAL	902,566		1,021,713		1,370,642		1,430,935		958,479		5,684,335	

Figure 5a. Regional distribution of raccoon harvest levels and trappers
from 1976-77 to 1980-81.



the TPW survey ranged from \$4 million in 1980-81 to \$13 million in 1978-79 (Table 2). On a regional basis, raccoons ranked first in economic importance in seven different ecological regions (Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, Cross Timbers and Prairies, South Texas Plains, and Edwards Plateau). They were second in importance in the Rolling Plains and High Plains, and fourth in the Trans-Pecos Mountains and Basins (Table 3).

Ringtail Cat

The ringtail cat (Bassariscus astutus), which occurs in west, northwest, central, and east-central Texas, ranked third among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 60,163 in 1980-81 to 134,393 in 1978-79 (Table 1). In comparison, Frye and Lay (undated) reported that 83,707 ringtails were harvested in 1941-42.

The most important ecological regions for harvesting ringtails were the Edwards Plateau and Cross Timbers and Prairies (Fig. 5b). Relatively fewer ringtails were harvested in the Blackland Prairies, South Texas Plains, and High Plains. Harvest levels were negligible in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Rolling Plains, and Trans-Pecos Mountains and Basins.

Ringtail harvest levels consistently increased in the Pineywoods region throughout the five year period of the TPW survey. Trapping pressure followed the same trend. Harvest levels and trapping pressure increased for the first two or three years, followed by a subsequent decline, in the Gulf Prairies and Marshes, Blackland Prairies, Cross Timbers and Prairies, South Texas Plains, Edwards Plateau,

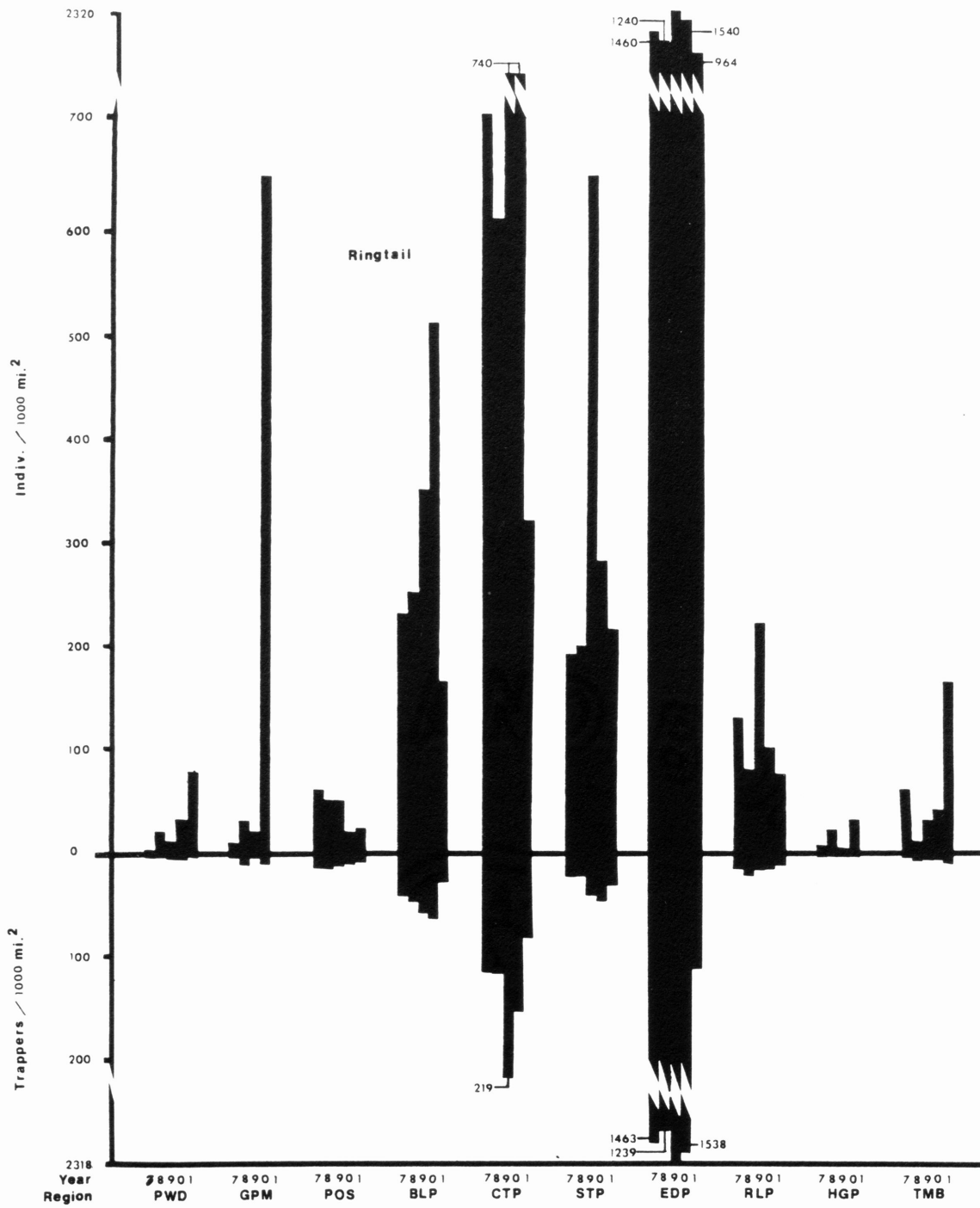
Table 2. Statewide economic levels from each species of furbearer from 1976-77 to 1980-81.

	1976-77	Rank	1977-78	Rank	1978-79	Rank	1979-80	Rank	1980-81	Rank	Total	Rank
Raccoon	5,376,621	1	7,645,632	1	13,192,015	1	10,492,280	1	4,342,525	1	41,049,073	1
Ringtail	383,622	5	570,940	5	1,007,946	6	607,213	7	437,632	5	3,007,353	5
Opossum	297,337	6	396,399	7	787,253	7	1,013,746	5	365,229	7	2,859,964	7
Red Fox	278,842	7	461,576	6	1,227,075	5	784,132	6	156,201	8	2,907,826	6
Gray Fox	736,099	3	961,076	4	1,904,518	4	1,514,221	3	777,045	4	5,892,959	4
Bobcat	1,070,724	2	1,073,068	3	2,005,234	3	1,398,454	4	894,976	3	6,442,456	3
Coyote	622,149	4	1,397,028	2	2,554,251	2	1,547,103	2	1,279,334	2	7,399,865	2
Badger	11,952	12	11,756	14	46,303	11	90,400	10	17,158	14	177,569	10
Spotted Skunk	3,304	13	53,860	10	17,220	14	16,961	14	16,848	15	108,193	14
Striped Skunk	71,125	9	90,157	9	175,098	9	443,988	8	143,192	9	923,540	9
Nutria	133,801	8	176,173	8	436,195	8	325,295	9	422,594	6	1,494,058	8
Muskrat	537	15	36,160	11	63,572	10	13,503	15	28,937	11	142,709	12
Mink	29,673	10	21,591	13	35,984	13	34,383	11	53,454	10	175,085	11
Otter	802	14	6,881	15	10,432	15	28,291	12	22,747	12	69,153	15
Beaver	27,865	11	25,500	12	38,507	12	19,514	13	18,579	13	129,965	13
TOTAL	9,044,453		12,927,797		23,501,603		18,329,464		8,976,451		72,779,768	

Table 3. Total regional economic levels for each species of furbearer from 1976-77 to 1980-81.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	6,780,479	1	4,329,464	1	5,236,224	1	4,673,513	1	6,543,358	1	2,819,519	1	7,666,217	1	1,716,715	2	136,300	2	177,284	4
Kingtail	23,091	3	66,854	8	22,001	10	184,658	6	471,321	7	325,019	4	1,680,436	3	139,095	6	10,430	8	84,448	5
Opossum	567,122	4	336,210	4	411,585	3	396,688	3	536,782	6	203,184	6	309,795	6	93,067	9	4,361	10	1,170	11
Red Fox	185,898	7	51,897	9	36,187	8	45,957	9	917,043	4	117,683	7	1,045,411	4	412,561	4	11,715	6	83,474	6
Gray Fox	770,721	3	173,035	6	204,379	5	242,123	5	1,009,861	3	231,041	5	2,180,571	2	383,889	5	112,864	3	584,475	3
Bobcat	789,350	2	344,989	3	353,628	4	316,365	4	1,521,803	2	962,871	3	733,281	5	871,525	3	104,493	4	639,251	2
Coyote	494,754	5	267,098	5	542,685	2	632,160	2	862,182	5	1,128,946	2	208,852	9	2,074,530	1	441,369	1	747,239	7
Badger	829	15	2,037	15	109	15	699	13	16,258	11	10,115	10	11,697	11	99,281	8	8,300	9	28,244	8
Spotted Skunk	2,898	14	6,606	13	6,778	12	15,979	12	29,721	10	3,191	11	30,742	10	7,260	12	1,397	12	3,222	10
Striped Skunk	48,208	9	31,457	10	38,991	7	90,654	7	285,265	8	51,732	8	229,236	7	112,445	7	1,159	7	24,413	9
Hutria	208,973	6	712,649	2	53,883	6	54,056	8	139,932	9	27,311	9	224,400	8	59,865	10	12,553	5	436	13
Huskrat	29,967	11	73,800	7	793	14	107	14	2,177	14	831	12	0	-	1,577	15	0	-	33,457	7
Link	94,512	8	25,125	12	12,665	11	29,132	11	6,288	13	0	-	399	13	5,110	13	1,854	11	0	-
Otter	24,729	12	29,588	11	885	13	0	-	802	15	0	-	0	-	13,149	11	0	-	0	-
Beaver	40,109	10	3,231	14	29,551	9	34,502	10	14,689	12	312	13	2,454	12	2,445	14	1,391	13	1,281	12
TOTAL	10,030,640		6,454,040		6,950,344		6,716,593		12,360,482		5,881,805		14,323,491		5,992,514		858,188		2,408,394	

Figure 5b. Regional distribution of ringtail cat harvest levels and trappers from 1976-77 to 1980-81.



Rolling Plains, and High Plains regions. These variables decreased in the Post Oak Savannah. Harvest levels and trapping pressure in the Trans-Pecos Mountains and Basins exhibit a decreasing trend over the first year, followed by a subsequent increase.

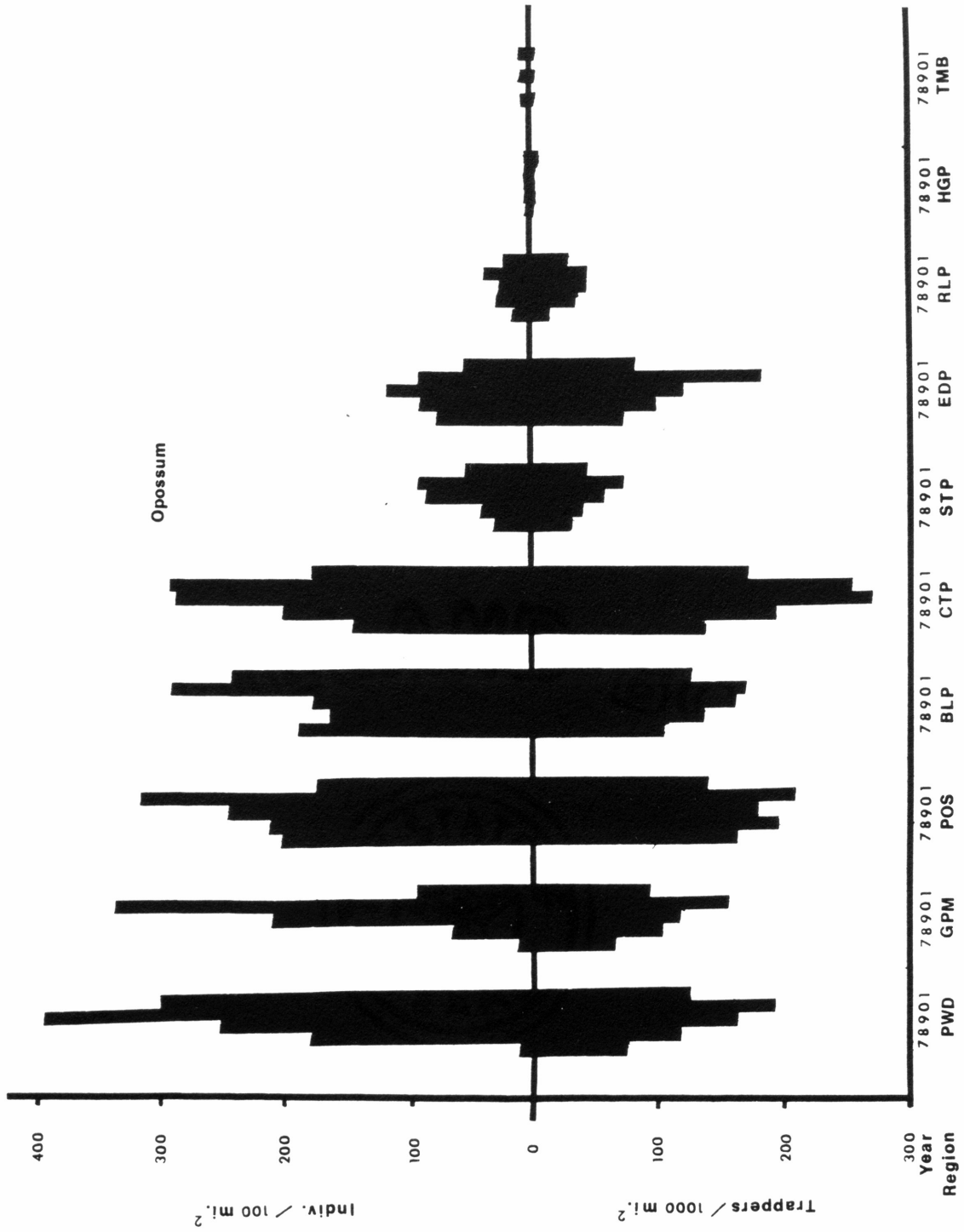
Ringtails are the fifth most economically important furbearer in the State; in 1941-42 they ranked first. The value of their pelts during the TPW survey ranged from \$380,000 in 1976-77 to \$1 million in 1978-79 (Table 2). On a regional basis, ringtails ranked third in economic importance in the Edwards Plateau. They were fourth in importance in the South Texas Plains, fifth in the Trans-Pecos Mountains and Basins, sixth in the Blackland Prairies, and Rolling Plains, seventh in the Cross Timbers and Prairies, eighth in the Gulf Prairies and Marshes, and High Plains, tenth in the Post Oak Savannah, and thirteenth in the Pineywoods (Table 3).

Opossum

The opossum (Didelphis virginiana), which occurs in all but part of the Panhandle and north-central part of Trans-Pecos Texas, ranked second in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 198,224 in 1976-77 to 405,497 in 1979-80 (Table 1). In comparison, Frye and Lay (undated) reported that 393,146 opossums were harvested in 1941-42.

The most important ecological regions for harvesting opossums were the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairies, and Cross Timbers and Prairies (Fig. 5c). Regions of secondary importance include the South Texas Plains and Edwards Plateau regions. Harvest levels were minor in the Rolling Plains and

Figure 5c. Regional distribution of opossum harvest levels and trappers
from 1976-77 to 1980-81.



negligible in the High Plains and Trans-Pecos Mountains and Basins.

Opossum harvest levels and trapping pressure during the five year period of the TPW survey increased for the first two or three years, followed by a subsequent decline, in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, Cross Timbers and Prairies, Edwards Plateau, and Rolling Plains regions. These variables were virtually constant in the High Plains and Trans-Pecos Mountains and Basins.

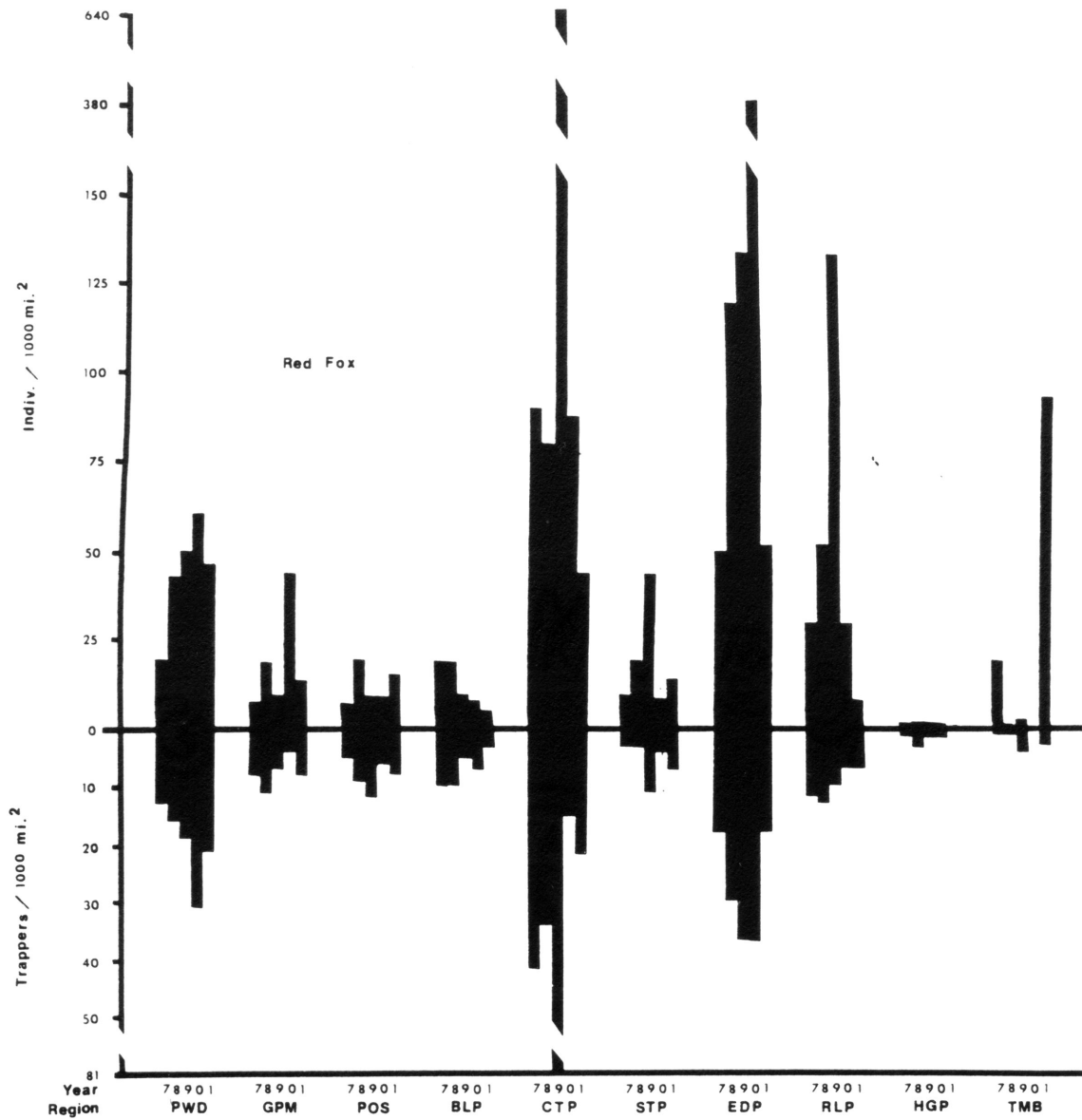
Opossums rank seventh in economic importance in the State; in 1941-42 they ranked fifth. The value of their pelts during the TPW survey ranged from \$297,000 in 1976-77 to \$1 million in 1979-80 (Table 2). On a regional basis, opossums ranked third in economic importance in the Post Oak Savannah and Blackland Prairies. They were fourth in importance in the Pineywoods and Gulf Prairies and Marshes, sixth in the Cross Timbers and Prairies, South Texas Plains, and Edwards Plateau, ninth in the Rolling Plains, tenth in the High Plains, and eleventh in the Trans-Pecos Mountains and Basins (Table 3).

Red Fox

The red fox (Vulpes fulva), which occurs in the eastern, central, northern, and southern Panhandle of Texas, ranked ninth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 7,243 in 1976-77 to 27,268 in 1978-79 (Table 1).

The most important ecological regions for harvesting red foxes were the Pineywoods, Cross Timbers and Prairies, Edwards Plateau, and Rolling Plains (Fig. 5d). Regions of secondary importance included

Figure 5d. Regional distribution of red fox harvest levels and trappers from 1976-77 to 1980-81.



the Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, and South Texas Plains. Harvest levels were minor in the High Plains and Trans-Pecos Mountains and Basins.

Red fox harvest levels and trapping pressure during the five year period of the TPW survey exhibited an increase for the first two or three years, followed by a subsequent decline, in the Pineywoods, Gulf Prairies and Marshes, Cross Timbers and Prairies, South Texas Plains, Edwards Plateau, and Rolling Plains regions. These variables were virtually constant in the Post Oak Savannah and High Plains regions.

Red foxes ranked sixth in economic importance in the State from 1976-77 to 1980-81. The value of their pelts during the TPW survey ranged from \$156,000 in 1980-81 to \$1.2 million in 1978-79 (Table 2). On a regional basis, red foxes ranked fourth in economic importance in the Cross Timbers and Prairies, Edwards Plateau, and Rolling Plains. They were sixth in importance in the High Plains and Trans-Pecos Mountains and Basins, seventh in the Pineywoods and South Texas Plains, eighth in the Post Oak Savannah, and ninth in the Gulf Prairies and Marshes and Blackland Prairie (Table 3).

Gray Fox

The gray fox (*Urocyon cinereoargenteus*), which occurs in all but the northern Panhandle of Texas, ranked sixth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 29,886 in 1980-81 to 54,415 in 1978-79 (Table 1).

The most important ecological regions for harvesting gray fox were the Cross Timbers and Prairies and the Edwards Plateau (Fig. 5e). Regions of secondary importance included the Pineywoods and Rolling Plains. Harvest levels were minor in the Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, South Texas Plains, High Plains, and Trans-Pecos Mountains and Basins.

Gray fox harvest levels and trapping pressure during the five year period of the TPW survey exhibited an increase for the first two or three years, followed by a subsequent decline, in the Pineywoods, Gulf Prairies and Marshes, Cross Timbers and Prairies, Edwards Plateau, Rolling Plains, and High Plains regions. Harvest levels and trapping pressure in the other four regions (Post Oak Savannah, Blackland Prairies, South Texas Plains, and Trans-Pecos Mountains and Basins) exhibited an inconsistent pattern from year to year.

Gray fox are the fourth most economically important furbearer in the State; in 1941-42 they ranked seventh (Frye and Lay, undated). The pelt value during the TPW survey ranged from \$736,000 in 1976-77 to \$1.9 million in 1978-79 (Table 2). On a regional basis, gray fox ranked second in economic importance in the Edwards Plateau. They were third in importance in the Pineywoods, Cross Timbers and Prairies, High Plains, and Trans-Pecos Mountains and Basins, fifth in the Post Oak Savannah, Blackland Prairie, South Texas Plains, and Rolling Plains, and sixth in the Gulf Prairies and Marshes (Table 3).

Bobcat

The bobcat (Lynx rufus), which occurs throughout Texas, ranked eighth among furbearers in numbers of individuals harvested from 1976-

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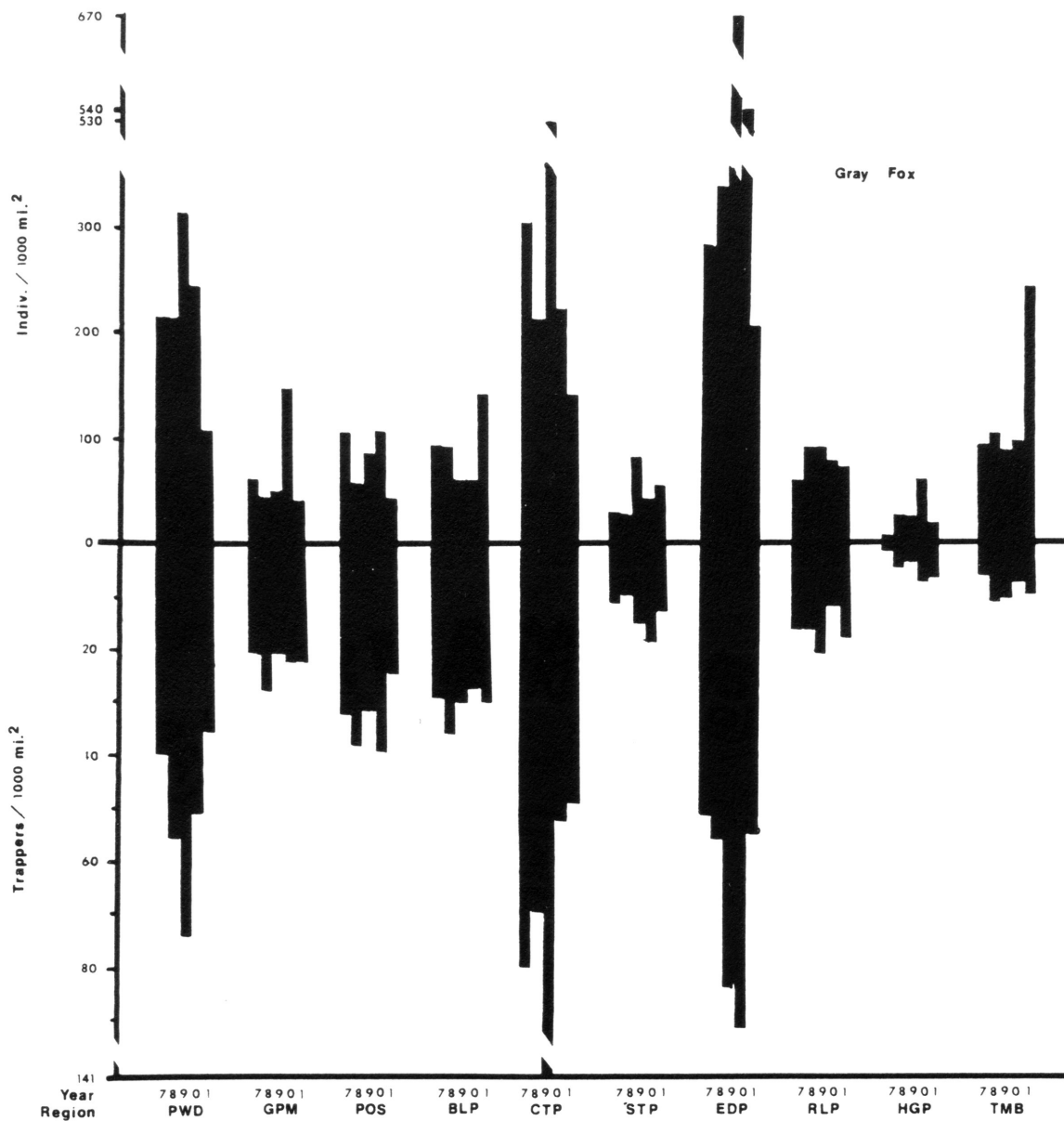
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Figure 5e. Regional distribution of gray fox harvest levels and trappers from 1976-77 to 1980-81.



77 to 1980-81. Harvest levels during this period varied from 13,769 in 1980-81 to 25,886 in 1978-79 (Table 1).

Bobcat harvest levels were relatively evenly distributed throughout the State, although the primary areas of harvest were in the Pineywoods and Cross Timbers and Prairies (Fig. 5f). Regions of secondary importance included the South Texas Plains, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, Edwards Plateau, Rolling Plains, and Trans-Pecos Mountains and Basins. Harvest level was negligible in the High Plains.

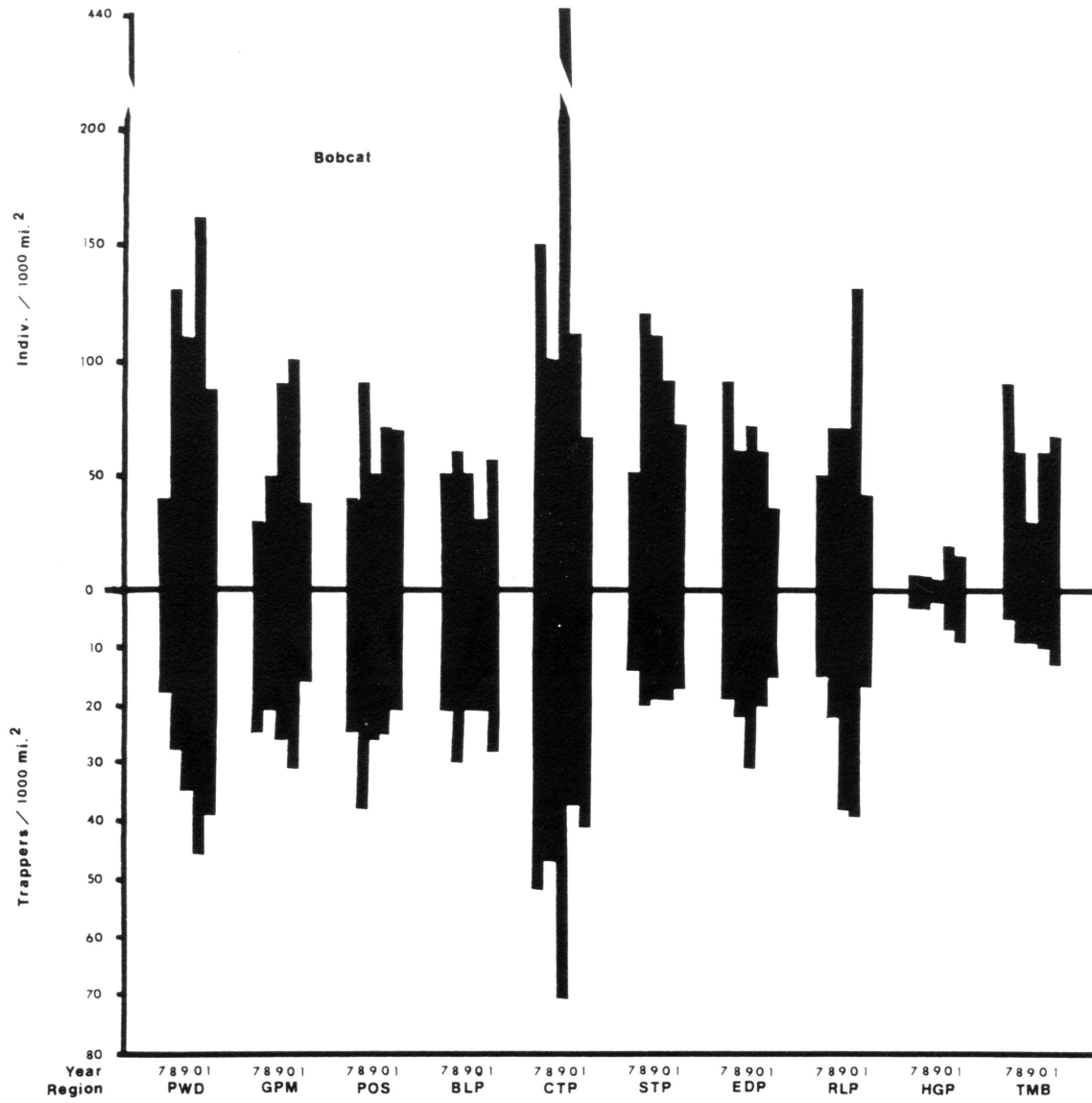
Bobcat harvest levels and trapping pressure during the five year period of the TPW survey exhibited an increase for the first two or three years, followed by a subsequent decline, in the Pineywoods, Gulf Prairies and Marshes, South Texas Plains, and Rolling Plains. These variables were virtually constant in the Blackland Prairie. Bobcat harvest levels consistently decreased in the Edwards Plateau region, even though the trapping pressure actually increased from 1976-77 to 1978-79. Harvest levels and trapping pressure exhibited an inconsistent pattern from year to year in the Post Oak Savannah, Cross Timbers and Prairies, High Plains, and Trans-Pecos Mountains and Basins.

Bobcats are the third most economically important furbearer in the State; in 1941-42 they ranked very little in economic importance (Frye and Lay, undated). The value of their pelts during the TPW survey ranged from \$894,000 in 1980-81 to \$2 million in 1978-79 (Table 2). On a regional basis, bobcats ranked second in economic importance in the Pineywoods, Cross Timbers and Prairies, and Trans-Pecos Mountains and Basins. They were third in importance in the Gulf

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Figure 5f. Regional distribution of bobcat harvest levels and trappers from 1976-77 to 1980-81.



Prairies and Marshes, Blackland Prairie, and High Plains, and fifth in the Edwards Plateau (Table 3).

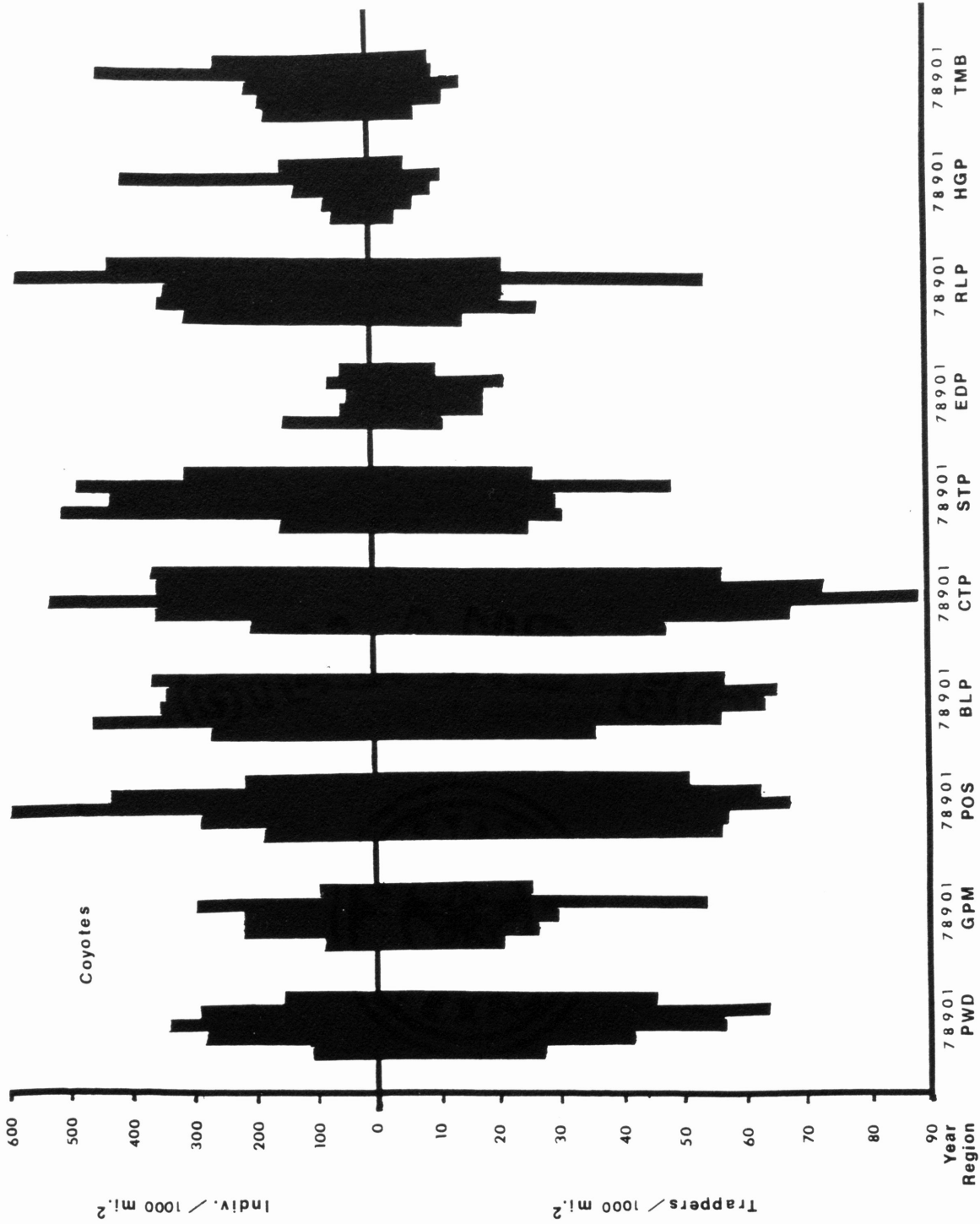
Coyote

The coyote (Canis latrans), which occurs throughout Texas, ranked fifth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 46,085 in 1976-77 to 113,522 in 1978-79 (Table 1). These values represent an increase of 1,083 to 2,667 percent above the harvest level of 4,256 coyotes reported by Frye and Lay (undated) for 1941-42.

The most important ecological regions for harvesting coyotes were the Post Oak Savannah, Blackland Prairie, Cross Timbers and Prairies, South Texas Plains, and Rolling Plains (Fig. 5g). Regions of secondary importance included the Pineywoods, Gulf Prairies and Marshes, High Plains, and Trans-Pecos Mountains and Basins. Harvest levels were relatively low in the Edwards Plateau.

Coyote harvest levels and trapping pressure during the five year period of the TPW survey exhibited an increase for the first two or three years, followed by a subsequent decline, in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, South Texas Plains, Rolling Plains, High Plains and Trans-Pecos Mountains and Basins. Coyote harvest levels consistently decreased in the Edwards Plateau region, even though the trapping pressure actually increased from 1976-77 to 1979-80. Harvest levels and trapping pressure showed an inconsistent pattern from year to year in the Blackland Prairie and Cross Timbers and Prairies.

Figure 5g. Regional distribution of coyote harvest levels and trappers from 1976-77 to 1980-81.



Coyotes are the second most economically important furbearer in the State; in 1941-42 they were of little economic importance. The value of their pelts during the TPW survey ranged from \$622,000 in 1976-77 to \$2.5 million in 1978-79 (Table 2). On a regional basis, coyotes ranked first in economic importance in the Rolling Plains, High Plains, and Trans-Pecos Mountains and Basins. They ranked second in importance in the Post Oak Savannah, Blackland Prairie and South Texas Plains, fifth in the Pineywoods, Gulf Prairies and Marshes, and Cross Timbers and Prairies, and ninth in the Edwards Plateau (Table 3).

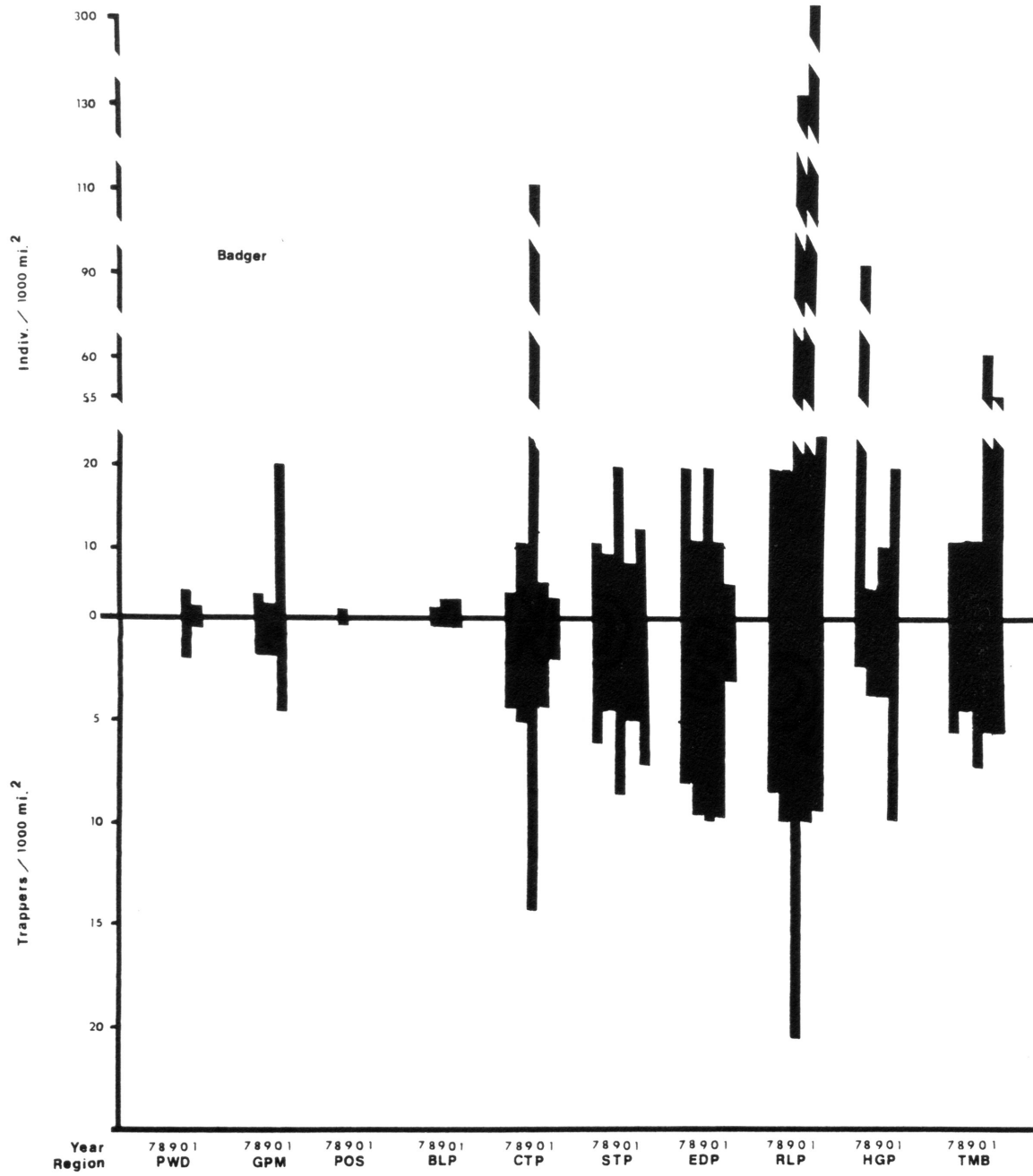
Badger

The badger (Taxidea taxus), which occurs in all but the northeast, east and southeastern parts of Texas, ranked tenth among furbearers in number of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 2,351 in 1977-78 to 14,464 in 1979-80 (Table 1). These values represent an increase of 231 to 1419 percent above the harvest level of 1,019 badgers reported by Frye and Lay (undated) for 1941-42.

The most important ecological regions for harvesting badgers were the Rolling Plains and Trans-Pecos Mountains and Basins (Fig. 5h). Regions of secondary importance include the Cross Timbers and Prairies and High Plains. Harvest levels in the South Texas Plains and Edwards Plateau were minor, while harvest levels in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, and Blackland Prairie were essentially negligible.

Badger harvest levels and trapping pressure during the five year period of the TPW survey exhibited an increase for the first two or

Figure 5h. Regional distribution of badger harvest levels and trappers from 1976-77 to 1980-81.



three years, followed by a subsequent decline in the Cross Timbers and Prairies, Rolling Plains and Trans-Pecos Mountains and Basins. An inconsistent harvest level and trapping level pattern occurred in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, South Texas Plains, Edwards Plateau, and High Plains.

Badgers rank tenth in economic importance in the State; in 1941-42 they ranked eleventh. The value of their pelts during the TPW survey ranged from \$11,756 in 1977-78 to \$90,400 in 1979-80 (Table 2). On a regional basis, badgers ranked eighth in economic importance in the Rolling Plains and Trans-Pecos Mountains and Basins. They were ninth in the High Plains, tenth in the South Texas Plains, eleventh in the Cross Timbers and Prairies and Edwards Plateau, thirteenth in the Blackland Prairie and fifteenth in the Pineywoods, Gulf Prairies and Marshes, and Post Oak Savannah (Table 3).

Eastern and Western Spotted Skunk

The eastern spotted skunk (Spilogale putorius) occurs in east, coastal, and the upper Panhandle of Texas, whereas the western spotted skunk (Spilogale gracilis) occurs in the Trans-Pecos, Rio Grande, and central portions of the state. They ranked eleventh in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period from 2,203 in 1976-77 to 6,888 in 1978-79 (Table 1). These values represent a decrease of 145 to 452 percent below the harvest level of 9,963 spotted skunks reported by Frye and Lay (undated) for 1941-42.

The most important ecological regions for harvesting spotted skunks were the Blackland Prairie and Cross Timbers and Prairies (Fig.

5i). Regions of secondary importance included the Pineywoods, Gulf Prairies and Marshes, Edwards Plateau, and Post Oak Savannah. The harvest levels in the South Texas Plains were minor while the High Plains and Trans-Pecos Mountains and Basins harvests were negligible.

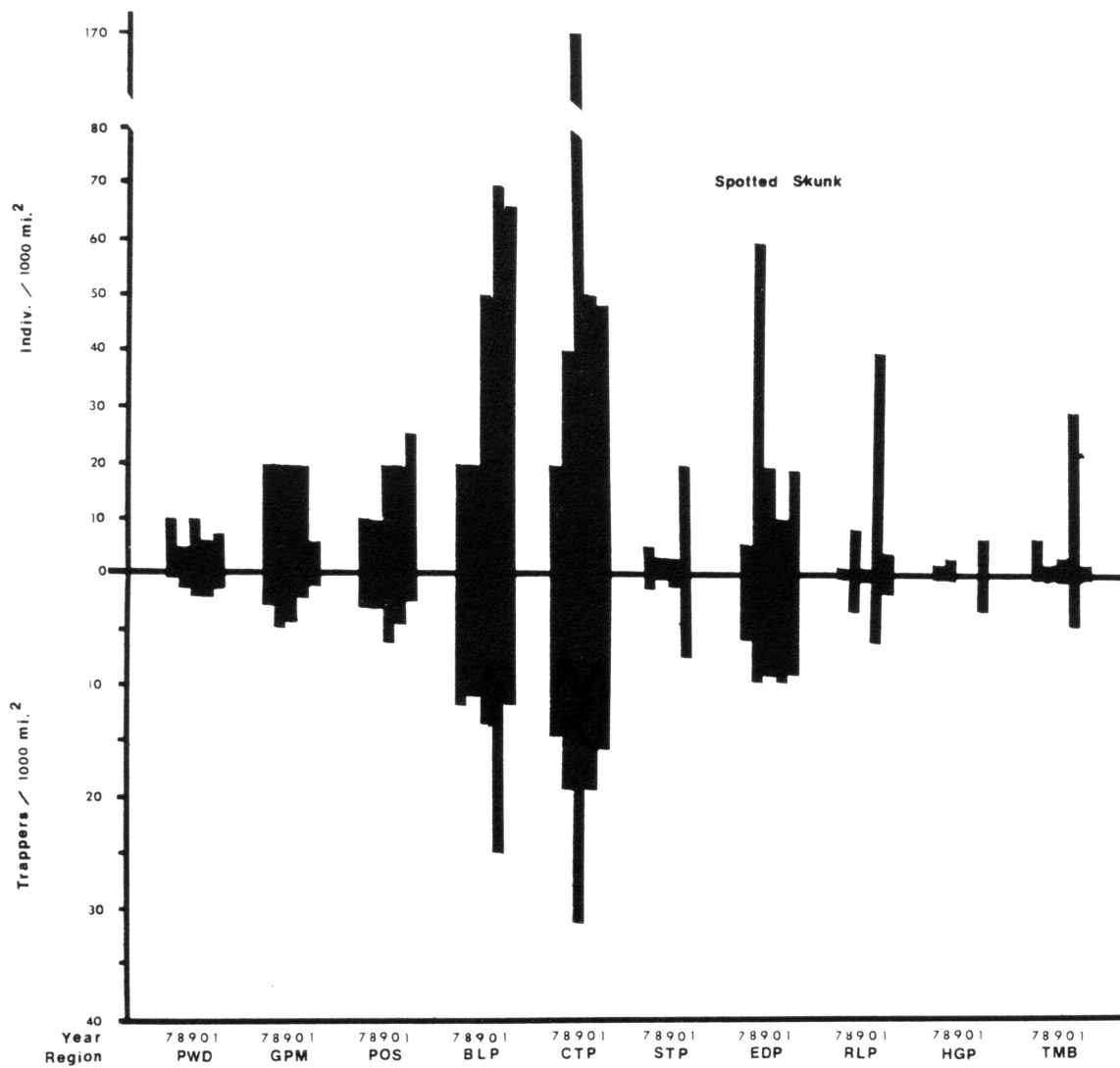
Spotted skunk harvest levels and trapping pressure during the five year period of the TPW survey exhibit an increase for the first two or three years, followed by a subsequent decline, in the Blackland Prairie and Cross Timbers Prairies. Harvest levels and trapping pressure was inconsistent from year to year in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, South Texas Plains, Edwards Plateau, Rolling Plains, High Plains, and Trans-Pecos Mountains and Basins.

Spotted skunks rank fourteenth in economic importance in the State; in 1941-42 they ranked tenth. The value of their pelts during the TPW survey ranged from \$3,304 in 1976-77 to \$53,860 in 1977-78 (Table 2). On a regional basis, spotted skunks ranked tenth in economic importance in three ecological regions (Cross Timbers and Prairies, Edwards Plateau, and Trans-Pecos Mountains and Basins). They were eleventh in importance in the South Texas Plains, twelfth in the Post Oak Savannah, Blackland Prairie, Rolling Plains and High Plains, thirteenth in the Gulf Prairies and Marshes, and fourteenth in the Pineywoods (Table 3).

Striped Skunk

The striped skunk (Mephitis mephitis), which occurs throughout Texas, ranked fourth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period

Figure 5i. Regional distribution of spotted skunk harvest levels and trappers from 1976-77 to 1980-81.



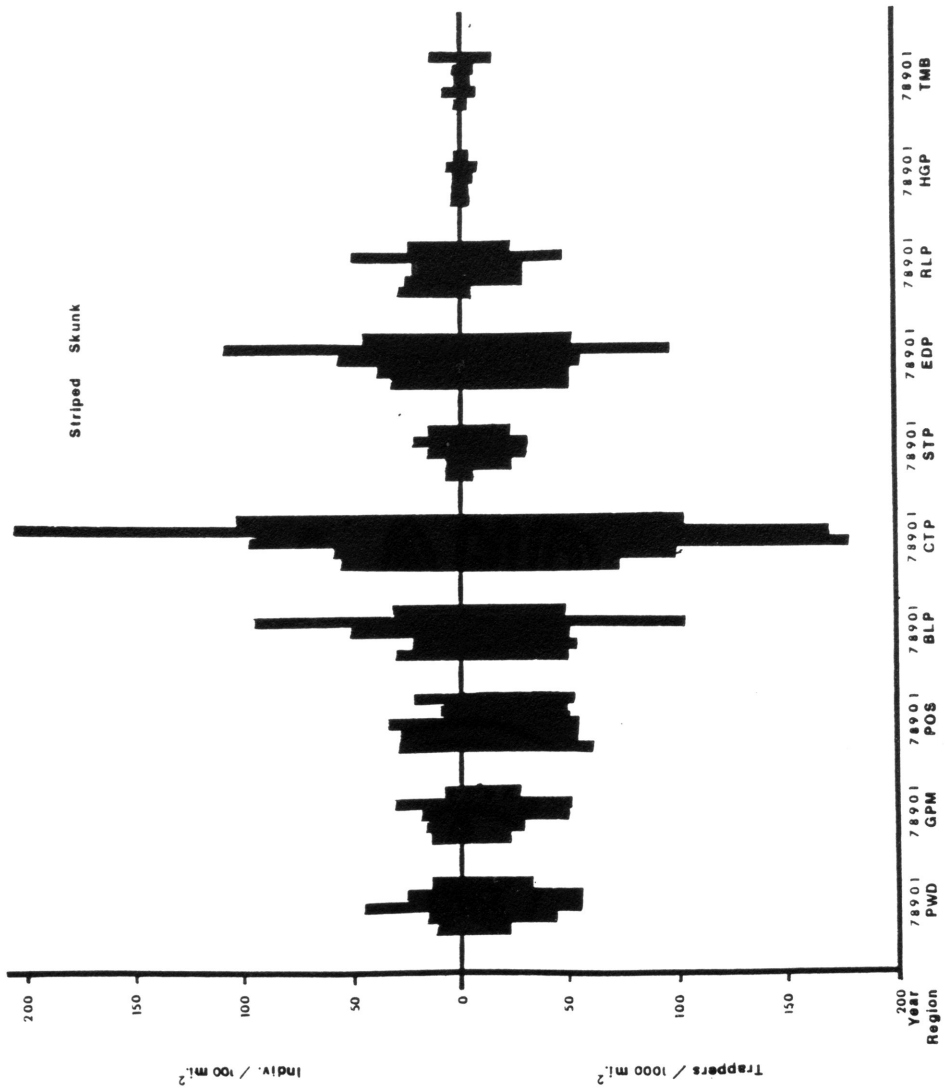
varied from 56,900 in 1976-77 to 147,996 in 1979-80 (Table 1). In comparison, Frye and Lay (undated) reported that 140,943 striped skunks were harvested in 1941-42.

The most important ecological regions for harvesting striped skunks were the Cross Timbers and Prairies and Edwards Plateau (Fig. 5j). Regions of secondary importance included the Blackland Prairie and Rolling Plains. Harvest levels in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, and South Texas Plains were minor, whereas the High Plains and Trans-Pecos Mountains and Basins harvest were negligible.

Striped skunk harvest levels for the five year period of the TPW survey exhibited an increase for the first two or three years followed by a subsequent decline in the Pineywoods, Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, Cross Timbers and Prairies, South Texas Plains, Rolling Plains, Edwards Plateau and High Plains. Trapping pressure followed this same trend in all of these regions, except in the Post Oak Savannah, where it consistently decreased. These variables were virtually constant in the Trans-Pecos Mountains and Basins regions.

Striped skunks ranked ninth in economic importance in the State; in 1941-42 they ranked fourth. The value of their pelts during the TPW survey ranged from \$71,000 in 1976-77 to \$444,000 in 1979-80 (Table 2). On a regional basis, the striped skunk ranked seventh in economic importance in the Post Oak Savannah, Blackland Prairie, Rolling Plains, and High Plains. They were eighth in importance in the Cross Timbers and Prairies and South Texas Plains, ninth in the

Figure 5j. Regional distribution of striped skunk harvest levels and trappers from 1976-77 to 1980-81.



Pineywoods and Trans-Pecos Mountains and Basins, and tenth in the Gulf Prairies and Marshes (Table 3).

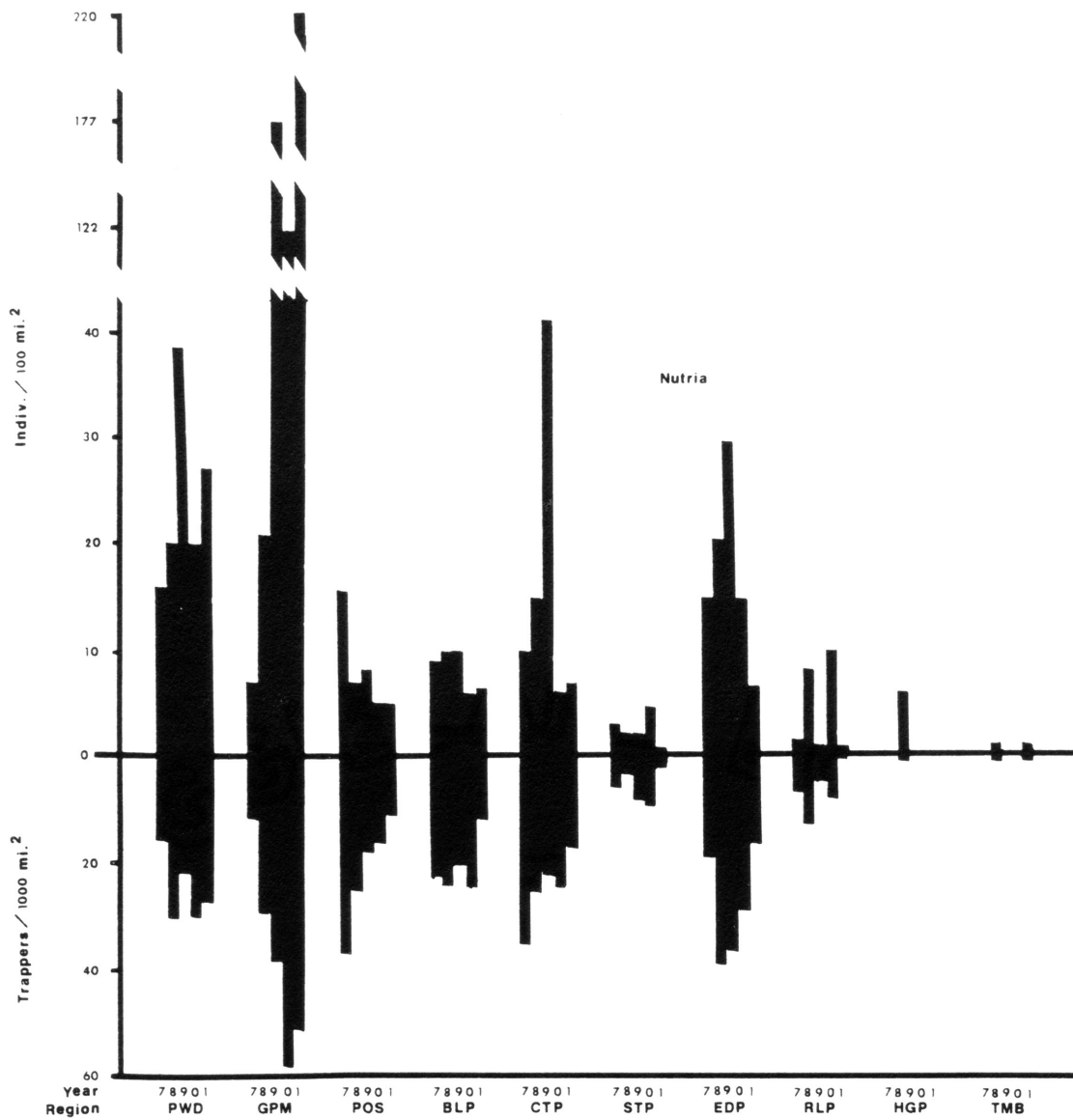
Nutria

The nutria (Myocastor coypus), which occurs in east, central, coastal, south, and north-central Texas, ranked seventh among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 18,455 in 1976-77 to 61,165 in 1978-79 (Table 1).

The most important ecological region for harvesting nutria was the Gulf Prairies and Marshes (Fig. 5k). Regions of secondary importance included the Pineywoods, Cross Timbers and Prairies, and Edwards Plateau. The harvest levels in the Post Oak Savannah, Blackland Prairie, South Texas Plains, and Rolling Plains were minor, whereas the High Plains and Trans-Pecos Mountains and Basins harvests were negligible.

Nutria harvest levels during the five year period of the TPW survey exhibited an increase for the first two or three years followed by a subsequent decline in the Pineywoods, Blackland Prairie, Cross Timbers and Prairies, South Texas Plains, and Edwards Plateau regions. Trapping pressure followed this same trend in all of these regions except in the Blackland Prairie and Cross Timbers and Prairies, where it consistently decreased. Harvest levels and trapping pressure in the Post Oak Savannah exhibited a consistently decreasing trend. The Gulf Prairies and Marshes exhibited an inconsistent pattern in harvest levels, while the trapping pressure increased from 1976-77 to 1979-80, then subsequently decreased.

Figure 5k. Regional distribution of nutria harvest levels and trappers from 1976-77 to 1980-81.



Nutria ranked eighth in economic importance in the State from 1976-77 to 1980-81. The value of their pelts during the TPW survey ranged from \$134,000 in 1976-77 to \$436,00 in 1978-79 (Table 2). On a regional basis, nutria ranked second in economic importance in the Gulf Prairies and Marshes. They ranked fifth in importance in the High Plains, sixth in the Pineywoods and Post Oak Savannah, eighth in the Blackland Prairie and Edwards Plateau, ninth in the Cross Timbers and Prairies and South Texas Plains, tenth in the Rolling Plains, and thirteenth in the Trans-Pecos Mountains and Basins (Table 3).

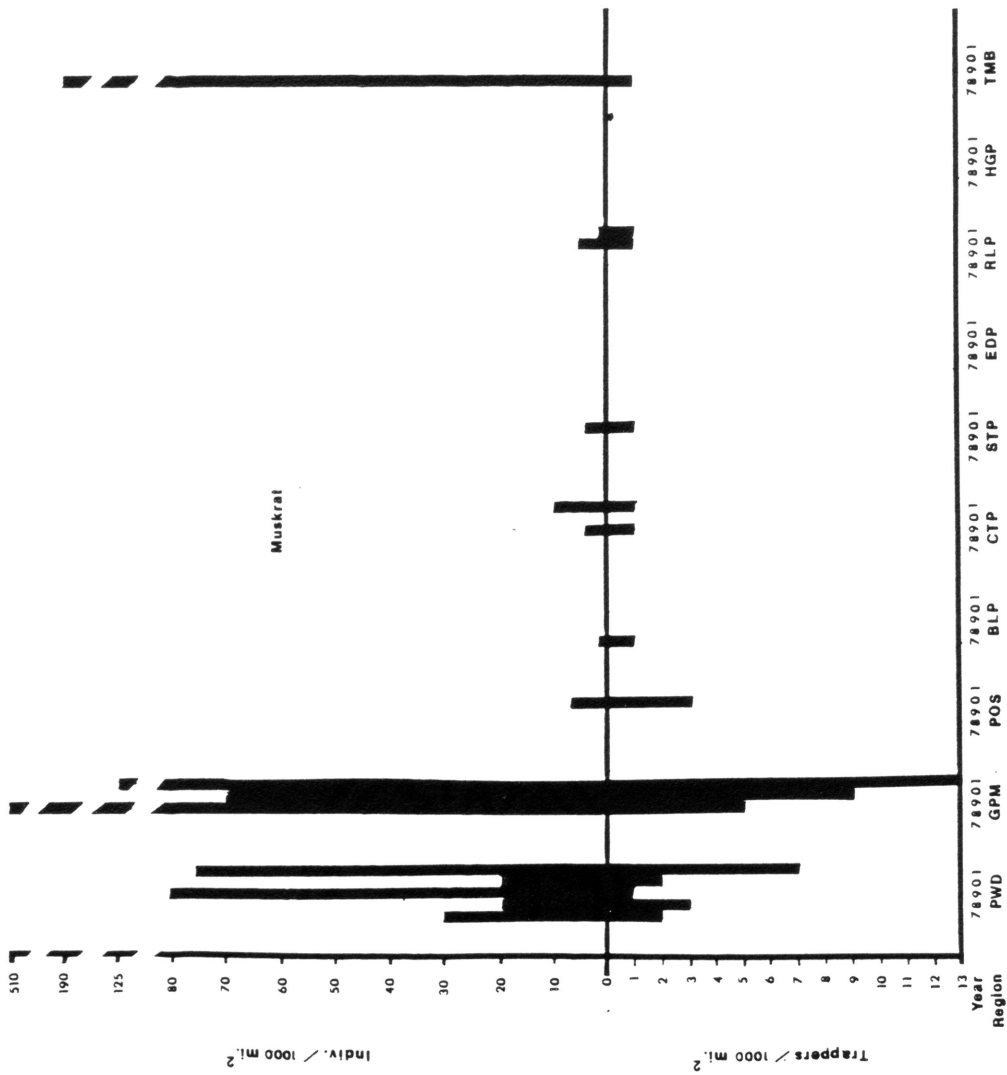
Muskrat

The muskrat (Ondatra zibethicus), which occurs in east, north and west Texas, ranked twelfth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 86 in 1976-77 to 10,172 in 1978-79 (Table 1). These values represent a decrease of 1061 to 125,474 percent below the harvest level of 107,908 muskrats reported by Frye and Lay (undated) for 1941-42.

The most important ecological regions for harvesting muskrats were the Gulf Prairies and Marshes and Pineywoods (Fig. 51). Harvest levels were negligible in the Post Oak Savannah, Blackland Prairie, Cross Timbers and Prairies, South Texas Plains, Edwards Plateau, Rolling Plains, High Plains, and Trans-Pecos Mountains and Basins.

Muskrat harvest levels and trapping pressure during the five year period of the TPW survey exhibited an inconsistent pattern from year to year. Muskrats ranked twelfth in economic importance in the State from 1976-77 to 1980-81; in 1941-42 they ranked sixth. The value of their pelts during the TPW survey ranged from \$537 in 1976-77 to \$63,500 in

Figure 51. Regional distribution of muskrat harvest levels and trappers from 1976-77 to 1980-81.



1978-79 (Table 2). On a regional basis, muskrats ranked seventh in economic importance in the Gulf Prairies and Marshes and Trans-Pecos Mountains and Basins. They ranked eleventh in importance in the Pineywoods, twelfth in the South Texas Plains, fourteenth in the Post Oak Savannah, Blackland Prairie, and Cross Timbers and Prairies, and fifteenth in the Rolling Plains. They were of no importance in the Edwards Plateau and High Plains.

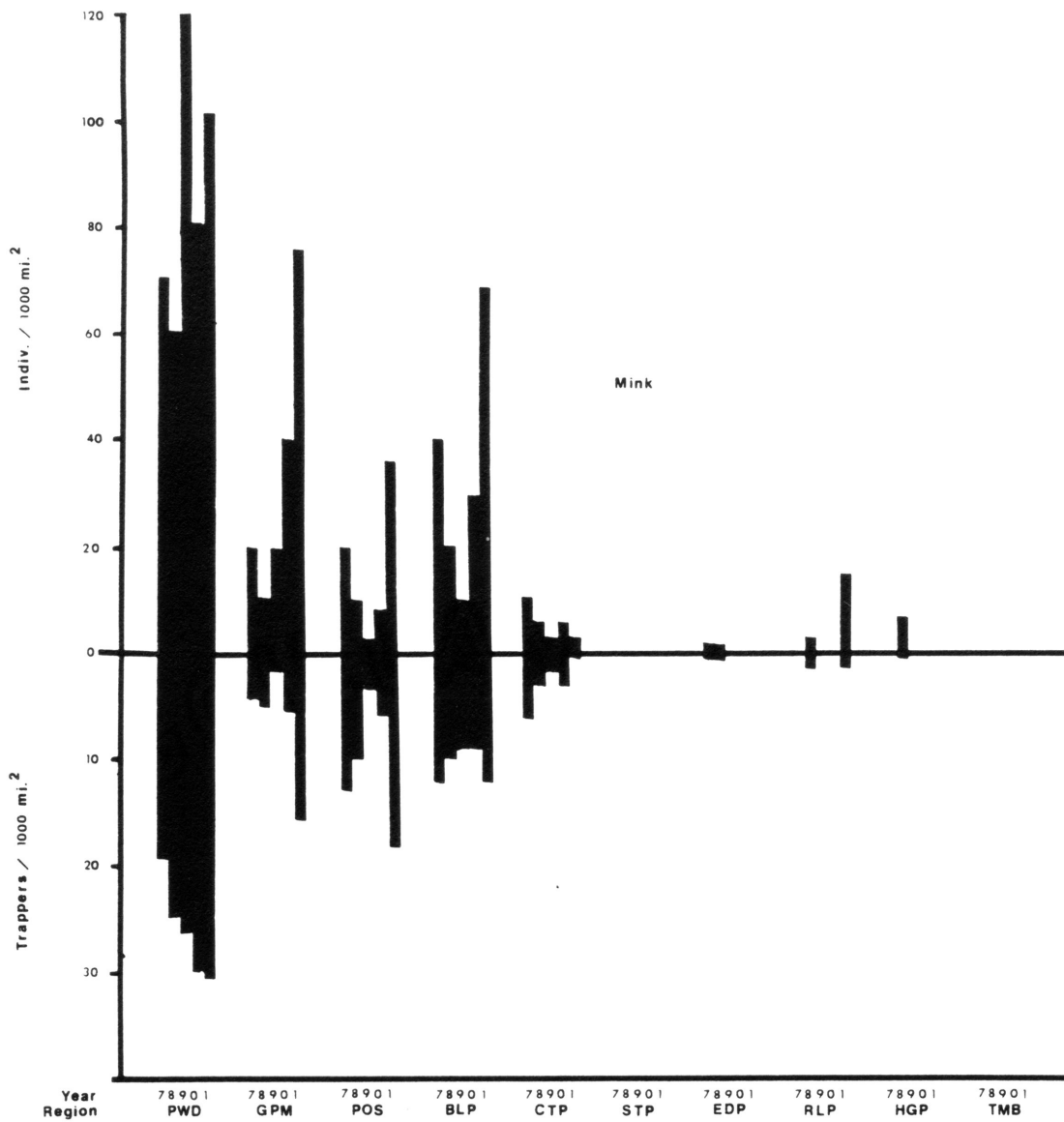
Mink

The mink (Mustela vison), which occurs in east, east-central, north-central, and the upper coast of Texas, ranked thirteenth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 2,399 in 1977-78 to 5,939 in 1980-81 (Table 1). These values represent a decrease of 292 to 722 percent below the harvest level of 17,317 mink reported by Frye and Lay (undated) for 1941-42.

The most important ecological region for harvesting mink was the Pineywoods (Fig. 5m). Regions of secondary importance included the Gulf Prairies and Marshes, Post Oak Savannah, Blackland Prairie, and Cross Timbers and Prairies. Harvest levels in the South Texas Plains, Edwards Plateau, Rolling Plains, High Plains, and Trans-Pecos Mountains and Basins were negligible.

Mink harvest levels during the five year period of the TPW survey exhibited an increase for the first two or three years followed by a subsequent decline in the Pineywoods. Even with the consistent increase of trapping pressure, the number of mink actually declined after the 1978-79 season. Harvest levels and trapping pressure in the

Figure 5m. Regional distribution of mink harvest levels and trappers
from 1976-77 to 1980-81.



Gulf Prairies and Marshes, Post Oak Savannah, and Blackland Prairie exhibited a decrease over the first two or three years, followed by a subsequent increase. These variables were consistently decreasing in the Cross Timbers and Prairies.

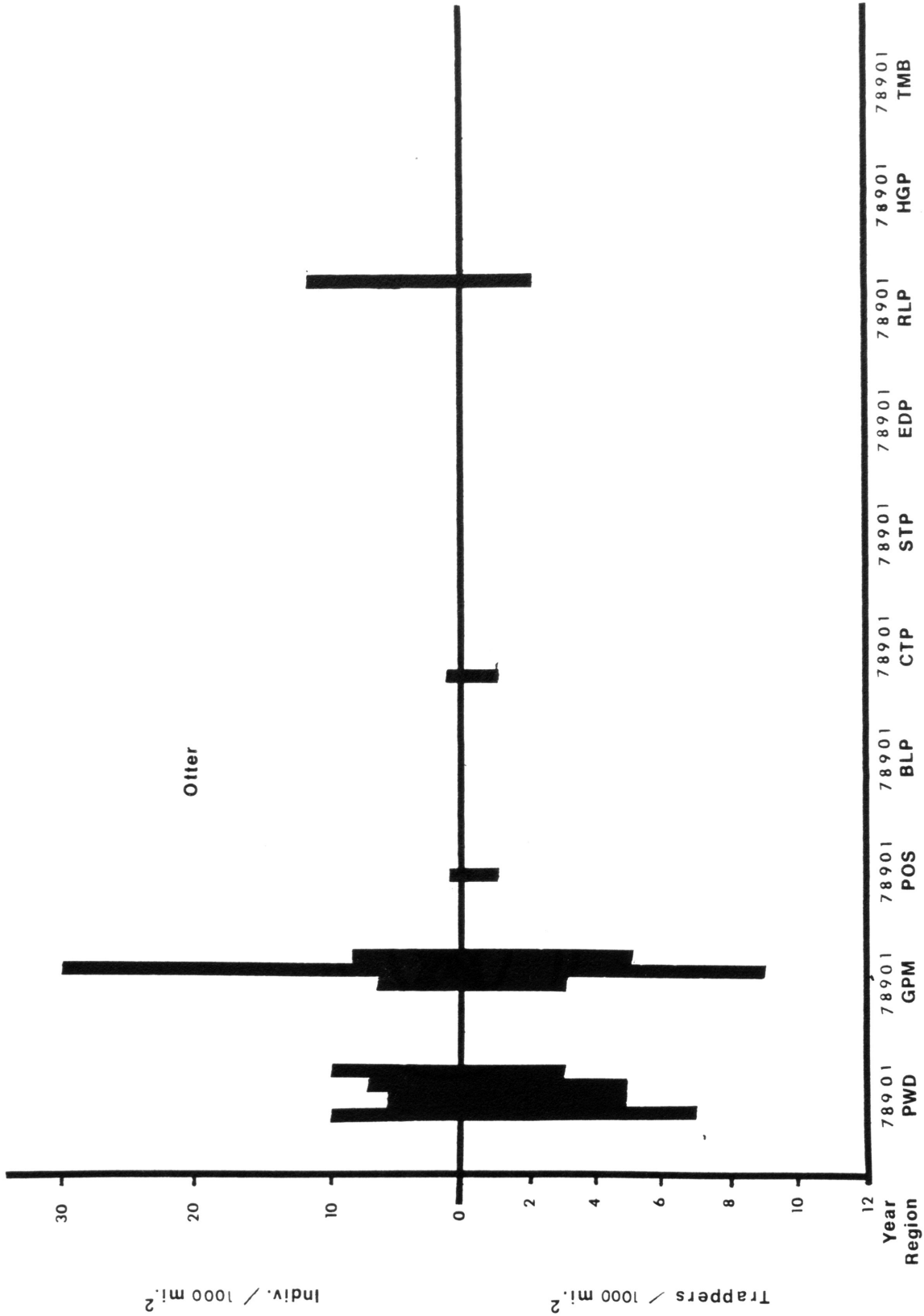
Mink rank eleventh in economic importance in the State; in 1941-42 they ranked third. The value of their pelts during the TPW survey ranged from \$21,600 in 1977-78 to \$53,500 in 1980-81 (Table 2). On a regional basis, minks ranked eighth in economic importance in the Pineywoods. They were eleventh in importance in the Post Oak Savannah, Blackland Prairie, and High Plains, twelfth in the Gulf Prairies and Marshes, and thirteenth in the Cross Timbers and Prairies, Edwards Plateau, and Rolling Plains. They contributed no economic value to the South Texas Plains and Trans-Pecos Mountains and Basins (Table 3).

Otter

The otter (Lutra canadensis), which occurs in eastern and upper-coastal Texas, ranked fifteenth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 20 in 1976-77 to 812 in 1980-81 (Table 1). These values represent an increase of 1,000 to 40,600 percent above the harvest level of 2 otters reported by Frye and Lay (undated) for 1941-42.

The most important ecological regions for harvesting otters were the Pineywoods and Gulf Prairies and Marshes (Fig. 5n). There was essentially no harvest of otters in the other regions, except for a high peak in the Rolling Plains during 1980-81.

Figure 5n. Regional distribution of otter harvest levels and trappers from 1976-77 to 1980-81.



Otter harvest levels in the Pineywoods for the five year period of the TPW survey exhibited a decrease for the first year, followed by a subsequent increase. Even though trapping pressure continually decreased, the otter harvest levels increased from 1978-79 to 1980-81. Harvest levels and trapping pressure in the Gulf Prairies and Marshes increased for the first three years, followed by a subsequent decline.

Otters rank fifteenth in economic importance in the State. The value of their pelts during the TPW survey ranged from \$802 in 1976-77 to \$28,200 in 1979-80 (Table 2). On a regional basis otters ranked eleventh in economic importance in the Gulf Prairies and Marshes and Rolling Plains. They were twelfth in the Pineywoods, thirteenth in the Post Oak Savannah, and fifteenth in the Cross Timbers and Prairies. Otters were of no importance in the Blackland Prairie, South Texas Plains, Edwards Plateau, High Plains, and Trans-Pecos Mountains and Basins (Table 3).

Beaver

The beaver (Castor canadensis), which occurs in eastern, east-central, coastal, south, north-central, and along the Rio Grande river of Texas, ranked fourteenth among furbearers in numbers of individuals harvested from 1976-77 to 1980-81. Harvest levels during this period varied from 2,602 in 1979-80 to 4,279 in 1978-79 (Table 1). These values represent an increase of 2,049 to 3,369 percent above the harvest level of 127 beavers reported by Frye and Lay (undated) for 1941-42.

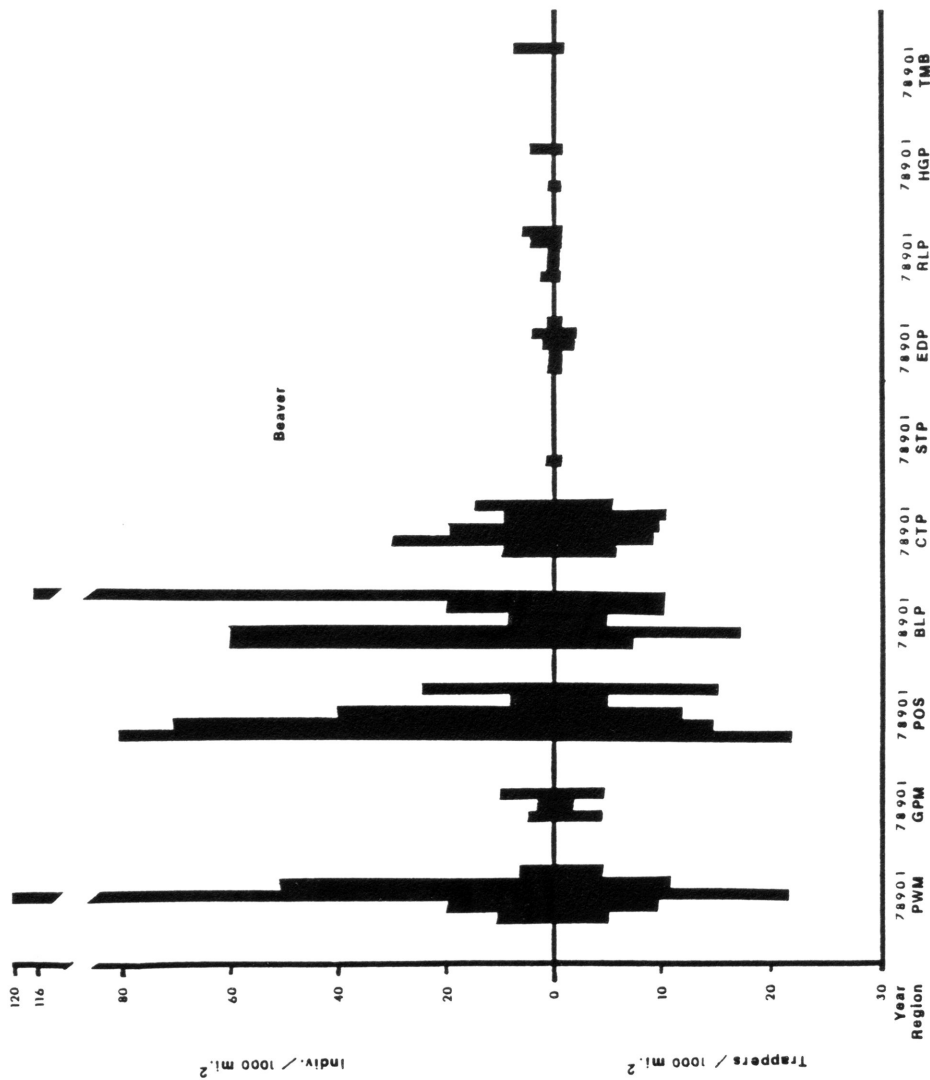
The most important ecological regions for harvesting beaver were the Pineywoods, Post Oak Savannah, Blackland Prairie, and Cross Timbers

and Prairies (Fig. 5o). Regions of secondary importance included the Gulf Plains and Marshes, Edwards Plateau, and Rolling Plains. Harvest levels were negligible in the South Texas Plains, High Plains, and the Trans-Pecos Mountains and Basins.

Harvest levels and trapping pressure in the Pineywoods, Gulf Prairies and Marshes, Cross Timbers and Prairies, and Edwards Plateau for the five year period of the TPW survey exhibited an increase for the first two or three years followed by a subsequent decline. These variables were virtually constant in the Rolling Plains. Harvest levels and trapping pressure in the Post Oak Savannah and Blackland Prairie exhibited a decrease for the first two or three years followed by a subsequent increase.

Beavers ranked thirteenth in economic importance in the State; in 1941-42 they were of little importance. The value of their pelts during the TPW survey ranged from \$18,600 in 1980-81 to \$38,500 in 1978-79 (Table 2). On a regional basis, beavers ranked ninth in economic importance in the Post Oak Savannah. They were tenth in importance in the Pineywoods and Blackland Prairie, twelfth in the Cross Timbers and Prairies, Edwards Plateau, and Trans-Pecos Mountains and Basins, thirteenth in the South Texas Plains and High Plains, and fourteenth in the Gulf Prairies and Marshes and Rolling Plains (Table 3).

Figure 50. Regional distribution of beaver harvest levels and trappers from 1976-77 to 1980-81.



DISCUSSION

During the five year period from 1976-77 to 1980-81, 175,100 licensed trappers harvested an estimated 5,684,335 furbearers with an estimated value of \$72,729,768, making the fur industry one of the most valuable natural resources in Texas. The most productive of these years, in terms of economic contribution and numbers of animals harvested, were 1978-79 and 1979-80, while the greatest economic contribution was in 1978-79. Even though there were fewer animals harvested in 1978-79, that year still produced the greatest economic returns. Analysis of fur prices (Fig. 3) reveals that species fur prices were generally higher in 1978-79 than in 1979-80, especially in the more valuable and heavily harvested species such as raccoons, ringtails, bobcats, and coyotes. This same phenomenon also occurs in the least productive years, 1976-77 and 1980-81.

The most productive ecological regions, during the five year period of the TPW survey, were the Edwards Plateau, Cross Timbers and Prairies, and Pineywoods, respectively. Regions of secondary importance included the Post Oak Savannah, Blackland Prairie, Gulf Prairies and Marshes, South Texas Plains, and Rolling Plains. The Trans-Pecos Mountains and Basins region was of minor importance, while the High Plains was the least productive region (Tables 3 and 4).

Three variables affect the Texas fur industry: fur value, number of licensed trappers, and species harvest levels. The interrelationship of these variables resulted in an increase in harvest levels for the first two or three years of the five year study, followed by a subsequent decline in the later years. This is the most prominent

Table 4. Total regional harvest levels for each species of furbearer from 1976-77 to 1980-81.

	PMD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	393,226	1	241,667	1	300,946	1	276,977	1	431,832	1	159,253	1	425,071	1	96,936	2	7,909	2	10,954	5
KingTall	3,325	12	11,422	6	3,452	9	28,752	5	73,802	4	47,993	4	257,471	2	21,303	5	1,680	7	12,536	3
Opossum	275,201	2	156,682	2	203,126	2	200,193	2	259,433	2	95,999	2	150,307	3	44,948	4	2,051	5	720	11
Red Fox	4,941	9	1,330	12	1,004	12	1,168	12	22,207	7	3,018	9	25,015	7	9,890	9	278	10	3,812	9
Gray Fox	25,474	5	5,555	8	6,875	6	8,584	6	33,202	6	7,624	7	69,759	5	12,893	8	3,533	4	20,503	2
Bobcat	11,828	7	4,966	9	5,411	7	4,765	9	20,564	8	14,292	6	10,835	9	13,070	7	1,597	8	9,821	6
Coyote	25,996	4	14,416	4	28,515	3	33,994	4	45,264	5	59,760	3	12,531	8	106,004	1	25,100	1	41,714	1
Badger	137	15	342	15	22	14	127	13	3,214	11	1,951	10	2,220	11	17,182	6	1,477	9	5,062	8
Spotted Skunk	800	13	1,379	11	1,646	10	4,320	10	7,749	10	971	11	4,046	10	1,974	11	247	11	1,191	10
Striped Skunk	22,733	6	14,265	5	21,433	4	41,083	3	126,967	3	24,797	5	102,688	4	53,032	3	4,926	3	12,213	4
Arctia	27,113	3	87,357	3	7,195	5	7,146	7	19,025	9	3,534	8	30,077	6	7,765	10	1,931	6	55	13
Fluskrat	4,522	11	11,313	7	109	13	17	14	310	14	115	12	0	-	217	15	0	-	6,083	7
Mink	9,613	8	2,613	10	1,372	11	3,097	11	667	13	0	-	44	13	568	12	206	12	0	-
Otter	758	14	778	13	22	14	0	-	20	15	0	-	0	-	470	13	0	-	0	-
Beaver	4,828	10	426	14	3,731	8	5,094	8	1,958	12	35	13	350	12	352	14	177	13	244	12
TOTAL	810,495		337,011		584,859		615,211		1,046,214		419,342		1,090,414		386,604		51,112		124,913	-

harvest level trend. This pattern is also exhibited in the number of licensed trappers and generally in the species fur values. Those species which compose the bulk of the Texas fur harvest, namely raccoons, ringtails, opossums, red foxes, gray foxes, bobcats, coyotes, and striped skunks, in particular, show this trend in their fur values.

The common occurrence of this trend in harvest levels, licensed trappers, and species fur values, suggests that the Texas fur industry is cyclic based on supply and demand. Demand is the retail market for finished and raw fur products, and supply is the number of animals harvested and sold to fur dealers. When demand for finished furs increases, the demand for raw furs increases, causing fur values to rise and a concomitant increase in fur harvests. Conversely, when demand causes fur values to decline, the number of licensed trappers and fur harvests decrease. Other variables, such as climate or weather, population size and reproduction rate, play a role in the magnitude of harvest levels.

Four other trends in harvest levels were seen: increasing, decreasing, constant, and decreasing-increasing. An increasing trend is when the harvest levels consistently increased from year to year throughout the five year study period. In light of the increasing-decreasing trend in fur prices and number of licensed trappers discussed previously, an increasing trend in harvest levels probably means that the harvests have not approached the point of maximum sustainable yield. Even when the number of licensed trappers and fur prices decrease, harvest levels do not. Therefore, the average number caught

per trapper increases, suggesting that the species is abundant. This trend is evident in raccoons and ringtails.

A decreasing harvest trend is when the harvest levels consistently decline from year to year throughout the five year study period. Even though fur values and number of licensed trappers increase for the first two or three years, followed by a subsequent decline, a decreasing trend suggests that the trapping pressure has reached a level where it is causing a decline in the species population. Even when fur values and number of licensed trappers decrease, the harvest levels continue to decline, reinforcing the premise that trapping could be causing a decline in the species population. This trend can be seen in the ringtail, bobcat, coyote, nutria, and mink.

A constant harvest trend is when harvest levels do not fluctuate significantly from year to year. This pattern is typically seen in those regions which show a low harvest level for a particular species. When a certain species is at the point where increased fur values and increased number of trappers yields no greater or lesser harvest return, then a constant trend is evident because the extra effort required to increase the harvest of a particular species is not worth the trouble to the average trapper. This pattern can be seen in the raccoon, opossum, red fox, bobcat, striped skunk, and beaver.

Although the Texas fur industry has grown in importance, our knowledge about the biology of most furbearers has not. More research needs to be directed toward the habitat requirements, reproduction, food habits, and sociology of these organisms.

Questions concerning the sociology and psychology of trappers, such as who traps and why they trap, also need to be answered. The knowledge derived from such a study would facilitate the understanding of the overall picture of the Texas fur industry. If the TPW survey is continued in the future, it should be re-designed to include questions about the trapper or that a supplementary sheet be mailed with it.

Finally, a comprehensive study on the economics, selection, marketing and use of furs would be valuable to the trapper and wildlife manager. This knowledge would allow the trapper and manager to predict fur prices, and consequently predict the trends in number of licensed trappers and harvest levels.

CONCLUSIONS

1. The Texas fur industry is cyclic, based on supply and demand.
2. The raccoon is the most important furbearer to Texas, both in numbers of animals harvested and economic productivity.
3. The Edwards Plateau, Cross Timbers and Prairies, and Pineywoods are the most important ecological regions for harvesting furbearers.
4. Number of licensed trappers and species fur values for the five year period from 1976-77 to 1980-81 exhibit an increase for the first two or three years followed by a subsequent decline.
5. Harvest levels for particular species in various ecological regions followed five basic trends.

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APPENDIX I. REGIONAL HARVEST LEVELS BY YEAR FOR EACH SPECIES OF FUR-BEARER FROM 1976-77 TO 1980-81.

Appendix Ia. Regional harvest levels for each species of furbearer in 1976-77.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	47,661	1	35,181	1	67,410	1	62,972	1	92,407	1	27,241	1	77,115	1	17,791	1	715	2	1,637	5
Ringtail	66	12	220	10	1,050	8	4,455	5	16,488	3	5,902	3	50,077	2	4,672	2	245	5	2,055	4
Opossum	24,537	2	24,701	2	37,369	2	34,853	2	34,219	2	10,817	2	26,581	3	4,881	3	4	5	0	-
Red Fox	534	9	132	11	97	12	308	10	2,206	9	467	9	1,618	9	1,220	9	41	7	616	7
Gray Fox	5,217	3	903	6	1,828	6	1,799	5	7,161	5	1,021	7	9,425	5	2,193	5	245	5	2,924	3
Bobcat	964	8	594	7	719	9	994	7	3,530	7	1,644	6	2,913	8	1,869	7	204	6	3,040	2
Coyote	2,359	5	1,453	4	3,130	4	5,089	4	5,014	6	5,002	4	5,312	6	10,736	2	2,125	1	5,865	1
Baquer	0	-	0	-	0	-	0	-	100	13	433	10	571	10	553	10	266	4	468	8
Spotted Skunk	258	10	242	9	194	11	326	9	542	10	173	11	209	11	38	12	20	8	200	9
Striped Skunk	1,842	6	2,201	3	4,841	3	6,271	3	14,642	4	3,911	5	11,577	4	10,144	3	633	3	835	6
Mutria	3,599	4	1,145	5	2,780	5	1,799	5	2,327	8	883	8	5,198	7	725	9	0	-	0	-
Muskkrat	69	13	0	-	0	-	17	11	0	-	0	-	0	-	0	-	0	-	0	-
Beaver	1,567	7	286	8	350	10	754	8	321	11	0	-	19	13	0	-	0	-	0	-
Other	0	-	0	-	0	-	0	-	20	14	0	-	0	-	0	-	0	-	0	-
Beaver	224	11	0	-	1,361	7	1,080	6	261	12	35	12	38	12	57	11	41	7	0	-

Appendix Ib. Regional harvest levels for each species of furbearer in 1977-78.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CIP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	71,588	1	44,417	1	65,581	1	53,656	1	101,353	1	29,794	1	85,594	1	22,096	1	953	3	2,820	6
Ringtail	541	10	513	7	856	9	4,840	4	14,541	4	6,160	4	42,405	2	2,762	2	567	4	2,941	4
Opossum	37,330	2	20,511	2	39,954	2	30,741	2	47,754	2	12,713	3	27,335	3	9,431	3	463	5	282	9
Red Fox	1,008	9	257	9	285	10	371	10	1,981	9	708	8	3,995	7	2,812	7	103	9	20	11
Gray Fox	5,161	4	685	6	1,031	8	1,701	7	5,000	7	1,082	7	11,708	5	3,185	5	463	5	3,706	3
Bobcat	2,875	6	770	5	1,536	5	1,177	9	2,488	8	3,818	5	2,200	8	2,613	8	180	7	1,853	7
Coyote	6,095	3	3,395	3	4,542	4	8,677	3	8,575	5	16,176	2	1,644	10	12,541	2	1,983	1	6,224	1
Badger	0	-	57	12	22	13	22	13	241	12	295	10	480	11	697	9	154	8	383	8
Spotted Skunk	98	14	342	8	219	12	349	11	942	10	98	11	2,073	9	274	10	51	10	40	10
Striped Skunk	2,826	7	2,425	4	4,695	3	3,924	5	15,845	3	3,739	6	14,691	4	8,634	4	463	5	2,860	5
Arctia	4,448	5	3,395	3	1,251	6	1,919	6	3,551	6	571	9	7,207	6	2,812	6	1,931	2	20	11
Fluskrat	492	12	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	6,083	2
Link	1,204	8	200	10	241	11	327	12	121	13	0	-	25	13	75	11	206	6	0	-
Otter	246	13	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
beaver	516	11	86	11	1,141	7	1,221	8	604	11	0	-	51	12	25	12	0	-	0	-

Appendix 1c. Regional harvest levels for each species of furbearer in 1978-79.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	83,944	1	52,112	1	66,163	1	51,320	1	92,258	1	38,363	1	106,097	1	24,171	2	1,146	2	1,760	4
Ringtail	321	12	314	9	816	8	6,718	4	17,568	4	20,292	4	79,350	2	7,849	4	50	9	1,115	5
Opossum	56,186	2	35,021	2	41,761	2	32,645	2	66,536	2	27,149	2	46,202	3	9,052	3	349	5	0	-
Red Fox	1,045	11	157	10	199	11	230	9	15,099	5	1,143	8	4,564	7	4,556	7	100	8	176	8
Gray Fox	7,207	6	864	7	1,369	6	1,124	5	12,501	6	2,458	7	22,770	4	3,038	8	473	4	2,610	2
Bobcat	2,465	9	1,492	7	862	7	920	8	10,499	7	3,601	6	2,550	8	2,405	9	125	7	968	6
Coyote	7,636	5	3,403	5	10,070	3	6,718	4	12,501	6	13,973	4	1,530	9	47,186	1	3,787	1	6,717	1
Badger	0	-	26	13	0	-	51	12	2,677	10	625	10	561	11	4,557	6	324	6	440	7
Spotted Skunk	214	13	366	8	420	10	1,022	6	4,055	9	108	11	612	10	32	11	0	-	59	9
Striped Skunk	9,914	3	2,513	6	6,160	4	9,913	3	21,233	3	5,326	5	22,515	5	7,660	5	498	3	1,819	3
Mutria	8,574	4	28,242	3	1,391	5	971	7	10,034	8	668	9	9,842	6	443	10	0	-	0	-
Muskrat	1,876	10	8,219	4	0	-	0	-	77	12	0	-	0	-	0	-	0	-	0	-
Beaver	2,733	8	314	9	44	12	204	10	52	13	0	-	0	-	0	-	0	-	0	-
Otter	134	14	105	11	22	13	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Beaver	2,787	7	52	12	685	9	179	11	468	11	0	-	76	12	32	11	0	-	0	-

Appendix Id. Regional harvest levels for each species of furbearer in 1979-80.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	86,486	2	71,183	1	59,715	1	37,846	1	90,010	1	35,738	1	100,932	1	18,086	3	2,983	2	1,635	6
Ringtail	665	11	10,375	4	372	8	9,619	4	17,617	4	8,868	4	52,636	2	3,437	7	818	5	1,196	7
Opossum	38,802	1	61,039	2	55,144	2	56,127	2	69,159	2	28,858	2	31,296	4	14,235	4	818	5	20	9
Red Fox	1,358	9	576	11	175	9	161	12	849	10	287	10	13,059	6	926	11	34	9	0	-
Gray Fox	5,430	5	2,478	7	1,903	5	1,209	7	5,164	6	1,280	7	18,405	5	2,340	9	1,824	4	3,210	2
Bobcat	3,594	7	1,527	8	1,137	6	618	9	2,500	7	2,981	6	1,970	9	4,704	6	648	7	1,834	5
Coyote	6,389	3	4,582	6	7,218	3	6,583	5	8,579	5	15,021	3	2,411	8	20,256	1	12,717	1	14,473	1
Badger	106	14	259	15	0	-	54	13	138	12	210	11	440	11	10,530	5	733	6	1,993	4
Spotted Skunk	106	14	346	13	372	8	1,370	6	1,101	9	592	9	503	10	1,536	10	0	-	857	8
Striped Skunk	5,537	4	5,793	5	2,100	4	15,153	3	50,235	3	6,937	5	39,891	3	18,306	2	2,012	3	2,033	3
Arctia	4,392	6	19,424	3	919	7	1,155	8	1,537	8	1,128	8	5,282	7	3,339	8	0	-	0	-
Muskrat	373	12	1,095	9	109	11	0	-	0	-	115	12	0	-	171	12	0	-	0	-
Mink	1,837	8	605	10	131	10	510	10	115	13	0	-	0	-	0	-	0	-	0	-
Otter	160	13	548	12	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Beaver	1,145	10	288	14	131	10	403	11	275	11	0	-	126	12	97	13	136	8	0	-

Appendix Ie. Regional harvest levels for each species of furbearer in 1980-81.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	103,547	1	38,774	1	42,077	1	51,117	1	55,804	1	28,117	1	55,333	1	14,792	2	2,112	2	3,102	5
Ringtail	1,712	9	0	358	11	3,120	5	7,588	5	6,771	4	33,010	2	2,583	5	0	0	-	5,229	3
Opossum	68,346	2	15,410	3	28,878	2	45,787	2	41,765	2	16,462	2	18,893	3	7,349	4	176	6	418	9
Red Fox	996	10	208	10	248	12	98	11	2,072	7	413	8	1,779	7	376	12	0	-	2,998	6
Gray Fox	2,459	6	625	8	744	7	2,751	6	3,356	6	1,783	7	7,451	5	2,137	6	528	4	8,052	2
bobcat	1,930	8	583	9	1,157	5	1,056	10	1,547	9	2,248	6	1,202	9	1,479	7	440	5	2,126	7
Coyote	3,517	4	1,583	5	3,555	4	6,927	3	10,595	4	9,588	3	1,634	8	15,286	1	4,488	1	8,435	1
Badger	31	14	0	0	0	-	0	-	58	13	388	9	168	11	845	8	0	-	1,778	8
Spotted Skunk	124	13	83	12	441	9	1,253	9	1,109	10	0	-	649	10	94	14	176	6	35	11
Striped Skunk	2,614	5	1,333	6	3,637	3	5,822	4	25,012	3	4,884	5	14,014	4	8,288	3	1,320	3	4,671	4
Nutria	6,100	3	35,151	2	854	6	1,302	8	1,576	8	284	10	2,548	6	446	11	0	-	35	11
Muskrat	1,712	9	1,999	4	0	-	0	-	233	12	0	-	0	-	47	15	0	-	0	-
mink	2,272	7	1,208	7	606	8	1,302	6	58	13	0	-	0	-	493	9	0	-	0	-
Otter	218	11	125	11	0	-	0	-	0	-	0	-	0	-	470	10	0	-	0	-
Beaver	156	12	0	-	413	10	2,211	7	350	11	0	-	24	12	141	13	0	-	244	10

APPENDIX II. REGIONAL ECONOMIC LEVELS BY YEAR FOR EACH SPECIES OF
FURBEARER FROM 1976-77 TO 1980-81.

Appendix IIa. Regional economic levels for each species of furbearer in 1976-77.

	PWD	Rank	GPM	Rank	PUS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	595,762	1	439,762	1	842,625	1	787,150	1	1,155,087	1	340,512	1	963,937	1	222,387	1	8,937	3	20,462	5
Ringtail	387	12	991	10	4,725	9	20,048	6	74,194	5	26,557	4	225,348	2	21,023	6	1,103	7	9,246	6
Opossum	36,805	4	37,052	3	56,084	2	52,280	4	51,328	7	16,226	7	39,872	7	7,322	8	368	9	0	-
Red Fox	20,551	7	5,086	7	3,742	10	11,873	8	84,946	4	17,983	6	62,312	6	46,985	5	1,575	5	23,789	4
Gray Fox	117,389	2	20,308	4	41,123	5	40,482	5	161,116	3	22,977	5	212,067	3	49,340	4	5,514	4	65,783	3
bobcat	62,673	3	38,636	2	46,761	3	64,597	3	229,463	2	106,866	2	189,358	4	121,465	3	13,279	2	197,626	1
Coyote	31,846	5	19,615	5	42,260	4	68,704	2	67,696	6	67,523	3	71,717	5	144,931	2	28,682	1	79,175	2
badger	0	-	0	-	0	-	0	-	501	14	2,163	10	2,856	10	2,765	10	1,328	6	2,339	7
Spotted Skunk	387	12	363	11	292	12	488	12	812	12	259	12	314	12	57	12	31	10	301	9
Striped Skunk	2,303	9	2,752	8	6,052	8	7,839	10	18,303	8	4,889	9	14,471	9	12,680	7	792	8	1,044	8
lutria	26,091	6	8,300	6	20,158	6	13,044	7	16,869	9	6,400	8	37,686	8	5,253	9	0	-	0	-
fluskrat	430	11	0	-	0	-	107	13	0	-	0	-	0	-	0	-	0	-	0	-
link	14,102	8	2,576	9	3,150	11	6,786	11	2,888	10	0	-	171	13	0	-	0	-	0	-
Otter	0	-	0	-	0	-	0	-	802	13	0	-	0	-	0	-	0	-	0	-
beaver	2,015	10	0	-	12,249	7	9,716	9	2,347	11	312	11	343	11	515	11	368	9	0	-

Appendix IIb. Regional economic levels for each species of furbearer in 1977-78.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	1,145,408	1	710,672	1	1,049,296	1	858,496	1	1,621,648	1	476,704	1	1,369,504	1	353,536	1	15,248	2	45,420	4
Kingtail	4,055	11	3,851	9	6,418	10	36,301	6	109,058	5	46,197	4	318,039	3	20,715	6	4,249	6	22,057	6
Opossum	65,327	5	35,894	4	69,920	4	53,798	4	83,569	6	22,247	7	47,836	6	16,504	8	811	9	493	10
Red Fox	40,304	6	10,218	7	11,408	6	14,824	7	79,228	7	28,340	6	159,808	4	112,472	4	4,120	7	804	9
Gray Fox	147,083	3	19,511	6	29,389	5	48,467	5	142,500	3	30,848	5	333,666	2	90,772	5	13,210	3	105,630	2
Bobcat	158,141	2	42,361	3	84,474	3	64,751	3	136,834	4	209,979	3	120,994	5	143,698	3	9,916	5	101,920	3
Coyote	121,894	4	67,894	2	90,836	2	173,548	2	171,498	2	323,526	2	32,872	8	250,822	2	39,656	1	124,482	1
Badger	0	-	285	13	109	13	109	13	1,207	12	1,476	10	2,402	11	3,483	10	772	10	1,913	8
Spotted Skunk	1,180	14	4,108	8	2,633	11	4,186	11	11,304	10	1,181	11	24,882	9	3,285	11	618	12	483	11
Striped Skunk	4,239	10	3,637	10	7,043	9	5,887	10	23,768	8	5,609	8	22,037	10	12,952	9	695	11	4,290	7
Nutria	28,913	7	22,066	5	8,129	7	12,471	8	23,080	9	3,710	9	46,843	7	18,277	7	12,533	4	131	12
Huskrat	2,703	13	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	33,457	5
Mink	10,838	8	1,797	11	2,172	12	2,943	12	1,087	13	0	-	228	13	672	12	1,854	8	0	-
Otter	6,881	9	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Beaver	3,013	12	599	12	7,966	8	8,547	9	4,227	11	0	-	354	12	174	13	0	-	0	-

Appendix III. Regional economic levels for each species of furbearer in 1978-79.

	PWD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	2,140,572	1	1,328,856	1	1,687,156	1	1,308,660	1	2,352,579	1	978,256	1	2,705,473	1	616,360	2	29,223	2	44,880	4
Ringtail	2,411	13	2,356	12	6,123	10	50,384	5	131,758	7	152,188	4	595,123	3	58,870	6	373	9	8,360	5
Opossum	140,465	5	87,552	4	104,404	3	81,612	3	166,340	6	67,873	6	115,506	6	22,629	8	872	8	0	-
Red Fox	47,020	7	7,065	8	8,946	8	10,336	8	679,450	3	51,430	7	205,384	5	205,038	3	4,486	5	7,920	6
Gray Fox	252,262	2	30,229	7	47,918	5	39,326	6	432,538	4	86,040	5	769,939	2	106,323	5	16,569	3	91,374	2
Bobcat	209,525	3	126,811	3	73,236	4	78,191	4	892,440	2	306,102	3	216,733	4	204,425	4	10,591	4	82,280	3
Coyote	171,814	4	76,558	5	226,584	2	151,155	2	281,275	5	314,404	2	34,423	9	1,061,685	1	85,214	1	151,139	1
Badger	0	-	131	15	0	-	254	13	13,384	10	3,127	10	2,805	10	22,783	7	1,619	6	2,200	8
Spotted Skunk	536	14	916	13	1,049	11	2,555	10	10,138	11	270	11	1,530	11	79	12	0	-	147	9
Striped Skunk	19,827	10	5,025	9	12,321	6	19,825	7	42,465	9	10,653	8	45,029	8	15,319	9	997	7	3,637	7
Nutria	12,161	6	204,752	2	10,083	7	7,040	9	72,744	8	4,847	9	71,356	7	3,212	10	0	-	0	-
Muskrat	11,722	11	51,366	6	0	-	0	-	484	14	0	-	0	-	0	-	0	-	0	-
Beaver	29,379	8	3,376	11	476	13	2,198	11	555	13	0	-	0	-	0	-	0	-	0	-
Otter	5,359	12	4,188	10	885	12	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Beaver	25,079	9	471	14	6,162	9	1,610	12	4,212	12	0	-	688	12	285	11	0	-	0	-

Appendix 11d. Regional economic levels for each species of furbearer in 1979-80.

	PMD	Rank	GPM	Rank	POS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	1,729,720	1	1,423,660	1	1,194,300	1	1,156,920	1	1,800,200	1	714,760	1	2,018,640	1	361,720	1	59,660	3	32,700	4
Ringtail	3,827	12	59,656	7	2,138	9	55,308	4	101,295	7	40,989	5	302,655	4	19,762	10	4,705	6	6,878	6
Opossum	222,005	3	152,597	3	137,860	2	140,317	2	172,897	3	72,145	4	78,241	7	35,588	8	2,046	8	50	9
Red Fox	61,092	6	25,938	8	7,875	7	7,254	9	38,191	8	12,901	8	587,668	3	41,679	7	1,534	9	0	-
Gray Fox	190,060	4	86,744	5	66,605	5	42,318	6	181,440	2	44,814	6	644,161	2	81,900	4	63,843	2	112,336	3
Bobcat	233,584	2	99,281	4	73,931	4	40,170	7	162,519	4	193,784	3	128,076	5	305,786	3	42,107	4	119,216	2
Coyote	100,620	5	72,170	6	113,688	3	103,676	3	135,118	6	236,585	2	37,967	9	319,025	2	200,301	1	227,953	1
Badger	666	14	1,621	14	0	-	336	13	860	13	1,314	11	2,751	10	65,812	5	4,581	7	12,459	5
Spotted Skunk	266	15	865	15	930	12	3,426	11	2,753	10	1,481	10	1,258	11	3,839	11	0	-	2,143	8
Striped Skunk	16,610	9	17,378	10	6,300	8	45,460	5	150,704	5	20,812	7	119,672	6	54,917	6	6,035	5	6,100	7
Nutria	38,432	7	169,960	2	8,039	6	10,109	8	13,448	9	9,866	9	46,221	8	29,220	9	0	-	0	-
Muskrat	2,702	13	7,940	11	793	13	0	-	0	-	831	12	0	-	1,237	12	0	-	0	-
Mink	19,745	8	6,506	12	1,411	10	5,488	10	1,233	12	0	-	0	-	0	-	0	-	0	-
Otter	6,389	11	21,902	9	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Beaver	8,585	10	2,161	13	984	11	3,023	12	2,064	11	0	-	943	12	731	13	1,023	10	0	-

Appendix IIe. Regional economic levels for each species of furbearer in 1980-81.

	PWD	Rank	GPM	Rank	PUS	Rank	BLP	Rank	CTP	Rank	STP	Rank	EDP	Rank	RLP	Rank	HGP	Rank	TMB	Rank
Raccoon	1,139,017	1	426,514	1	462,847	1	562,287	1	613,844	1	309,287	1	608,663	1	162,712	2	23,232	3	34,122	6
Ringtail	12,411	9	0	-	2,597	10	22,617	6	55,016	6	49,088	4	239,271	2	18,725	5	0	-	37,907	5
Opossum	102,920	3	23,115	5	43,317	4	68,681	4	62,648	5	24,693	6	28,340	7	11,024	8	264	7	627	10
Red Fox	16,931	8	3,540	9	4,216	9	1,670	12	35,228	8	7,029	8	30,239	6	6,387	9	0	-	50,961	4
Gray Fox	63,927	5	16,243	6	19,344	5	71,530	3	87,267	4	46,362	5	193,738	3	55,554	4	13,728	4	209,352	1
Bobcat	125,427	2	37,900	3	75,226	2	68,656	5	100,547	3	146,140	3	78,120	4	96,151	3	28,600	2	138,209	3
Coyote	68,580	4	30,861	4	69,317	3	135,077	2	206,595	2	186,958	2	31,873	5	298,067	1	87,516	1	164,490	2
Badger	163	15	0	-	0	-	0	-	306	14	2,035	10	883	11	4,438	10	0	-	9,333	8
Spotted Skunk	529	14	354	12	1,874	12	5,324	11	4,714	10	0	-	2,758	9	399	12	748	6	148	12
Striped Skunk	5,229	11	2,665	11	7,275	7	11,643	8	50,025	7	9,769	7	28,027	8	16,577	6	2,640	5	9,342	7
Mutria	53,376	6	307,571	2	7,474	6	11,392	10	13,791	9	2,488	9	22,294	10	3,903	11	0	-	305	11
Muskrat	12,410	10	14,494	7	0	-	0	-	1,693	12	0	-	0	-	340	13	0	-	0	-
Mink	20,448	7	10,870	8	5,456	8	11,717	7	525	13	0	-	0	-	4,438	10	0	-	0	-
Otter	6,100	12	3,498	10	0	-	0	-	0	-	0	-	0	-	13,149	7	0	-	0	-
Beaver	817	13	0	-	2,170	11	11,606	9	1,839	11	0	-	126	12	740	11	0	-	1,281	9