JOB FINAL REPORT

State: California

Project Number: W-54-R-12 Project Title: Nongame Wildlife Investigations

Job Number: I - 4 Job Title: Ringtail Distribution Study

Period Covered: July 1, 1979 - June 30, 1980 Job Type: Survey and Inventory

SUMMARY :

Information on current distribution of ringtail cats was collected from sighting records, museum specimens, and recent literature; efforts yielded 446 occurrence reports, representing 595 ringtails.. Present distribution was determined in 49 counties extending throughout most of California with the exception of the Modoc Plateau, Antelope Valley and portions of the San Joaquin Valley.

Expansions of the ringtail's range, as described by Grinnell et al. (1937) were noted in the Mojave and Colorado Desert, Sacramento Valley, portions of the San Joaquin Valley, northern Mono County, high Sierra Nevada south of Lake Tahoe, and in the northeastern portion of the state.. Historical records indicate that ringtails occurred in these areas of range extension during Grinnell's era.

Occurrence reports indicate greatest ringtail abundance along riparian areas in northern California and Sierra Nevada foothills, Ringtail occurrences were scarce in the Mojave and Colorado Deserts, the east slope of the Sierra Nevada, the San Joaquin Valley, and northeastern California.

BACKGROUND:

In 1967 the State Legislature listed the ringtail (Bassariscus astutus) as a fully protected mammal; prior to this it was a harvested furbearer, Information on the distribution and abundance of ringtails in California is scarce. The accepted distribution of ringtails in California prior to this-study was described in "Furbearing Mammals of California" by Grinnell et al. (1937). Few additional distribution studies have been conducted in California subsequent to this work.

A cooperative research program, the California Carnivore Study Group, was initiated in 1972 to survey the status and distribution of furbearers in California. The ringtail was one of six species given first priority for investigation. The major cooperating agencies at that time included the U.S. Forest Service., National Park Service, California Department of Fish and Game, and U.C. Berkeley, Contributions of this program include two reports by Schempf and White (1974, 1977) on the distribution and abundance of several furbearers, including the ringtail, on National Park Service and United States Forest Service lands.. Swick (1974) provided additional information on distribution and abundance of selected furbearers by interviewing licensed fur trappers.

This project, conceived and initiated by Linda Belluomini and Dr.. Gene Trapp, California State University, Sacramento, continues the efforts of this cooperative research program to update the work of Grinnell et al. (1937).

OBJECTIVES:

1. Determine distribution of ringtails in California.
2. Locate areas of concentration of ringtail populations.
3. Determine trends in population size by comparing past and present data.

PROCEDURES:

Data on ringtails were gathered in two ways:

1) Sighting reports were solicited from applicable state and federal agencies and knowledgeable field biologists (Appendix A)..
2) Telephone interviews were conducted with personnel from Natural History museums, California Universities and Colleges, and appropriate state and federal agencies.

Data collected were added to ringtail sightings previously reported by Schempf and White (1974, 1977) and Swick (1974)(Appendix B). Ringtail occurrance reports from 1960 to 1980 were tabulated and mapped. Current distribution patterns were compared to historical records.

FINDINGS:

Distribution

A total of 446 reported locations, representing 595 ringtails, were obtained during this study, The majority of these were found within the range limits previously designated by Grinnell et al. (1937) (Figure 1). One hundred and eighteen occurrences of ringtails were reported outside of this range. The most notable range extensions occurred in the Mojave Desert, Sacramento Valley, San Joaquin Valley, and the north-, east portion of the state.

Occurrences of ringtails were reported in 49 of 58 counties; Grinnell et al. (1937) obtained occurrences in only 37 counties (Table 1). Neither Grinnell et al. nor this study were able to contribute occurrence records for 8 counties.. Of these counties, data from annual Fish and Game trapping records indicate that ringtails have never been taken from Alpine, Orange or San Francisco counties;. ringtails have not been reported taken since the 1940's in Kings, Marin and Santa Clara counties., In the remaining two counties, Merced and Stanislaus, trapping records indicate ringtails were. taken after 1960 (Table 1).

Elevational Distribution Present data on elevational distribution of ringtails closely compares with past reports; ringtails occur from sea level (Grinnell et al. 1937) to 8800 ft. (Schempf and White 1977).

Subspecies Grinnell et al. (1937) described 3 subspecies of ringtails occurring in California. The California ringtail (B. a. raptor) was described to occur along the western slope of the Sierra Nevada and-the Pacific drainage slope from the Oregon border to Ventura County where this race intergrades with the San Diego race., Extensions of this range have been noted in several areas, including the San Joaquin Valley, Sacramento Valley, west slope of the Sierra Nevada in El Dorado, Fresno and Tulare counties, and the northeastern portion of the state (Figure 2).

According to Grinnell et al. (1937) the range of the San Diego ringtail (B. a. octavus) extends primarily along the Pacific slope of southwestern California from-Ventura County

to the southern border of the state. Current data indicate an expansion of this range into Imperial County, eastern Riverside County, and southwestern San Bernardino County (Figure 2).

The Nevada ringtail (B. a. nevadensis) was thought to occur east of the Owens River, primarily in Inyo County. Data obtained during this study extend this previously described range into Owens Valley near Bishop and Coso junction and into northern Mono County (Figure 2). It appears that the Sierra Crest is still the western barrier for this race. Ringtails occurring in northeastern San Bernardino County were also thought to be the Nevada ringtail; one of these occurrences was a museum specimen identified as B. a. nevadensis.

Ringtails occurring in the Colorado Desert also could be classified as one of two subspecies described in Hall and Kelson (1959), B. a. willetti or B. a. yumanensis (Figure 2). These subspecies were described subsequent to the publication by Grinnell et al. (1937).

Abundance

The affinity of ringtails for riparian areas is confirmed by the abundance of sightings along many of the major rivers of California: Eel, Feather, Klamath, Kaweah, Mad, Merced, Sacramento, Salmon and Trinity rivers.

Data indicate that northern California still contains the highest density of ringtails, as it did during Grinnell's era., Current ringtail reports were most abundant in Tehama County with lesser but notable numbers found in Butte, Humboldt, Plumas, Shasta, Siskiyou, and Trinity counties, Tehama County had the only 2 occurrence reports representing over 10 ringtails at a single location; these occurred in Manton and along the Sacramento River, in which 40 and 50 ringtails were sighted, respectively.

An abundance of ringtail sightings were reported in the northern Sacramento Valley near Butte Creek and Sutter Buttes. This population, which is well outside of the range described by Grinnell et al. (1937), was first mentioned in the literature by Naylor and Wilson (1965), corroborated by T. Stone of California Department of Fish and Game in the 1970's, and further described by L. Belluomini (M.S. thesis in prep.).

The number of occurrence reports of ringtails obtained.by Grinnell et al. (1937) and this study were compared for each county (Table 1). There was a relative increase in numbers over the data of Grinnell et al. in seven counties: Inyo, Mariposa, Plumas, Riverside, Siskiyou, Sutter, and Trinity counties (Table 1). In selecting these counties, consideration was given to the fact that current efforts yielded a total of three times as many occurrence reports as cited by Grinnell et al.

The fewest number of ringtail occurrence reports were found in the Mojave and Colorado Deserts, the east slopes of the. Sierra Nevada,. the San Joaquin Valley and northeastern California.

ANALYSIS:

The distribution of ringtails in California is considerably more extensive than previously believed. Early authorities agreed that ringtails were absent from most of the Central Valley and the Mojave Desert (Grinnell et al. 1937, Hall and Kelson 1959, Ingles 1965). Current data proves that ringtails do exist in those seemingly unsuitable areas.

Historical trapping and occurrence records indicate that ringtails occurred during Grinnell's era in all of the areas determined as range extensions. Therefore, these

range extensions are probably not true expansions in range of the ringtail, rather, they reflect a greater utilization of available information. It is very difficult to determine whether any true extensions of ringtail range have occurred without complete and reliable historical information on ringtail distribution.

To our knowledge, ringtails have never been reported to occur in Alpine, Orange, and San Francisco counties. However, there is suitable habitat in Alpine and Orange counties that may support small populations of ringtail. Although Marin and Santa Clara counties have no record of ringtail occurrence since the 1940's, current sightings have been reported near their boundaries.

Apparently, the only unsuitable habitat. for ringtails in California occurs in the Northern Juniper Woodlands (Munz 1959:18) and the highly developed agricultural portions of the San Joaquin Valley.

Although riparian areas, the preferred habitat of ringtails, are being degraded throughout the state, ringtail populations do not appear to be threatened at present. Abundance data suggest that ringtail numbers are either stable or increasing.

Because the efforts of past and present studies in gathering data were not uniform, a precise estimate of population trends was not possible.. This inconsistency does not negate the value of the current data, but should be taken into consideration.

RECOMMENDATIONS:

1. A census method should be developed to determine and monitor ringtail densities in representative habitat types, especially in riparian areas where continued habitat degradation occurs.

2. Remove the ringtail from the list of fully protected mammals.

3. Determine the current distribution of other mammals of concern, by conducting studies similar to this report.

LITERATURE CITED:

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Prepared by: Sue Orloff
Graduate Assistant

Approved by: Robert D. Mallette
Nongame Wildlife Coordinator

Approved by: for Eldridge G. Hunt, Chief
Wildlife Management Branch

Date: 11-10-80

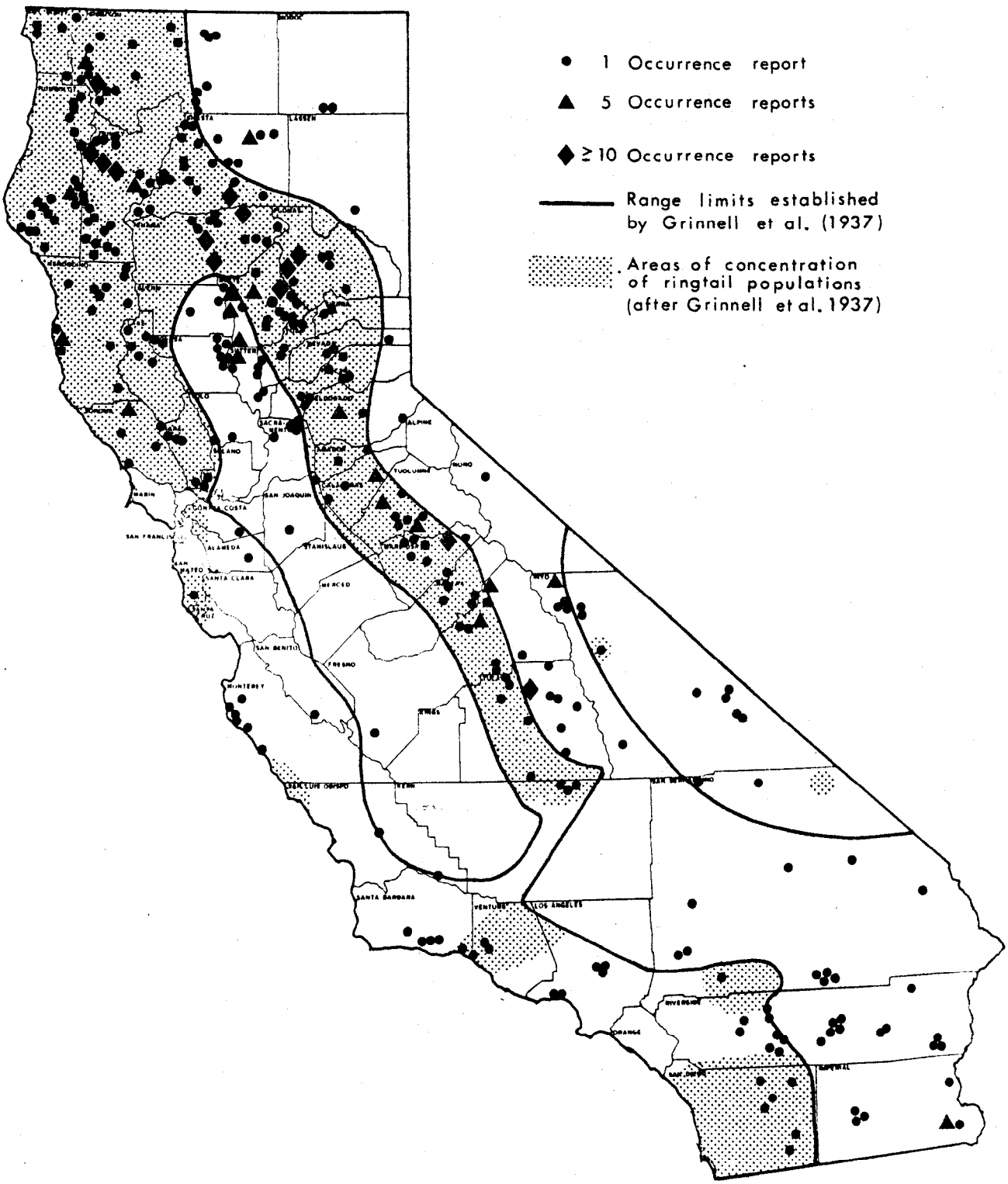


Figure 1. Distribution of ringtail occurrence reports in California (1960-1980).

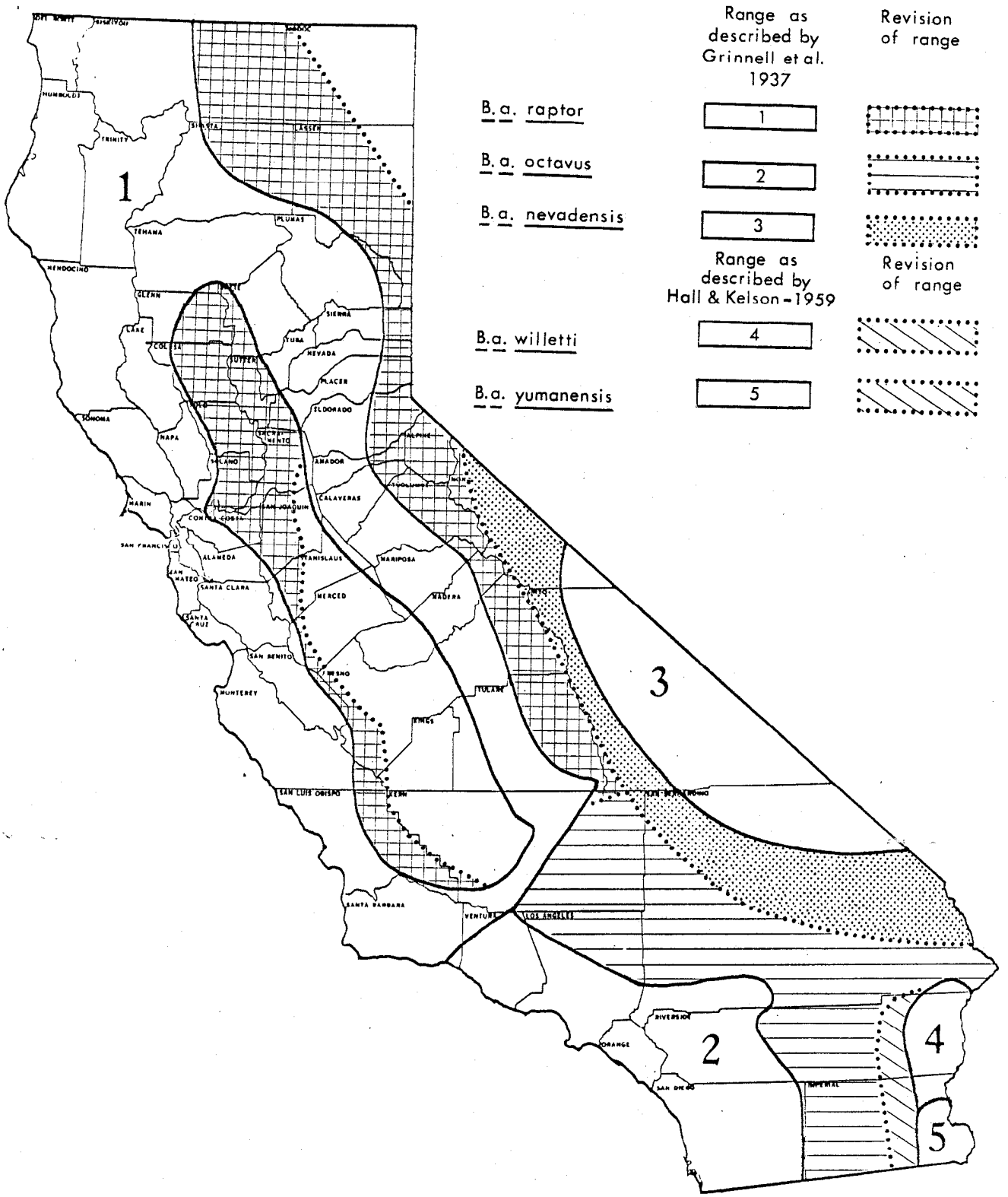


Figure 2. Present distribution of the subspecies of ringtail (Bassariscus astutus) in California.

Table 1. County distribution and licensed fur trapper take of ringtails in California.

County	Number of Occurrence Reports Grinnell et al. (1937)	Number of Occurrence Reports This Study	Average Annual Take per County[1/]	Range of Take	Number Seasons Ringtail Taken	Record of Ringtail Take After 1960
Alameda	1	1	0.10	3	1	
Alpine	0	0	-	-	-	
Amador	5	2	4.34	1-45	7	
Butte	11	41	59.17	4-219	29	X
Calaveras	5	7	10.55	1-92	14	X
Colusa	4	7	3.03	1-9	13	X
Contra Coasta	0	1	0.31	1-5	3	
Dal Norte	1	5	7.28	1-48	16	X
El Dorado	4	7	11.66	1-66	15	X
Fresno	5	17	17.31	1-93	20	X
Glenn	1	2	5.66	1-20	25	X
Humboldt	27	23	30.03	1-160	28	X
Imperial.	0	10	0.66	1-11	7	
Inyo	1	17	0.97	1-8	9	
Kern	5	3	0.83	1-9	8	
Kings	0	0	0.10	3	1	
Lake	5	5	2.90	1-23	16	X
Lassen	1	1	0.75	1-17	6	
Los Angeles	0	5	0.83	1-5	9	
Madera	4	2	7.48	1-44	11	
Marin	0	0	0.03	1	1	
Mariposa	3	17	19.83	3-101	18	X
Mendocino	16	17	11.24	1-47	25	X
Merced	0	0	1.28	1-32	4	X
Modoc	0	2	0.28	1-6	3	X
Mono	0	1	0.24	1-2	5	
Monterey	0	6	0.41	1-7	3	
Napa	2	6	0.21	1-2	4	
Nevada	4	3	11.0	1-53	25	X
Orange	0	0	-	-	-	
Placer	10	7	15.62	1-75	21	X
Plumas	1	25	6.97	1-28	22	X
Riverside	0	19	1.0	1-11	6	
Sacramento	1	4	0.379	1-6	5	X
San Benito	0	1	-	-	-	
San Bernardino	4	13	1.10	1-7	10	X
San Diego	3	6	0.62	2-12	3	
San Francisco	0	0	-		-	
San Joaquin	0	2	0.86	1-22	3	X
San Luis Obispo	2	2	0.03	1	1	
San Mateo	0	1	-		-	
Santa Barbara	0	6	0.45	1-10	3	
Santa Clara	0	0	0.03	1	1	
Santa Cruz	1	0	-		-	
Shasta	10	36	57.03	1-234	28	X
Sierra	1	2	1.79	1-13	14	X
Siskiyou	6	33	12.97	1-60	25	X
Solano	1	2	0.07	2	1	
Sonoma	10	8	0.93	1-9	9	
Stanislaus	0	0	2.62	1-18	12	X
Sutter	0	10	1.14	1-6	15	X
Tehama	11	109	11.97	1-48	25	X
Trinity	8	55	37.59	3-108	29	X
Tulare	6	20	14.17	1-103	15	X
Tuolumne	4	15	19.52	1-126	13	X
Ventura	2	2	0.66	1-7	7	
Yolo	0	1	0:66	1-13	5	
Yuba	4	6	6.14	1-48	22	X
	190	595				

1/ Reported take divided by 29 seasons (1938-1966) of trapping records

sighting report on
wilderness travelers

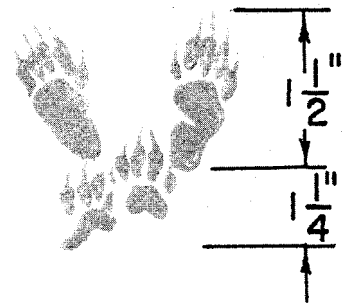
help is needed for protection and management

APPENDIX A

Have you seen any of these forest and wilderness travelers? Federal and state agencies need your sightings of these animals to establish programs of protection and management. Your cooperation and' assistance is appreciated. Please report any sightings to the Wildlife Management Branch, Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814. Complete the form on the back of this page, fold and affix stamp and mail. Thanks for your help!

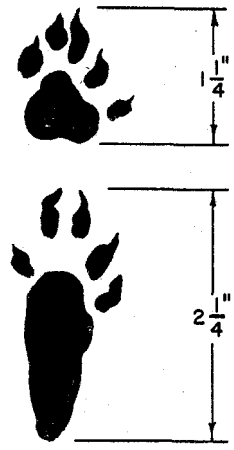
Spotted Skunk, Civet Cat, or Polecat:

The spotted skunk is smaller than its striped relative. It is about 13 inches in length and weights approximately 1 to 1½ pounds. Rather than two white stripes starting at the top of the head and running to the base of the tail, the spotted skunk has black and white bands which extend onto the side of the head. The white plume at the end of the tail is diagnostic. Due to its nocturnal habits the spotted skunk is rarely seen.



Ringtail, Cacomistle, Miner's Cat, Civet Cat:

Contrary to earlier beliefs recent information indicates that the ringtail is a relatively common furbearing species in California. It is about 28 inches in length and weighs approximately 2 to 2½ pounds. Although related to the raccoon, the ringtail's foxlike face lacks the black mask of the larger animal. The tails of the raccoon and ringtail are similar in appearance; however, the ringtail's is proportionately longer. The ringtail is primarily nocturnal though it is occasionally seen during daylight hours.



FURBEARER OBSERVATION

SPECIES OBSERVED.: _____

DATE: _____ TIME OF DAY: _____

PLACE SEEN: (Describe as precisely as possible, including miles to nearest landmark, elevation, county, and other information.)

_____

_____

_____

_____

DETAILS: (Include identifying factors and observed activity of the animal.)

_____

_____

_____

_____

_____

NAME OF OBSERVER: _____

Address: _____

Phone: _____

PLACE STAMP HERE

TO:

California Department of Fish and Game
Special Wildlife Investigations
1416 Ninth Street
Sacramento, California 95814