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DISTRIBUTION OF THE LONG-TAILED WEASEL IN FLORIDA

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Abstract.—A status survey of the long-tailed weasel (*Mustela frenata*) in Florida was conducted between April 1990 and February 1992. A total of 196 occurrence records was obtained from the literature, specimen collections, and reported sightings. These data revealed that long-tailed weasels occur throughout Florida, excluding the southeastern portion of the Peninsula, and are most likely to be observed between December and March. Weasels were recorded in a variety of habitat types, with the greatest number of records occurring in upland forests, agricultural lands, and lowland forests. The species appears to be a habitat generalist that may be limited more by the availability of its prey than by alterations in its habitat.

The long-tailed weasel (*Mustela frenata*) has been characterized as one of Florida's rarest mammals (Rand and Host 1942; Brown 1972a, 1978a, 1978b; Layne 1974). Although weasels occur throughout much of Florida, they are seldom observed and difficult to capture (Hovis 1992). Consequently, the status and habitat requirements of the species in Florida have not been clearly defined. Moore (1945) suggested the weasel is a habitat generalist that may be found wherever there is an adequate prey base. No detailed food habit studies have been conducted in Florida, but small mammals probably comprise the bulk of the diet (Hall 1951; Neill 1957; Brown 1978a, 1978b). Weasels have been observed in a variety of habitats in Florida including pinelands, hardwood forests, swamps, tropical hammocks, and scrub (Brown 1972a, 1978a, 1978b).

Two subspecies of long-tailed weasel occur in Florida. *M. f. olivacea* ranges throughout northern Florida and the southeastern United States (Brown 1978a, Frank 1992a), whereas *M. f. peninsulae* occurs in central and southwestern Florida (Brown 1978b, Frank 1992b). *M. f. olivacea* is distinguished from *M. f. peninsulae* by its smaller body size; finer, softer pelage; and smaller skull and tympanic bullae (Hall 1951). However, specimens collected from the Okefenokee Swamp, Georgia, and Gainesville, Florida, show evidence of intergradation between the two subspecies (Hall 1951).

Currently, the long-tailed weasel is classified as a protected furbearer by the Florida Game and Fresh Water Fish Commission (FGFWFC), and harvest is prohibited. No official protection is provided at the federal level, but *M. f. peninsulae* is under review for listing as either endangered or threatened by the U.S. Fish and Wildlife Service (USFWS). As part of the federal review process, the FGFWFC and the USFWS cooperatively conducted a status survey of the long-tailed weasel in Florida. The survey, which occurred between April 1990 and February 1992, was designed to provide information on the species' distribution, habitat requirements, and relative abundance. Because the taxonomic distinction between *M. f. olivacea* and *M. f. peninsulae* has not been satisfactorily established, both subspecies were considered.

Methods

Information on the distribution and habitats of the long-tailed weasel was obtained from the literature and specimen collections. In addition, more than 800 biologists, wildlife officers, trappers, furdealers, and taxidermists throughout Florida were mailed a description of the species and asked to report any sightings or evidence of occurrence. Requests for information also were solicited through advertisements placed in the newsletters of several statewide conservation organizations.

The following data were recorded for each weasel occurrence: date, location, habitat type, and circumstances under which the animal was observed. Habitat types were classified according to criteria established by the Florida Natural Areas Inventory (1990) and Runde and Reynolds (1990). Considerable effort was made to ensure that only valid records were included in the database. Persons reporting questionable sightings were interviewed and asked to describe what they had seen. If they gave an inaccurate description of the species' appearance or behavior, the observation was disregarded.

Results and Discussion

A total of 196 occurrence records was compiled during the survey. Ninety-three (47%) and 103 (53%) of the records were from the purported ranges of *M. f. olivacea* and *M. f. peninsulae*, respectively. Twenty-six (13%) records were derived from the literature and 91 (46%) records were from specimens. The remaining 79 (40%) records were obtained from responses to mailings and newsletter announcements. More specific information on the source of each occurrence record is provided in Hovis (1992).

Weasels were first described in Florida during the late 1800s (Chapman 1894; Rhoads 1895; Bangs 1896, 1898) and have been recorded in every subsequent decade. More weasel occurrences have been recorded since 1950 than before (145 versus 40 records), but this difference probably reflects an improvement in record keeping or an increase in the number of knowledgeable observers rather than an increase in the species' abundance.

Weasels were recorded throughout northern, central, and southwestern Florida (Fig. 1). Along the Gulf Coast, weasels were recorded as far south as Collier-Seminole State Park in Collier County (Brown 1972b), whereas on the Atlantic Coast, the southernmost locality was in Indian River County. Weasels were conspicuously absent from the southeastern portion of the Peninsula. Notably, the statewide distribution map derived from the survey was similar to the range maps previously published for *M. f. olivacea* and *M. f. peninsulae* by Brown (1978a, 1978b) and Frank (1992a, 1992b).

The greatest numbers of weasel records were from Alachua, Marion, Orange, and Highlands counties. However, it is important to note that the data are undoubtedly biased. Except for Marion County, there is a research or educational facility within each of these counties (Alachua - University of Florida, Orange - University of Central Florida, and Highlands - Archbold Biological Station), and the faculty, researchers, and

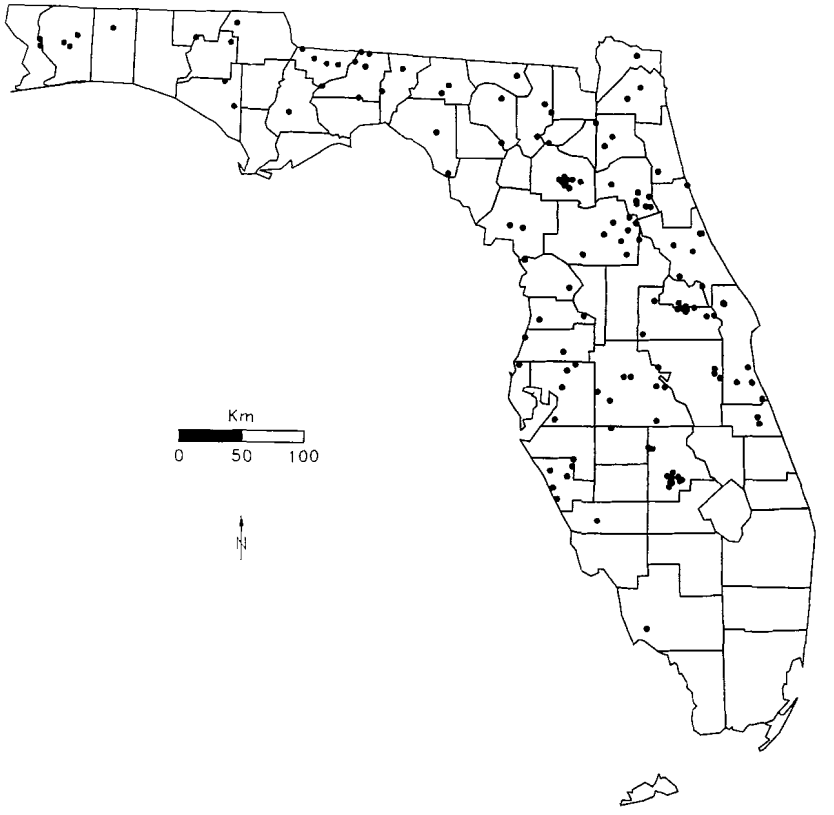

Figure 1. Distribution of the long-tailed weasel in Florida through February 1992. Dots represent single or multiple occurrences.

students associated with these facilities collected most of the available weasel data. Similarly, most of the Marion County occurrences were recorded on or near the Ocala National Forest by researchers and laymen who spent a disproportional amount of time in the area.

The month of observation or collection, regardless of year, was determined for 132 (67%) of the records. Most weasel occurrences (74%) were recorded between December and March (Table 1). Unfortunately, there was insufficient information to examine the relationships among seasonality of occurrence and weasel sex and age. This was because sex and/or age were determined for only 38 (29%) of the 132 records of known month. Nonetheless, the data suggest that weasels are most likely to be observed between December and March, a finding that may be related to the reproductive cycle of the species in Florida. Parturition apparently occurs in October and November (Harper 1927; Moore 1945, 1949), and the young disperse at 3-4 months of age (King 1989). Accordingly, post-breeding dispersal would occur during the winter months, which is when most weasels were observed. Seasonal variation in weasel observations may also be related to an increase in the number of potential observers (i.e., hunters, bird watchers, etc.) in the field between December and March.

Table 1. Number of long-tailed weasel occurrences recorded per month in Florida through February 1992.

	Mustela frenata olivacea		*Mustela frenata peninsulae*		Total	
Month	No.	%	No.	%	No.	%
Jan	17	30	20	26	37	28
Feb	15	27	19	25	34	26
Mar	5	9	7	9	12	9
Apr	3	5	3	4	6	4
May	1	2	8	11	9	7
Jun	1	2	3	4	4	3
Jul	4	7	2	3	6	4
Aug	1	2	1	1	2	2
Sep	2	3	1	1	3	2
Oct	0	0	2	3	2	2
Nov	1	2	1	1	2	2
Dec	6	11	9	12	15	11
Total*	56	100	76	100	132	100

*The month of observation or collection was determined for 132 (67%) of the 196 occurrence records.

Habitat data were recorded for 171 (87%) of the occurrence records. Weasels were found in a variety of habitat types, with the most records occurring in upland forests, agricultural lands, and lowland forests (Table 2). Weasels frequently were associated with a mixture of habitat types, such as upland forests-agricultural lands or low density suburban-agricultural lands, and seemed to exhibit some affinity for permanent or semi-permanent water. However, these trends in habitat use were difficult to quantify due to the limitations of the data. Much of the information on habitat was incomplete or reported by persons who were not familiar with Florida's habitat types. Furthermore, many of the records were more than 5 years old, and observers often could not recall the exact locations where the observations were made. These limitations not withstanding, the data support Moore's (1945) previous suggestion that the weasel is a habitat generalist that may occur wherever there is an adequate prey base. A study of weasel predator-prey relationships is needed to provide further insight into the species' habitat requirements.

Although the survey did not yield a quantitative estimate of weasel abundance in Florida, the accumulation of only 196 occurrence records attests to either the rarity of the species or its secretive nature. If the species is rare, this rarity does not necessarily indicate that populations in Florida are in jeopardy. Because weasels are predators, they naturally

Table 2. Number of long-tailed weasel occurrences recorded per habitat type in Florida through February 1992.

	Mustela frenata olivacea		*Mustela frenata peninsulae*		Total	
Habitat type*	No.	%	No.	%	No.	%
Upland forest	26	39	54	52	80	47
Agricultural	17	25	14	13	31	18
Lowland forest	10	15	17	16	27	16
Low density suburban	4	6	7	7	11	6
Freshwater river/stream	5	7	2	2	7	4
Early successional	3	4	0	0	3	2
Freshwater marsh	0	0	3	3	3	2
Dry prairie	0	0	2	2	2	1
Lake	0	0	2	2	2	1
Coastal upland	1	1	1	1	2	1
Estuarine community	0	0	2	2	2	1
Wet prairie	1	1	0	0	1	1
Total**	67	98	104	100	171	100

*Habitat types were classified according to criteria established by the Florida Natural Areas Inventory (1990) and Runde and Reynolds (1990).

**Habitat data were recorded for 171 (87%) of the 196 occurrence records.

occur in low densities and populations may fluctuate depending on the availability of prey species. Weasels also are small, secretive, and difficult to see or capture (King 1989). Therefore, it is not surprising that few locality records exist and the species is seldom observed.

With these facts in mind, weasels in Florida probably are best described as being widely distributed and relatively low in numbers. Alteration or destruction of habitat may have a negative impact on certain local populations, but because weasels can inhabit a variety of habitat types, they probably are less susceptible to land-use changes than other species with more specialized habitat requirements. Thus, the continued presence of the long-tailed weasel in Florida may depend more on the status and availability of its prey than on its habitat.

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