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DISTRIBUTION OF BLACK BEARS IN FLORIDA

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The black bear (*Ursus americanus floridanus*) is Florida's largest land mammal, yet despite its size it is rarely observed in the wild. Because of concern over habitat destruction and illegal killing, the black bear was listed as threatened by the Florida Game and Fresh Water Fish Commission (Williams 1978). Their requirements for large areas of habitat makes Florida black bear populations vulnerable, and the species requires special attention. However, censusing black bears, even on a local scale, is complicated by the expanse of their territories, the impenetrable nature of their habitat, and their tendency to avoid humans. A reliable estimate of the statewide bear population is even less attainable. Yet, distribution data can be acquired by other means to provide a useful insight to the status of the statewide population with which historic and future conditions can be compared.

Williams (1978) published a black bear distribution map based on a 1975 mail survey of Florida Game and Fresh Water Fish Commission field personnel. Recently, the frequency of road-kills and reports of black bear depredation in central and south Florida suggest that the range of the bear may be expanding in these areas. However, these observations are confounded by an increase in the chances of bear-human encounters. Therefore, another county-by-county survey was conducted to help clarify the status of black bears in Florida and to develop an updated map of their statewide distribution.

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METHODS

We interviewed Florida Game and Fresh Water Fish Commission personnel from all areas of the state. They were asked to indicate on county road maps the specific areas where they knew bears occurred. Additionally, we reviewed records of bear reports in Everglades National Park. On-site inspections and aerial surveys were conducted to determine if habitat conditions were consistent with reported black bear occurrences. A preliminary composite map was prepared and mailed to cooperators for comments, which were incorporated into the final map. The locations of road-killed bears recorded from 1978 through September 1983 also were plotted. Specific occurrences of black bears dating from the late 18th century were obtained from a literature review. We use these as an indication of historic distribution.

RESULTS AND DISCUSSION

Black bears were apparently widespread throughout Florida except for some islands until the late 19th century. Bears were observed primarily in large isolated tracts (Maynard 1883, Chapman 1894, Hamilton 1941, Davis 1943). Hall (1981:950) identified peninsular Florida to Alabama as the range of the Florida subspecies of the black bear. Old published records of black bears in Florida include the following: Anastasia Island, St. John's County and Indian River County (Bangs 1898); Matecumbe Key, Monroe County (DePourtales 1877); Brevard County (Cory 1896:55); Key Biscayne, Dade County (Merriam 1896); Royal Palm State Park, Dade County (Safford 1919); Lee County (Hamilton 1941); St. Augustine, St. John's County, Drayton's Island, Putnam County and Alachua County (Bartram 1943); Volusia County (Harlow 1956); Okefenokee Swamp, Baker County (Harper 1927); Palm Valley, St. John's County (Ivey 1959); Welaka, Putnam County (Moore 1946, 1949); Highlands County (Rand and Host 1942); and Ormond Beach, Volusia County and Panama City, Bay County (Smith 1971).

Black bear population size has been estimated for several areas in Florida. Rand and Host (1942) reported a population of about 12 in Highlands County. Schemintz (1972, Unpubl. Rept., Game Mgt. Division, Fla. Game and Fresh Water Fish Commission, Tallahassee, Florida; 1974) estimated 100 bears in Collier County, 10 in Hendry County, 20 in Monroe County and 5 in Palm Beach County. Eighty-100 bears were reported to occur in the Big Cypress Swamp, Collier County (U.S. Dept. Int. 1969, Unpubl. Rept. Environmental Impact of The Big Cypress Jetport). Schwartz (1952) observed in extreme south Florida that bears were "most common" in the head-

waters of the Shark River in Monroe County. The species was described as rare in south Florida in 1943 (Davis 1943) and "desparately low" in the Everglades during 1948 (Cahalane 1948). A density of 1 bear per 3.5 km² was estimated in the Osceola National Forest, Columbia and Baker Counties (U.S. Dept. Int. 1979, Unpubl. Rept. Final supplement to the final environmental statement: phosphate leasing on the Osceola National Forest, Florida, Bureau of Land Management, Alexandria, Virginia).

Statewide, the population has been estimated to be fewer than 500 (Frye et al. 1950, East 1977:60), 500 (Pelton and Nichols 1972), 500-600 (Smith 1971), 800-1000 (Harlow 1962, obtained by multiplying the total legal and illegal kill by 10), and 1000 (Smith 1971, U.S. Dept. Int. 1969). Centers of black bear abundance have been identified as the entire mainland (Maynard 1883), east coast scrublands (Howell 1929), Osceola and Apalachicola National Forests, St. John's River Swamps, Gulf Coast from Leon County to Hernando County, sections of the Everglades (Frye et al. 1950, McDaniel 1974, Williams 1979), Central and Northeast Florida (Harlow 1961), Collier County (Layne 1974), Durbin Swamp, Duval County and Fakahatchee Strand, Collier County (McDaniel 1974), and remote coastal plains swamps (McDaniel 1974, Nat. Fish and Wildl. Lab 1978, Unpubl. rept., Osceola National Forest phosphate extraction and processing, U.S. Fish and Wildlife Service, Gainesville, Florida). Pelton and Nichols (1972) estimated that the Florida black bear population was evenly divided (1/3 each) among the panhandle, northeast region, and the remaining peninsula. Decreases in bear numbers and range due to habitat destruction and human encroachment were initially reported by Harper (1927) and Howell (1929).

Figure 1 illustrates the current black bear range in Florida as indicated by the present survey. The distribution of road-kills coincides closely with the survey results. Although discontinuous, the range extends from extreme northwest Florida to the southern tip of the peninsula with some evidence of occurrence in 50 counties (75%). The most extensive portions of the range occur on large tracts of public lands, principally Apalachicola, Osceola, and Ocala National forests, The Big Cypress Preserve, and Okefenokee National Wildlife Refuge, in Georgia. Smaller concentrations overlap other public lands including Everglades National Park, Chassahowitzka National Wildlife Refuge, and Eglin Air Force Base. The remaining portions are found on relatively undisturbed private ranch and timber company lands. This range encompasses a wide

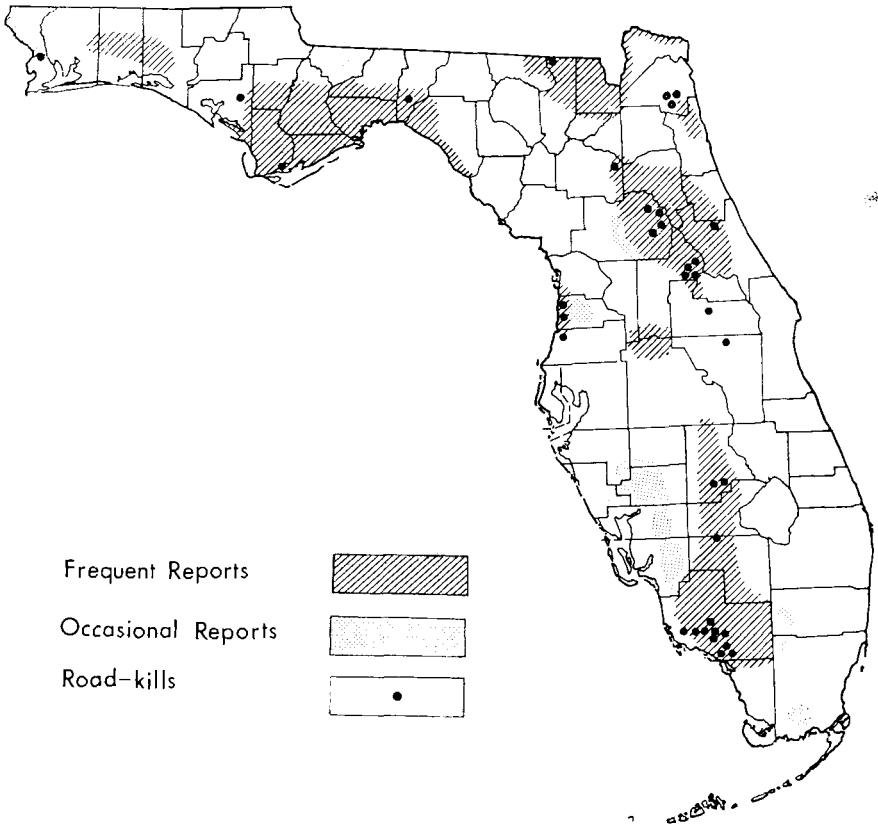


Fig. 1. Distribution of Black Bears in Florida.

variety of habitats, however the black bear is consistently found within large tracts of woodland types.

This present disjunct distribution and the absence of bears from large areas of the state contrasts with the more generalized historic distribution. Noteworthy is the absence of bears from the eastern coastal areas and large portions of central and north-central Florida. These areas are characterized by extensive urbanization and agriculture-related habitat changes. An exception is the coastal area of Dixie, Levy and northern Citrus counties. No bears were reported here, although seemingly adequate habitat remains.

A comparison of Figure 1 with Williams' (1979) map shows close agreement, especially with regard to the major areas of bear occurrence. We attribute minor differences to the inherent imprecision of the methodology. The most significant difference between Figure 1 and Williams' (1978) map is in the Dixie, Levy and Citrus counties area. Williams (1978) showed bears to occur continuously along the coastal portions of these counties while none were reported from that area in the present survey.

That this discrepancy reflects an extirpation of bears from these counties between 1978 and 1983 seems unlikely. The hunting of bears in this area has been prohibited since 1971 and vast areas of suitable woodland habitats remain. Although it seems clear that bears no longer occur in this area, we believe that the extirpation occurred before 1978 and probably resulted from widespread persecution by cattlemen and beekeepers. It seems more probable that the earlier reports noted reflect lesser efforts than in the present study to confirm survey responses via personal interviews and on-site visits.

The remaining fragments of bear distribution are analogous to the habitat islands described by Simberloff (1974) where occupied range is "isolated from similar habitats by different, relatively inhospitable terrain". Such island populations risk genetic consequences (Grieg 1979 and Franklin 1980) and if immigration ceases altogether, extinction may be inevitable (Diamond 1978). Therefore, although black bear habitat types are currently widespread in Florida, the threat posed by habitat fragmentation should not be overlooked. It is clear that isolation of once contiguous populations has resulted in restricted immigration potential, and as population isolates become reduced in size the chances of local extinction are enhanced.

SUMMARY

Historically, black bears occurred throughout the Florida mainland and on some coastal islands, often associated with large forested tracts. Currently, the black bear remains widespread in Florida, but its distribution is reduced and has become fragmented. Large undeveloped woodland tracts are still the preferred habitat. The continued fragmentation of remaining bear habitat and the local extinctions which will likely follow are an important threat to black bear existence in Florida.

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