

Statewide Assessment of Road Impacts on Bears in Six Study Areas in Florida from May 2001 - September 2003

Prepared by Bear Management Program
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Background:

- The numbers of incidents of vehicle collisions with bears appeared to be increasing in some parts of the state in recent years. That has raised concerns regarding the potential impacts of these road kills on bear populations. Therefore, the Florida Fish and Wildlife Conservation Commission (FWC) undertook this study to provide the Florida Department of Transportation (DOT) with an assessment of the relative impacts of road kills on bear populations.

Impact of Roads on Black Bear Population Study:

- The FWC has completed the study, examining the impacts of roads on 6 black bear populations in Florida from May 2001-September 2003. This study was funded by DOT.

Summary Results:

Study results have provided baseline information on:

1. road kill impact on 6 populations in Florida
2. population estimates for 6 populations in Florida
3. primary and secondary range delineation
4. results from this study provide a reference point – starting point for trend assessment
5. road kills will still occur regardless of population numbers
6. populations are fragmented – roads and road kills can impact fragmentation, genetic flow and long-term population viability

Conclusion Points:

- Range of extrapolated population estimates for 2002:

Apalachicola Bear Population	438 - 695 bears
Big Cypress Bear Population	516 - 878
Eglin Bear Population	63 - 101
Ocala Bear Population	729 – 1,056
Osceola Bear Population	201 - 315
St. Johns Bear Population	100 – 179

- The 6 bear populations in Florida are sustaining road-kill mortality rates within the range of road-kill impacts documented elsewhere in the eastern United States.

- Road kills in Florida are impacting populations at rates equivalent to, or below, total mortality rates in other states (including legal and illegal harvest and road kills in other states).
- However, there are exceptions. For example, when comparing bear populations in other states with similar size bear populations to Florida bear populations (e.g., Ocala and South Carolina Mountain; St. Johns and Southeastern New Hampshire), the level of bear road-kill impact in Florida is equivalent to, or often higher than, total mortality rates of other states' bear populations.
- The bear population estimates generated from this study provide a reference point from which to begin long-term monitoring efforts on individual populations and eventually provide a broader understanding of the sustainability of bear populations statewide.
- Statewide the bear populations remain fragmented with genetically distinct populations that are regionally impacted.
- The sum of the 6 studied bear population estimates is higher than the population estimate generated in 1998 for the same areas.
 - Important to note: this study utilized more rigorous methodology to generate bear population estimates than the 1998 estimate.
 - The study areas were intentionally selected in optimal bear habitat to generate maximum population numbers and the most reliable data.
 - Additionally, each bear population is impacted by regional differences (e.g., biological and social constraints on each population).
 - Finally, the two smaller, more-restricted bear populations (Chassahowitzka and Glades Highlands) were not included in this evaluation.

Assumptions of the study:

- 1) Bear population estimates in 2001, 2002 and 2003 fluctuated. This variability in the data and estimated extrapolations emphasize the need for long-term monitoring.
- 2) Population modeling analyses used data from 2001, 2002 and 2003 to generate bear population estimates for 2002 only.
- 3) Bear population estimates were calculated for each study area and then extrapolated to each bear population's primary range (this does not include secondary range or other habitat).
- 4) Bear population estimates assume constant density and optimal habitat throughout primary ranges.

Questions:

- **Questions that may be raised in response to the results from this study:**

How long did it take, and how much did it cost?

The field sampling was done for three years, May 2001- September 2003. The contract from DOT was \$404,700

Was there one prime “take home” message that we learned from the study?

The 6 bear populations in Florida are sustaining road-kill mortality rates within the percent road-kill impact of other states in the eastern United States. Road kills in Florida are impacting populations at rates equivalent to or below total mortality rates in those states from legal and illegal harvest and road kills. However, there are exceptions (e.g., Ocala and South Carolina Mountain; St. Johns and Southeastern New Hampshire). Also the Florida black bear is a unique sub-species that exists in fragmented sub-populations that differ from one another. Therefore, changes in available habitat and road development can affect the level of road-kill impact on these bear populations.

How was the impact of roadkill estimated?

The number of road kills within each study area and associated primary range was tallied. Population estimates for each study area and associated primary range were calculated using the following methods. Samples of bear hair from sampling stations were collected to identify individual bears through genetic analysis. This technique was developed in Canada and this is one of the first studies in Florida to implement this technology. Using the number of identified individuals from the genetic analysis, population models were applied to generate population estimates. Assuming constant density across primary range and available optimal habitat, population estimates were extrapolated to the primary ranges. Once these population estimates were generated, the percentage of road-kill impact was calculated for each study area and primary range.

Did the study provide an estimate of the state-wide bear population?

No. The study was not intended to provide a state-wide population estimation. The results are specific to the 6 study areas and associated primary ranges, and no reliable estimates are available for other parts of the state that are known to have bears.

If the study does not provide a state-wide population estimation, does FWC have any sense of state-wide population numbers?

FWC biologists believe that there are at least 2,000 bears in Florida.

Did the study provide population trend data?

No. The study provided a baseline reference point for the 6 extrapolated bear populations for 2002 using the data collected in 2001, 2002 and 2003. Additional monitoring will be necessary to determine trends with statistical confidence.

What is the bear’s official status?

The bear is listed on the state’s list of imperiled species as “threatened”.

Why is the bear listed as threatened on the state list?

Bears were once widely distributed throughout Florida and found in abundance in a wide variety of habitats. They require large home ranges and need ample habitat to ensure a healthy population. Several factors such as development, human population increase, resource extraction, etc. have contributed to the reduction of available suitable bear habitat and have fragmented the once contiguous bear population into isolated sub-populations.

Are there plans to change the official state status?

No. There are no plans to reassess the state status of bears at this time.

Is FWC thinking about allowing hunting of bears at this time?

Bears were last hunted in 1993 and the harvest season was closed in 1994. Given the current threatened status, limited agency resources and more pressing conservation priorities, FWC staff is not recommending a regulated bear harvest. In addition, there is a diversity of opinions regarding bear conservation. Therefore, to better understand public attitudes, opinions and perception regarding bears and bear management, FWC will be conducting a survey in Florida later this year.

Would hunting help reduce nuisance bears in Florida?

Hunting does not “solve” the nuisance problem. Nuisance bears utilize the urban-wildland interface while harvested individuals would generally be taken from more forested locations (wildlife management areas, national forests, etc.) and therefore are not typically the individuals causing nuisances. Evidence has shown that nuisance situations will occur whenever there is an available resource, regardless of bear population sizes and harvest levels. Having nuisance animals does not mean we have a nuisance population (nuisance occurs at the individual level and not at a population level).

What is the federal status?

The bear is not listed on the federally endangered or threatened species list.

Is the recent Notice of Intent to Sue, filed by Defenders of Wildlife and others, related to this FWC study?

No. FWC undertook this study to look at road impacts, and it is not related to the federal listing status. The Federal listing process is very different from the state listing process. FWC continues to work cooperatively with our federal partners and will share data and other information regarding bear biology, ecology and population dynamics