

## II. SIGNIFICANCE:



Figure 2: Florida Black Bear  
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The Florida black bear (*Ursus americanus floridanus*) is currently listed as a threatened species in Florida. It is estimated that bear populations range from 1,000 to 1,500 individuals. The population is concentrated in five sub-populations from the western panhandle to the Everglades (Hoctor 2003). These include Ocala National Forest, Big Cypress National Preserve, Apalachicola National Forest, Osceola National Forest, and Eglin Air Force Base.

The O2O corridor contains a variety of diverse native landscapes as well as working landscapes, particularly silviculture. All of these landscapes provide critical habitat for a number of threatened and endangered Florida species including the gopher tortoise, wood stork, Eastern indigo snake, red-cockaded woodpecker, as well as the Florida black bear. Many of these species are habitat specific, however, the Florida black

bear is not. Florida black bears are a wide-ranging species that incorporate several habitat types into their large home ranges. For these reasons we will focus on the Florida black bear as a case study for the importance of the O2O corridor.

The Florida Black Bear is considered a 'landscape species' because of its extensive home range and dependence on more than one vegetative community (Hoctor 2003). The Florida black bear is elusive, crepuscular, solitary (except during breeding), and prefers habitat with thick cover. Vegetative communities such as pine flatwoods, oak pine scrub, hardwood and mixed swamps, sand pine scrub, and hardwood hammocks are all suitable bear habitat. Bears use these communities for denning and resting sites, movement corridors and foraging (BTB 2003). Males require a larger home range that may include the home ranges of several females. Female offspring tend to make their home range adjacent to that of their mothers, while male offspring disperse

greater distances to establish home ranges. This distance varies based on habitat availability, existing male territories, and connectivity of habitat.

Habitat loss through fragmentation is the number one threat to bear populations. Fragmentation is a difficult enemy to recognize and fight because the effects are subtle at first. As fragmentation increases, habitat quality and size decreases. Populations gradually become isolated or potentially separated (Hector 2003). This, coupled with the black bear's naturally low reproductive rate makes the population susceptible to several degenerative processes such as inbreeding and edge effects. Furthermore, small, isolated populations are vulnerable to a loss of genetic diversity and to large, stochastic (random) events (Hector 2003).

Tom Hector, in his dissertation at The University of Florida, Department of Wildlife Ecology and Conservation, explored the importance of connectivity and corridors to the long-term survival of the Florida Black Bear. Through GIS analysis, Hector generated least cost paths (LCP) based on available habitat and habitat requirements of bears. LCPs basically outline the safest and most suitable route from one point to another. Hector ran 16 different LCPs for the O2O corridor. The results can be found in Figure 2. There is a high degree of correlation among each of the LCPs suggesting that the optimal linkage for bears between Ocala and Osceola follows the route identified by Hector. Hence, Hector's research and methods played a significant role in our analysis for the O2O project.