United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

October 20, 2017

Memorandum

To: Jay Herrington, Project Leader, North Florida Ecological Services Office
Roxanna Hinzman, Project Leader, South Florida Ecological Services Office

From: Larry Williams, State Supervisor, Florida Ecological Services

Subject: Statewide radius for sand skink (*Plestiodon [Neoseps] reynoldsi*) incidental take

The North and South Florida Ecological Services Offices consult on projects affecting habitat that is potentially occupied by the sand skink. In order to achieve a consistent approach across the State, staff and supervisors from the North Florida Ecological Services Office; South Florida Ecological Services Office; the Service Scientific Integrity Officer; and the State Supervisor met on July 18, 2017, to discuss and decide on a legally and scientifically defensible radius around a sand skink track for the purpose of quantifying and issuing incidental take. The provisional decision that day was to change the radius from 188 feet (ft) to 80 ft from a skink track. From the date of this memo forward, both offices will use the 80 ft radius. If scientific information becomes available that demonstrates 80 ft may no longer be scientifically and legally defensible, the Service will consider the new information and, if appropriate, adjust the radius.

The purpose of this memo is to document this decision and provide standard language that can be inserted into a biological opinion (BO) or Habitat Conservation Plan/Incidental Take Permit (HCP/ITP) that explains the scientific basis for the 80 ft radius. The standard language and associated references are found below.

Standard Language to use in drafting BOs and HCP/ITPs

When quantifying the amount or extent of take, the Service uses the best scientific and commercial data available to establish a radius around a sand skink track where the species is reasonably certain to occur. While no studies have established a home range (the area in which an individual usually confines its daily feeding, breeding, and sheltering activities) for sand skinks, the Service has evaluated the best scientific and commercial data available relative to sand skink movements, as well as the home ranges of other similar-sized lizards. After reviewing this information, the Service has determined that sand skinks are reasonably certain to feed, breed, and shelter within 80 ft of a sand skink track when the habitat is suitable.

The information that supports 80 ft as the radius includes: 1) Penney (2001), who reported translocated sand skinks moved a median distance of 25.6 meters (m) (84 ft; n = 64); 2) Schrey et al. (2011, p. 63), who conducted a genetic analysis of sand skinks (n = 470) within

25 m of each other, and reported "the Florida sand skink occurs with higher genetic similarity than expected by chance within 25 m (82 ft)"; and 3) Perry and Garland (2002, p. 1877), who reviewed the literature and examined home range as a function of snout-vent length in lizards. Of the 489 data sets they examined, 108 met their criteria for their analysis. Lizards of the Autarchoglossa (the clade that contains all skink species) with snout-vent lengths ranging from 30 millimeters (mm) to 100 mm (*i.e.*, the range representative of sand skinks) had home ranges of approximately 10 m^2 to approximately 1,700 m^2 (p. 1877). A 1,700 m^2 area has a radius of 23 m (75 ft). Therefore, the Service's opinion is any suitable habitat within 80 ft of a sand skink track is reasonably certain to be occupied, and any activities that occur within that radius which are reasonably certain to harm or harass sand skinks would be considered incidental take as defined by the Endangered Species Act.

The Service acknowledges that some sand skinks move (disperse) farther than an 80 ft radius. However, the Service has made a range-wide determination for Florida that any sand skink on a given site is reasonably certain to occupy all suitable habitat within 80 ft of a track. In applying this radius, a circle will be drawn around a radius that extends 80 ft outward from a track. If circles do not overlap, the space between circles will not be considered occupied when quantifying incidental take.

REFERENCES

Penney, K.M. 2001. Factors affecting translocation success and estimates of dispersal and movement patterns of the sand skink *Neoseps reynoldsi* on restored scrub. Master's thesis. University of South Florida; Tampa, Florida.

Perry, G. and T. Garland. 2002. Lizard home ranges revisited: effects of sex, body size, diet, habitat, and phylogeny. Ecology 83(7):1870–1885.

Schrey, A.W., A.M. Fox, H.R. Mushinsky, and E.D. McCoy. 2011. Fire increases variance in genetic characteristics of Florida sand skink (*Plestiodon reynoldsi*) local populations. Molecular Ecology 20:56-66.