

The gopher tortoise (*Gopherus polyphemus*) has been observed on the proposed mine site. Based on recently conducted surveys by applicant sub-contractors, 118 (active, inactive) gopher tortoise burrows that were found in 4-5 areas along the crest of the ridge. While not listed as threatened or endangered under the ESA in Georgia, the gopher tortoise is a candidate species, meaning listing has been determined to be warranted but such listing has been precluded by higher priorities. The gopher tortoise is considered a keystone species as its burrow can be home for up to 250 other species. After the mining activity has occurred, the soil will have been homogenized and its properties (such as temperature, humidity, structure and texture) changed. As a result, it is unknown whether this area may still be suitable as gopher tortoise habitat. Suitable habitat also requires herbaceous forage for tortoises.

The JPN supporting information states ‘... the gopher tortoise has successfully recolonized areas that were previously mined for heavy mineral sands.’ Areas known to the Service were recolonized greater than 15 years after reclamation and after numerous and repeated prescribed burns to stimulate herbaceous vegetation growth. The applicant does not propose any assurances that the site will become suitable habitat or when this may likely occur.

The Service recommends that a habitat restoration plan/vegetation management plan is developed to; 1) improve fire/fuel conditions to minimize wildfire impacts in the future, and 2) develops a vegetation management plan composed of native species that is a) conducive with prescribed burning and b) facilitates the development of pine savanna habitat that will support gopher tortoise as well as other listed and at-risk species.

The federally-threatened eastern indigo snake (*Drymarchon couperi*), is known to occur on the Trail Ridge, and utilize gopher tortoise burrows during cold winter months and to avoid summer heat. It is known to move as much as five miles from known locations. Information in the JPN indicates no indigo snakes were detected on the site and states “ A lack of indigo snake observations during focused surveys doesn’t demonstrate that the species is never present ...” Individual eastern indigo snakes are large with extensive territories (>1000 ac.). Because of the large acreage utilized and the ability to diurnally and seasonally adapt their use of the habitat within each territory, individual snakes are difficult to detect or capture in any given area on any given day. Therefore, documentation of presence and abundance is difficult. The Service recommends that the applicant closely adhere to standard avoidance and minimization measures that can be used to avoid and minimize potential impacts to individual eastern Indigo snakes that may occasionally pass through the project area.

The Trail Ridge is part of a recovery unit for the indigo snake. Eliminating a significant area of habitat from a recovery unit may eliminate the value of the entire unit, and delay species recovery. Again, the Service recommends that a habitat restoration plan is developed to support pine savanna species as well as connectivity in mined over areas as well as with other adjacent habitats. The development of these habitat restoration plans should be closely coordinated with Service personnel.

One of our greatest concerns is that, following post-mining restoration activities, tortoises will prematurely attempt to burrow, but the homogenized soils will no longer be structurally capable of sustaining a burrow. If this were to happen, tortoises would dig out of a collapsed burrow, but