

Flatwoods Salamander

(Ambystoma cingulatum)

The **Flatwoods Salamander** is listed as a **Threatened** species by the U.S. Fish and Wildlife Service (USFWS) and a **Species of Special Concern** by the Florida Fish and Wildlife Conservation Commission (FFWCC). The flatwoods salamander was listed due to loss and degradation of habitat. **It is illegal to harass, harm, capture, or kill this amphibian.**



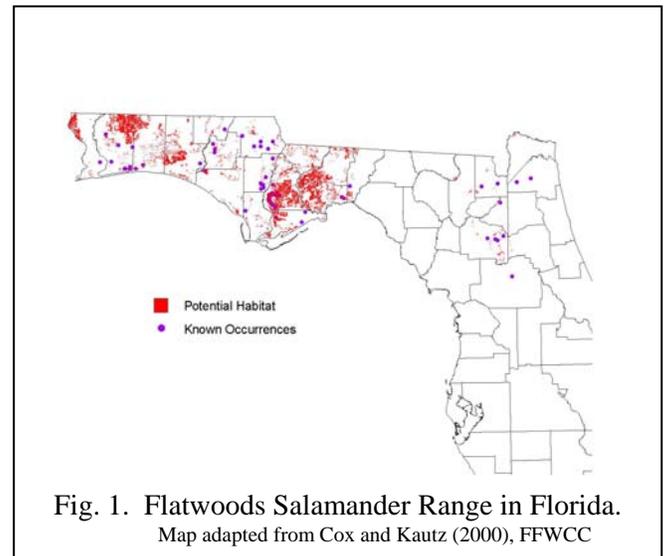
Adult (photo by Al Sheldon)

Description

- A small headed and slender salamander that when mature will reach a total length of around five inches.
- Adults have back and sides which are colored black to chocolate-brown and heavily mottled with silvery strips and blotches. Undersides are gray with few irregular faint creamy blotches.
- Aquatic larvae are long and slender, broad-headed with prominent gills, slender legged, and have fragile tail fins.
- Larvae are distinctively patterned with white bellies and striped sides. Side and dorsal coloration consists of longitudinally arranged strips of tan to brownish-black alternating with strips of white to yellow.

Range

Known populations were historically distributed in lower Coastal Plain habitat of Alabama, Georgia, South Carolina and Florida. Flatwoods salamanders were traditionally found in the panhandle and a few counties in north peninsular portions of Florida (Fig. 1).



Flatwoods salamanders are no longer known to exist in Alabama. As of 1999, status in other states are as follows: Georgia has 11 populations with a total of 28 breeding sites; South Carolina has four populations and four breeding sites; Florida has 36 populations and 81 breeding sites. Sixty-three percent of the 51 known populations of flatwoods salamanders occur on public land.

The majorities of current populations are small and separated by large expanses of unsuitable habitat due to habitat conversion. Only one county in north peninsular Florida is known to harbor flatwoods salamanders and the remaining populations are located in the panhandle.

Habitat

Flatwoods salamanders inhabit moderately wet, open north Florida flatwoods that exhibit an herbaceous understory. An open forest canopy and a herbaceous understory were historically maintained by frequent fire.

Adult and subadult flatwoods salamanders are fossorial in that they live underground in a network of burrows.

Breeding habitat consists of small, isolated, shallow, depressional wetlands dominated with emergent grasses, sedges and other hydroptic herbaceous plants. These wetlands have little open water, dry completely on a regular basis, lack predatory fish, and burrowing crawfish are frequently present. Flatwoods salamanders migrate to their wetland breeding sites during rainy weather from October to January.

Cypress, blackgum or pine trees and various shrubs commonly grow within and/or on the edges of breeding sites. An open forest canopy and periodic burning is required to maintain an herbaceous understory. Flatwoods salamander larvae and their invertebrate prey rely on such vegetation for protective cover.

Today less than 20% of the Southeast's natural pine flatwoods habitat remains. Natural pine flatwoods have been altered to bedded, heavily stocked pine plantations or converted for other agricultural or development purposes.

Management and Protection

Farmers and landowners can be directly involved in the protection of this species by following these recommendations and precautions:

- Include prescribed fire as a management tool of known flatwoods salamander pine flatwoods and breeding sites to maintain an open canopy and herbaceous understory. Avoid the use of herbicides and, when used, apply manually and selectively.
- Conserve natural pine flatwoods habitat within a 1,500 ft radius of known breeding wetlands. Within this radius (from now on referred to as a conservation zone), maintain connectivity between terrestrial and wetland habitats (e.g., fire breaks and roads should not separate upland and wetland areas).
- Timber harvests within a conservation zone should be selective, occur only during dry periods of the year, and on a cycle of 10 or more years. A basal area of 45 to 50 ft² should be maintained following harvest.
- Avoid altering wetland hydrology within a conservation zone, all skid trails proximal to wetlands should run *parallel* to wetland edges.

- Because flatwoods salamanders are burrowing animals, soil disturbance or compaction should be avoided or minimized. Prescribed fire is the preferred method of site preparation and intensive site preparation methods (e.g., root-raking, bedding, discing, stumping, etc.) should not be used. Fire plows should never be used within conservation zones. Timber harvest log landing or loading zones should be located outside conservation zones.
- Reforestation stocking rates of less than 500 trees per acre are recommended. Timber management recommendations would include saw timber rotations, uneven-aged stand development, and use of timber thinning and prescribed fire to conserve and maintain desirable habitat and economic sustainability.
- Avoid unauthorized destruction or alteration of wetlands or discharge of any pollutant to avoid violation of Federal and/or State law.

The NRCS works with the USFWS and FFWCC to ensure that Federal and State-listed species will not be adversely affected by actions planned by landowners. If you do not contact NRCS, please remember that the flatwoods salamander is a protected species and, as a minimum, the USFWS and the FFWCC should review your proposed actions. They can be contacted at the following offices:

U.S. Fish and Wildlife Service
(address to be inserted below by District Conservationist)

Florida Fish and Wildlife Conservation Commission
(address to be inserted below by District Conservationist)

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