FROSTED FLATWOODS SALAMANDER
Ambystoma cingulatum

Order: Caudata
Family: Ambystomatidae
FNAI Ranks: G2/S1
U.S. Status: Threatened
FL Status: Threatened

Description: A small to medium-sized (to 5.2 in. = 13 cm) salamander with an indistinct, sometimes lichen-like, white to silvery-gray pattern on a black background. Belly very dark with discrete white spots; head relatively small with no groove between nostril and upper lip; tail thick. Aquatic larva to nearly 3 in. (7.5 cm) in length, with bushy red gills, a dorsal tail fin, and on each side a pair of dark stripes, including one that passes through the eye.

Similar Species: The reticulated flatwoods salamander (*Ambystoma bishopi*) is best distinguished by its range, only living west of the Apalachicola River. It can also be identified by color pattern, which features a more net-like dorsal pattern and less distinct spotting (flecks) on the belly. Several comparably sized terrestrial salamanders share this species' range. Marbled salamanders (*A. opacum*) have about a dozen bold white or silver crossbars on back and tail, but sides are black and head is large. Mole salamanders (*A. talpoideum*) are plump and plain brown to black with occasional light flecking. Tiger salamanders (*A. tigrinum*) are typically larger and have many irregular yellowish to olive blotches covering body. Larvae of all three, though sometimes appearing striped, lack the bold pair of dark stripes on sides. Slimy salamanders (*Plethodon grobmani*) are black with many small white spots, have a larger head with a faint groove running from nostril to lip, and leave a sticky residue when touched.

Habitat: Mesic flatwoods, wet flatwoods and wet prairie communities with wiregrass groundcover and scattered wetlands often dominated by cypress or gum. Breeds in ponds that lack predatory fish and which usually have some emergent herbaceous vegetation. Not highly tolerant of disturbance.

Seasonal Occurrence: Breeds in late October–December, with adults moving overland to and from ponds at this time. Aquatic larvae remain in ponds for 2–3 months.Outside of breeding season, post-larval individuals typically occupy

underground burrows, including those of crayfish.

Florida Distribution: Occurs as isolated populations across the eastern half of the Panhandle, east of the Apalachicola River, and extending into the northern peninsula. Historically recorded as far south as Marion County, but local extirpations may limit current southward extent to Alachua County.

Range-wide Distribution: Lower Southeastern Coastal Plain of southern South Carolina, southern Georgia east of the Flint River, and northern Florida east of the Apalachicola River.

Conservation Status: Though considered federally Threatened as a result of range-wide decline and extirpation of historic occurrences resulting from habitat loss and degradation, populations still exist on Apalachicola National Forest and St. Marks National Wildlife Refuge. Many populations in the peninsula have been extirpated. These and even larger populations can be severely threatened by deaths of migrating adults and juveniles attempting to cross roads.

Protection and Management: Establish appropriate special designations in Apalachicola National Forest, Osceola National Forest, and St. Marks National Wildlife Refuge to assure that all occupied habitat within their boundaries is managed to promote continued viability of populations of this species. Protect native pine flatwoods habitats and associated wetlands from intensive forestry that disrupts soil and groundcover vegetation. To maintain the open nature of such habitats, allow growing-season fires, either natural or prescribed, to burn through occupied sites (including dry wetland basins). Avoid dormant-season fires which promote woody shrub growth. Prevent draining, deepening, pollution (from livestock, pesticides, or stormwater), fire exclusion, and introduction of fish in isolated wetlands. Protect natural upland habitat, with no paved roads or firebreaks, for at least 1.5 mi. (2.5 km) around breeding ponds, and maintain broad natural connections among breeding sites. Because of the risk of spreading diseases that affect amphibians, researchers should take care to avoid cross-pond contamination when sampling multiple sites.

References: Jensen et al. 2008, Moler 1992, Pauly et al. 2007, Petranka 1998, Powell et al. 2016, U.S. Fish and Wildlife Service 1999.

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