Common Name: GOPHER FROG

Scientific Name: *Rana capito* LeConte

Other Commonly Used Names: crawfish frog

Previously Used Scientific Names: *Rana aesopus* Cope

Family: Ranidae

Rarity Ranks: G3/S3

State Legal Status: Rare

Federal Legal Status: none

Description: The gopher frog is a stout, medium-sized frog with adults ranging from 6.5 - 10.8 cm (2½ - 4¼ inches) in length. Dorsal coloration is variable and may be brown, gray, or creamy white with numerous reddish brown or dark brown spots. Warts are prominent on the dorsum.

Two raised ridges (dorsolateral folds), often tinged with a yellow or brassy color, run down the back, one reaching from behind each eye to the hind limb. The belly is white or cream-colored with dark mottling in most Georgia populations. There is often yellow on the underside of the hind limbs. The vocal sacs are lateral, extending from the side of the head of singing males when they issue their snore-like calls. Tadpoles can reach 84 mm (3⅜ inch) in body length and are generally olive green. Dark spots, which may be faded, are irregularly scattered over the upper parts of the body and tail.

Similar Species: Adults are unlikely to be confused with other species; however, tadpoles are difficult to positively identify. The snout of a gopher frog tadpole is usually translucent and does not have a light line extending away from each corner of the jaw. These two features help differentiate this species from the tadpoles of the southern leopard frog (*Rana sphenocephala*).

Habitat: In Georgia, the gopher frog is restricted to longleaf pine ecosystems. It occurs in sandy and well drained, longleaf pine - saw palmetto - wiregrass sandhills as well as more poorly drained longleaf pine flatwoods. Except when breeding, the gopher frog is essentially terrestrial and lives in animal burrows. In sandhill habitats, they frequently seek refuge in gopher tortoise burrows and in the burrows of the oldfield mouse (*Peromyscus polionotus*). In the soggier soils of mesic flatwoods, where tortoise are absent, crayfish burrows may be used. The gopher frog breeds in isolated, depressional wetlands, such as cypress ponds, limesink ponds, and Carolina bays. Borrow pits, if they dry regularly, are also used. The longleaf pine uplands and open-canopied, grassy wetlands favored by this species are fire-maintained communities. The wetlands used by breeding gopher frogs are typically ephemeral (seasonally dry) and always lack larger, predatory fish species. Optimal sites for this species are sandhill or flatwoods landscapes large enough to contain a group or cluster of isolated wetlands.

Diet: Adult gopher frogs feed on invertebrates, as well as on other anurans, especially toads.

Life History: Gopher frogs typically migrate to breeding ponds in the fall, winter, and early spring in association with heavy rains. Summer breeding, especially during the passage of tropical storm systems, has also been documented. Adults spend a variable period of time at the breeding pond; males typically remain at ponds longer than females. Adult male frogs call from shallow water along the shoreline, while floating on the surface of the water in deep areas, or while submerged. The call is of very low frequency and has been likened to a snore or low growl. Because of its low frequency, the call can carry a considerable distance. Females attach large egg masses (up to the size of a grapefruit) to emergent vegetation near the water's surface. Egg masses may contain 2,000 or more individual eggs. Average length of time to hatching is approximately a week. Metamorphosis follows an 87-215 day developmental period.

Survey Recommendations: Surveys are best conducted during the breeding season, which usually lasts from October through March, with peaks in October-November and February-March. Listening for the distinctive call of males at potential breeding sites after sunset is perhaps the easiest way to detect gopher frogs. Those experienced in identification of egg masses can search for these during the same period, but during the day. Similarly, those experienced at identification of tadpoles can seine or dipnet for them, ideally March-May. Adults are occasionally encountered on rainy fall and winter nights by slowly driving roads that cross between their upland habitat and breeding wetlands. Funnel traps placed at the mouths of gopher

tortoise burrow have captured frogs at some sites. Drift fences equipped with funnel or pitfall traps and placed adjacent to potential breeding ponds can intercept migrating adults, but are cost and labor intensive.

Range: The gopher frog is restricted to the Coastal Plain of the southeastern U.S. In Georgia this frog is known from the Upper, Middle, and Lower Coastal Plains. Populations are now fragmented due to the decline and continuing loss of naturally functioning, good quality longleaf pine communities.

Threats: Pronounced habitat fragmentation means that small, isolated gopher frog populations are now threatened by extreme weather events such as protracted drought. Populations on private land (except the Ichauway Plantation population) are often not appropriately managed with prescribed fire or monitored. Generally, gopher frog populations are threatened by fire suppression or lack of burning during the growing season. It is likely that the decline of gopher tortoise populations has adversely affected this frog. Any impacts to breeding pond integrity or hydrology (e.g., lack of fire, ruts from firebreaks or off-road vehicles, ditching, diminishing water quality) may have a negative effect on this species. A U.S. Fish and Wildlife Service review noted that this species was rare and declining throughout much of its range. A recent study revealed that gopher frog populations seldom exist on lands managed for commercial forestry purposes.

Georgia Conservation Status: Protected populations occur on Fort Benning Military Reservation, Fort Stewart Military Reservation, Okefenokee National Wildlife Refuge, Joseph W. Jones Ecological Research Center at Ichauway, and Fall Line Sandhills Natural Area.

Conservation and Management Recommendations: Efforts to locate additional populations should continue. Annually monitoring the breeding success of gopher frogs at accessible sites would help provide data useful in determining population trends. Prescribed fire should be employed at both upland and wetland breeding sites, and the frequency and season of burns should mimic the natural fire regime as closely as possible. Stocking of fish into breeding wetlands must be avoided. Any efforts that protect the gopher tortoise and its habitats would likewise benefit the upland needs of gopher frogs. Captive rearing and release efforts at suitable, protected sites may be helpful to recovery efforts.

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D. Stevenson, W. B. Cash, and J. Jensen, Dec. 2007: original account
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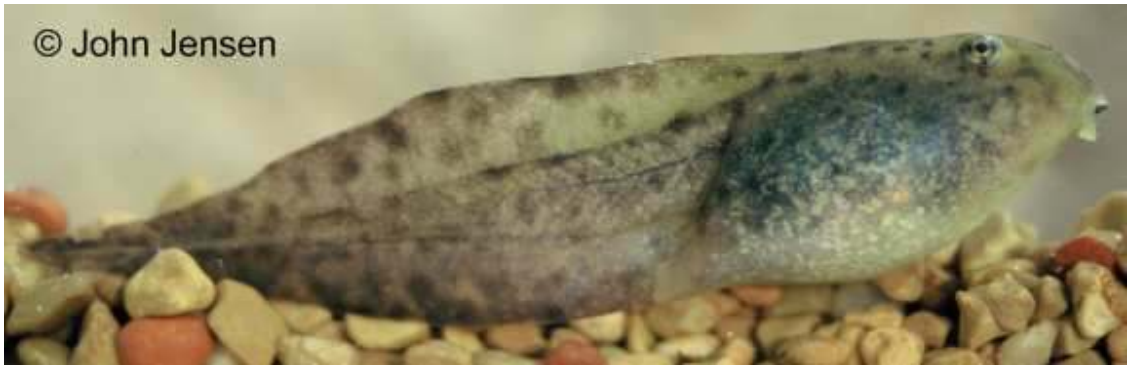

Tadpole