

Northern Leopard Frog



Parks &
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Figure 1: Adult northern leopard frog (*Lithobates pipiens*)
By Colorado Parks and Wildlife, credit: Keith Penner https://cpw.state.co.us/Documents/LandWater/WetlandsProgram/PrioritySpecies/Factsheet-and-Habitat-Scorecard_LeopardFrogs.pdf

Background

The northern leopard frog was historically abundant in Boulder County and throughout Colorado but has been on the decline in recent years. Leopard frogs live in wetlands, small ponds, and lakes where the water is warmer. They start to breed in the spring between March and May, depending on temperature. Females lay eggs in the shallow water just below the surface, attached to sedges or rushes. After the adults move upland to cooler water bodies.

A 2010 survey of 40 historical sites within Boulder County found that only four of those sites showed signs of the leopard frog. By 2019, none of those 40 sites showed any sign of the leopard frog.

Figure 2: Eggs photo

Credit: Wyoming Natural Diversity Database

Species Description

Species: Northern leopard frog (*Lithobates pipiens*)

Identification:

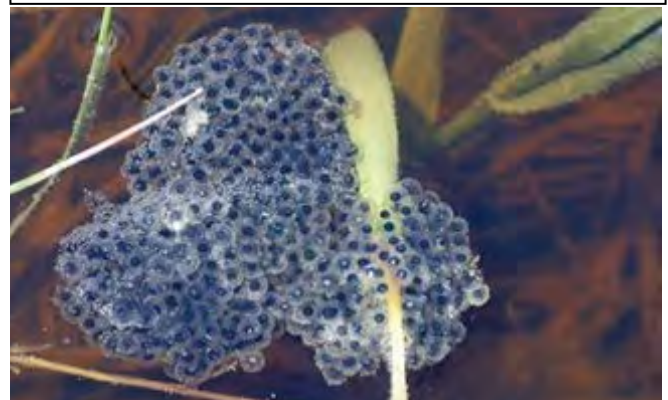
Adults are green or brown with large, dark spots on their back. They have two parallel lines running down their back.

Tadpoles are dark brown, olive green, or grey on top and white underneath, with uneven black spots on their tail.

Eggs are found in large masses. Individual eggs are black on top and whitish underneath.

Lookalikes: American bullfrogs, which are much larger, have no spots, and croak when they leap. Western chorus frogs are much smaller with dark, lateral stripes extending from snout to groin.

Habitat: Leopard frogs prefer cooler climates. They breed in ephemeral ponds devoid of predators. They lay their eggs in the shallows just below the water surface level. Eggs are attached to sedges or rushes in areas exposed to some level of sunshine. After breeding, adults will move to cooler upland, permanent ponds. Their aquatic habitat is characterized by lack of bedrock, sandy shoreline, and extensive vegetation (usually sedges/rushes).



Distribution & Range

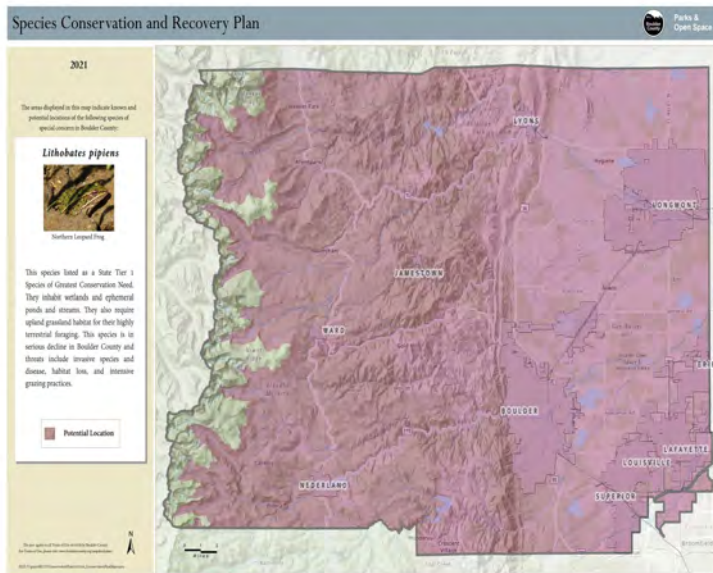


Figure 3: Northern leopard frog

Credit: Gary Eslinger / U.S. Fish & Wildlife Service

Threats

Non-native species: The introduction of non-native species has greatly increased direct predation of leopard frogs. It also has increased competition for foraging and breeding habitat. The most problematic non-native species is the American bullfrog. Bullfrogs prey on leopard frog adults, tadpoles, and eggs. They outcompete leopard frogs for suitable habitat. Introduced, non-native fish such as the largemouth bass prey on the leopard frog at all life stages.

Invasive plants: Invasive plants block corridors that leopard frogs use to travel to and from breeding grounds. They also outcompete native plants, which decreases overall biodiversity. This decrease of plant biodiversity results in decreases of prey items, such as insects. Invasive plants also decrease soil moisture, which in turn limits the size and duration of ephemeral pond establishment.

Disease: Chytridiomycosis (chytrid fungus) is a lethal fungal disease that infects leopard frogs. It is carried by bullfrogs and crayfish who suffer no impacts from the fungus.

Climate change: Climate change has reduced, or is predicted to reduce, water availability. Therefore, suitable habitat will decrease for leopard frogs.

Management Considerations

Predator control: Eradicate bullfrogs and crayfish populations by using nonchemical methods such as shocking and netting. Another effective option is pond draining. Leopard frogs are adapted to lay eggs, and metamorphose into adults in one season. Bullfrogs however, take two seasons to reach adulthood, and therefore tadpoles overwinter in ponds. By draining ponds in the fall, bullfrog tadpoles are eradicated, with no impacts to leopard frogs.

Protect and improve habitat: Eradicate invasive plants and restore native vegetation. Create flat landing areas by excavating stream banks and lentic backwaters for better breeding habitat.

Grazing: Do not graze livestock in riparian areas, including pond edges, during the northern leopard frog breeding season (March-October). If grazing outside of breeding season, ensure that forage consumption levels allow for suitable habitat structure to be available at the start of the

Disclaimer: This summary is not a complete guide to conservation and/or recovery of the species. For more information, please read the full report on our website.

2021


The areas displayed in this map indicate known and potential locations of the following species of special concern in Boulder County:

Lithobates pipiens



Northern Leopard Frog

This species listed as a State Tier 1 Species of Greatest Conservation Need. They inhabit wetlands and ephemeral ponds and streams. They also require upland grassland habitat for their highly terrestrial foraging. This species is in serious decline in Boulder County and threats include invasive species and disease, habitat loss, and intensive grazing practices.

 Potential Location

