

# TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE

WYOMING

SOIL CONSERVATION SERVICE

Biology No. 400

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Subject: LEOPARD FROG\*

## General

The leopard frog (Rana pipiens) is a highly adaptable species, occurring from the lower Sonoran Life Zone to the lower Boreal Zone.

## Food Requirements

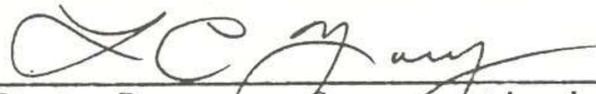
The diet of the leopard frog is governed by availability, not preference. Leopard frogs eat a variety of arthropods such as insect larvae, grasshoppers, mayflies, dragonflies, stoneflies, bugs, beetles, moths, flies, bees, ants, and spiders. They generally wait for food to come to them and don't forage, although they may chase prey flying within their sight.

## Water Requirements

Leopard frogs are capable of absorbing moisture through their skin to compensate for water lost through evaporation and urination, hence adults are able to live independent of bodies of water during the summer. Rain, dew, and soil moisture are all used by leopard frogs as water sources, but the latter is the most dependable and can be adequate even in the absence of rain and dew. The rate of uptake of water from the soil increases with the wetness of the substrate. One study reported that leopard frogs cannot absorb water from the air, nor do they drink it directly.



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\*Information taken from Ecoregion M3113 Handbook and Habitat Suitability Index Models, Wildlife Species Narratives (literature searches), U.S. Fish and Wildlife Service, various dates between 1978-1985.

#### Cover Requirements

In summer months in northern Michigan, leopard frogs preferred grassy areas, wet woods, or swampy areas surrounding ponds and marshes. In grassy areas, the average height of the grass was 16 in. (40 cm), and the density was 2.26 open blades per sq. in. (6.5 cm<sup>2</sup>). Ground covered 100 percent by vegetation is preferred, but not essential. Leopard frogs clear dead vegetation from the wet soil creating "forms," or use crevices and cavities as retreats.

In winter, they hibernate in ponds or marshes, selecting areas of heavy algae growth or areas near stumps and branches of drowned trees. However, they are also found where there is no algae or bottom litter. The lethal minimum temperature during this time is 34°F (1°C).

#### Reproductive Requirements

Leopard frogs breed in the spring in ponds, springs, creeks, rivers, and marshes. Eggs are usually attached to vegetation, but are also found unattached. The water temperature can range from 37° to 95°F (3° to 35°C). The depth of the water and its clarity are not important factors.

#### Special Habitat Requirements

No special habitat requirements were found.

#### Interspersion Requirements

Leopard frogs are capable of traveling great distances, sometimes going more than 174 yds (159 m) in a single night. In early summer, there is an exodus from the breeding ponds to summer residences. Recently metamorphosed leopard frogs commonly travel 875 yds (800 m) in two to three nights, some establishing adult summer residences 3 mi (5 km) from their original ponds. Others remain within 11 yds (10 m) of their pond. Summer residences 437 to 875 yds (400 to 800 m) from their original pond seems to be average. Older adults return to their previous residences.

The mean size of the summer home range in northern Michigan varied from 80 sq yds to 600 sq yds (65 to 503 m<sup>2</sup>) depending on the size and sex of the individual and depending on a variety of other factors such as the area available for habitation and population density. Within this area, food, cover, and proper soil moisture must be present. One study found the average distance to water to be 41 to 60 yards (37 to 55 m), but water has not been shown to be required.

#### Special Considerations

Leopard frogs will live close to human habitation, occupying fields, irrigation canals, and breeding in gravel pit ponds. The presence of trout and bullfrogs adversely affects the leopard frog.