

## Mink Frog

*Lithobates septentrionalis*

Federal Listing	N/A
State Listing	SGCN
Global Rank	G5
State Rank	S3S4
Regional Status	



Photo by Pauline Quesnelle

### Justification (Reason for Concern in NH)

Mink frogs are seldom seen or recorded because of their extremely aquatic, shy nature and unique habitat preferences and therefore few data are available for the species in New Hampshire. Its preference for the combination of cold, oxygen rich water and lily pads may restrict mink frogs to a few number of suitable habitats. Lily pads are typically associated with warmer water and are not a common feature of cold, northern water bodies (A. Schafermeyer, New Hampshire Fish and Game, personal communication). Water temperature may restrict mink frogs to northern regions because the higher oxygen level in colder water is required for embryo development (Stockwell 1999). When water is too warm, eggs in the center of an egg mass do not receive sufficient oxygen and the death and decomposition of these eggs can kill surrounding embryos in the egg mass (Stockwell 1999). Because mink frogs are at the southern limit of their geographic range in northern New Hampshire and are dependent on cold waters, there is some concern that the species will be adversely affected by projections of a warming climate (Popescu and Gibbs 2009).

### Distribution

Mink frogs are restricted to areas north of 43\* latitude North in Maine west to Minnesota and into northern Ontario, Quebec, and Labrador (Stockwell 1999). Historical locations of mink frogs in New Hampshire appear to be clustered in the northern Connecticut River watershed in Coos and Grafton counties. This distribution pattern is an artifact of the biological surveys conducted by Oliver and Bailey in 1938 and 1939 for the NHFG. Reptile and amphibian surveys, incidental to fish distribution surveys, were conducted in the Connecticut River watershed but not in the Androscoggin and Saco watersheds. More recent reports have revealed occurrences of mink frog across Coos County (Berlin, Errol, Pittsburg, Wentworth's Location), and south to Livermore and Thornton in Grafton County. Mink frog can be locally common in New Hampshire North Country water bodies such as along the Magalloway River in Wentworth's Location and marshes at the edge of Lake Umbagog (L.Wunder, Lake Umbagog National Wildlife Refuge, personal communication).

### Habitat

The mink frog (*Lithobates septentrionalis*) inhabits the cold water of lakes, ponds, stream edges, springs and occasionally peatlands of northern New Hampshire. Known as "the frog of the north", mink frogs persist at the highest latitude of any North American anuran (Hedeen 1986). They are almost entirely aquatic, preferring shallow, permanent open water with abundant emergent vegetation, especially lily pads (*Nymphaea spp.*) and pickerelweed (*Pontedaria cordata*) for foraging, breeding, and hibernating (DeGraaf and Yamasaki 2001). Adults often feed from lily pads far from shore; adult and larval aquatic invertebrates are common prey (Conant and Collins 1998, Stockwell

## Appendix A: Amphibians

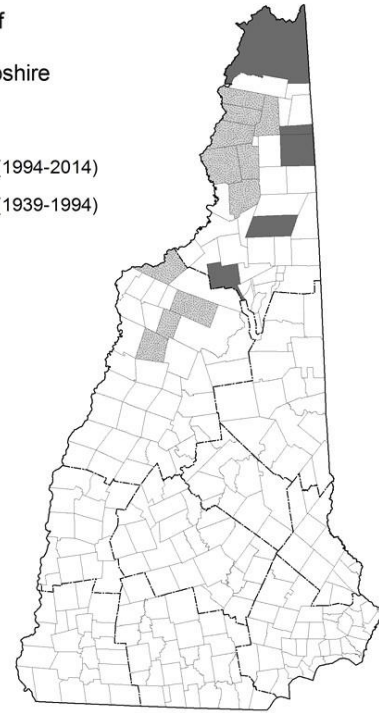
1999). Eggs are laid in a globular, jelly mass attached to submerged vegetation, especially the stems of spatterdock (*Nuphar* spp.) or water lily. Egg masses eventually fall from the stems and drop to the bottom where they develop (Stockwell 1999). Beaver (*Castor canadensis*) activity may have a positive affect on mink frog habitat due to beaver dam conversion of terrestrial to wetland habitat – mitigating drought or temperature extremes. Further, beaver dams are associated with increased landscape heterogeneity that may favor dispersal of a desiccation-prone species such as the mink frog (Popescu and Gibbs 2009).

### NH Wildlife Action Plan Habitats

- Lakes and Ponds with Coldwater Habitat
- Northern Swamps
- Marsh and Shrub Wetlands
- Open Water
- Peatlands

Distribution of  
MINK FROG  
in New Hampshire

■ Current (1994-2014)  
■ Historic (1939-1994)



Distribution Map

### Current Species and Habitat Condition in New Hampshire

No information is available to evaluate the health of mink frog populations.

### Population Management Status

Not assessed because of insufficient information.

### Regulatory Protection (for explanations, see Appendix I)

- NHFG Rule FIS 803.02. Importation.
- NHFG Rule FIS 804.02. Possession.
- NHFG Rule FIS 811.01 Sale of Reptiles.
- NHFG FIS 1400 Nongame special rules
- Fill and Dredge in Wetlands - NHDES
- Comprehensive Shoreland Protection Act - NHDES
- Clean Water Act-Section 404

## *Appendix A: Amphibians*

### **Quality of Habitat**

Not assessed because of insufficient information.

### **Habitat Protection Status**

Not assessed because of insufficient information.

### **Habitat Management Status**

Not assessed because of insufficient information.

### **Threats to this Species or Habitat in NH**

*Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a “medium” or “high” score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.*

There are no threats ranked high or moderate for this species.

### **List of Lower Ranking Threats:**

Mortality or species impacts (reduced fitness) from contaminants

Mortality and species impacts (decreased fitness) from various diseases (ranavirus, chytrid)

Disturbance and degradation from increased temperatures that cause droughts and reduce habitat suitability

### **Actions to benefit this Species or Habitat in NH**

#### **Monitor the distribution, condition, and risk to mink frog populations.**

#### **Objective:**

Monitor the distribution, condition, and risk to mink frog populations.

#### **General Strategy:**

Several potential threats have been identified for the species. However, there is minimal information available in NH to assess appropriate actions to implement at this time. NHFG will encourage reports through the reptile and amphibian reporting program to further refine the species distribution in NH. The condition of these sites needs to be determined.

#### **Political Location:**

Coos County, Grafton County

#### **Watershed Location:**

Androscoggin-Saco Watershed, Upper CT Watershed

## References, Data Sources and Authors

### Data Sources

Status and ranking information was taken from NatureServe (2014). New Hampshire Reptile and Amphibian Reporting Program (RAARP) records, Taylor (1993), and Oliver and Bailey (1939) were the primary sources of locality records. Habitat and life history information was taken from published literature.

Threat assessments were conducted by a group of NHFG biologists (Michael Marchand, Brendan Clifford, Loren Valliere, Josh Megysey).

### Data Quality

The distribution, habitat use, and condition of mink frog populations in New Hampshire are not well understood. This assessment was limited to records in scientific reports, records reported to the New Hampshire RAARP by an expert, and to reports that included a specimen or clear photograph.

### 2015 Authors:

Joshua Megysey, NHFG; Michael Marchand, NHFG

### 2005 Authors:

Kim Tuttle, NHFG

## Literature

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## *Appendix A: Amphibians*

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