

An Illinois
Species Status Assessment
for
Scaleshell Mussel



Photo courtesy of Missouri Department of Conservation

Illinois Department of Natural Resources
September 2022

Section 1. Species Description

Characteristics

Scaleshell mussel (*Leptodea leptodon*) is an elongate, rhomboidal, mussel that may grow to 10-12 cm (4-4.75 in). The periostracum is brown or dark yellow with many faint green rays while the nacre is white to light purple. The dorsal margin is straight and ventral margin rounded. Beaks are small with inconspicuous ridges.

Scaleshell are long-term brooders, meaning they spawn in fall and females hold glochidia until release in the following spring or early summer. Freshwater Drum is the only species identified as a potential host for Scaleshell.

The Freshwater Mollusk Conservation Society has moved Scaleshell to the genus *Potamilus* (Freshwater Mollusk Conservation Society 2021). The Illinois Endangered Species Protection Board continues to use *Leptodea*, and so the two names are considered synonymous in this document.

Habitat

Scaleshell may be found in low gradient medium or large rivers. It typically is associated with stable substrates and slow to moderate velocity waters.

Section 2. Qualitative Conservation Status

Conservation status of Scaleshell has been synthesized at multiple spatial scales using qualitative assessment frameworks (Table 1).

Table 1. Global, regional, and subregional conservation status of Mottled Sculpin.

<u>Assessment</u>	<u>Status</u>
Global Rank (G-rank) ¹	G1 (critically imperiled)
Midwest Species of Greatest Conservation Need ²	SGCN
Subregional Rank (S-rank), 2019 ³	S1 (critically imperiled)
Illinois Conservation Status ⁴	Endangered
Federal Conservation Status ⁵	Endangered

1. NatureServe (2022)

2. Terwillger Consulting (2021)

3. Feng et al. (2021). Assessment conducted using data through 2018.

4. Illinois Endangered Species Protection Board (2020)

5. US Fish and Wildlife Service (2022)

Scaleshell is critically imperiled globally and in Illinois. It is a Midwest regional Species of Greatest Conservation Need. Scaleshell is endangered in Illinois and has been listed since 1989. It was listed as endangered by the US Fish and Wildlife Service in 2001.

Scaleshell is imperiled in Arkansas, critically imperiled in Illinois, Missouri, Oklahoma, and South Dakota, and extirpated elsewhere (NatureServe 2022; Figure 1). Although NatureServe (2022) categorizes Scaleshell as imperiled in Nebraska the species' occurrence in the state is debated.

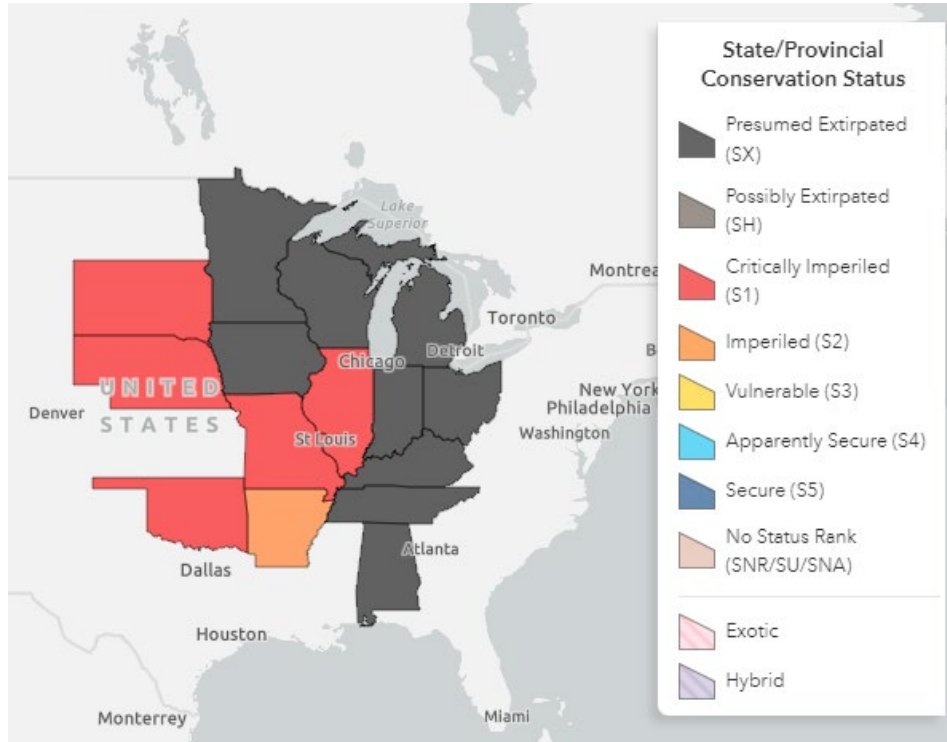


Figure 1. Subnational conservation ranks for Scaleshell (NatureServe Explorer 2022).

Section 3. Distribution

Historic Range

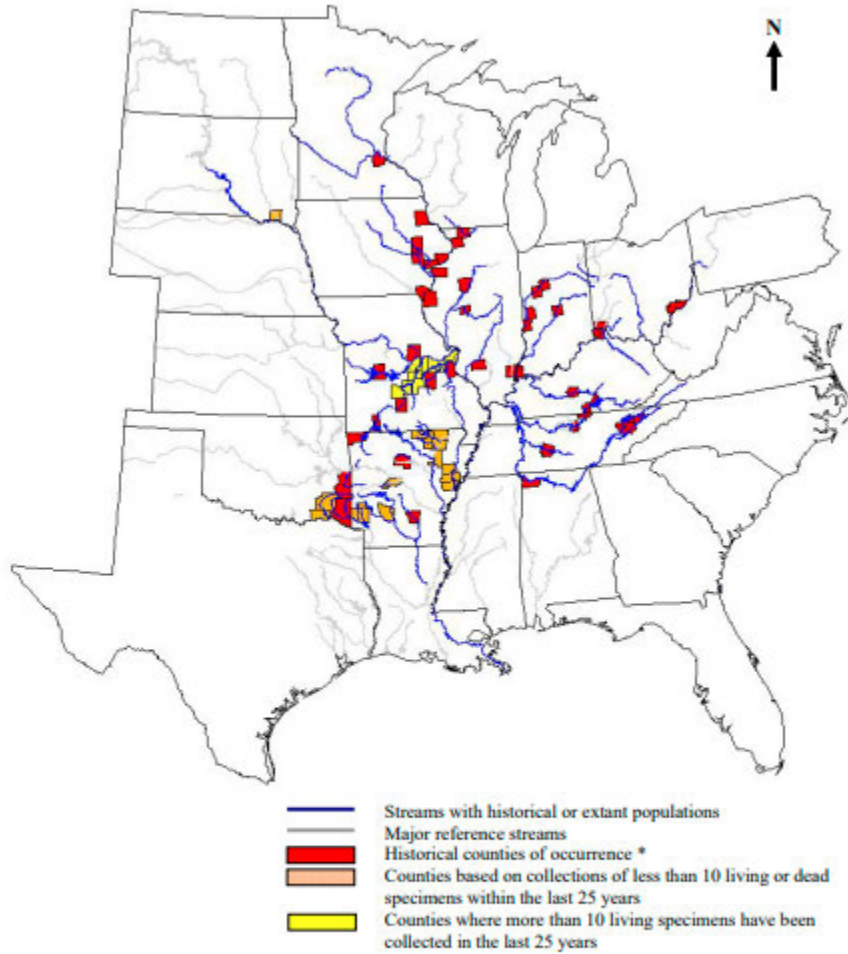
The historic range of Scaleshell includes 13 states in the Mississippi River basin, including Illinois and all states bordering Illinois (US Fish and Wildlife Service 2010; Figure 2). Records from Michigan, Nebraska, Kansas, Mississippi, and New York have been discounted or cannot be confirmed. Most accounts from the early 20th century describe the species as widespread but locally uncommon.

In Illinois Scaleshell occurred in the Mississippi River, Peconica River, Illinois River, Kaskaskia River, and Wabash River (Douglass and Stodola 2014; Figure 3). No live individuals were been recorded between approximately 1950 and 2013.

Current Distribution

In the past 25 years Scaleshell has been recorded only in Missouri, Arkansas, Oklahoma, South Dakota, and Illinois (US Fish and Wildlife Service 2022; Figure 4). In only three streams of Missouri can it be found consistently; elsewhere it is exceedingly rare (US Fish and Wildlife Service 2010).

In Illinois Scaleshell has been recorded live just once, in the Illinois River, since 1950 (Figure 3).



* Not all historical counties are shown. In some cases, geographical information of historical records is limited to stream names. In those cases, only the stream is depicted in blue and no county information is provided. These streams include the Licking River in Kentucky; Scioto, St. Mary's, and East Fork Little Miami rivers in Ohio; and Mulberry River in Arkansas.

Figure 2. Counties with Scaleshell records (US Fish and Wildlife Service 2010). Note the 2013 Illinois record is not included in this figure (see Figure 3).

Scaleshell (*Leptodea leptodon*)

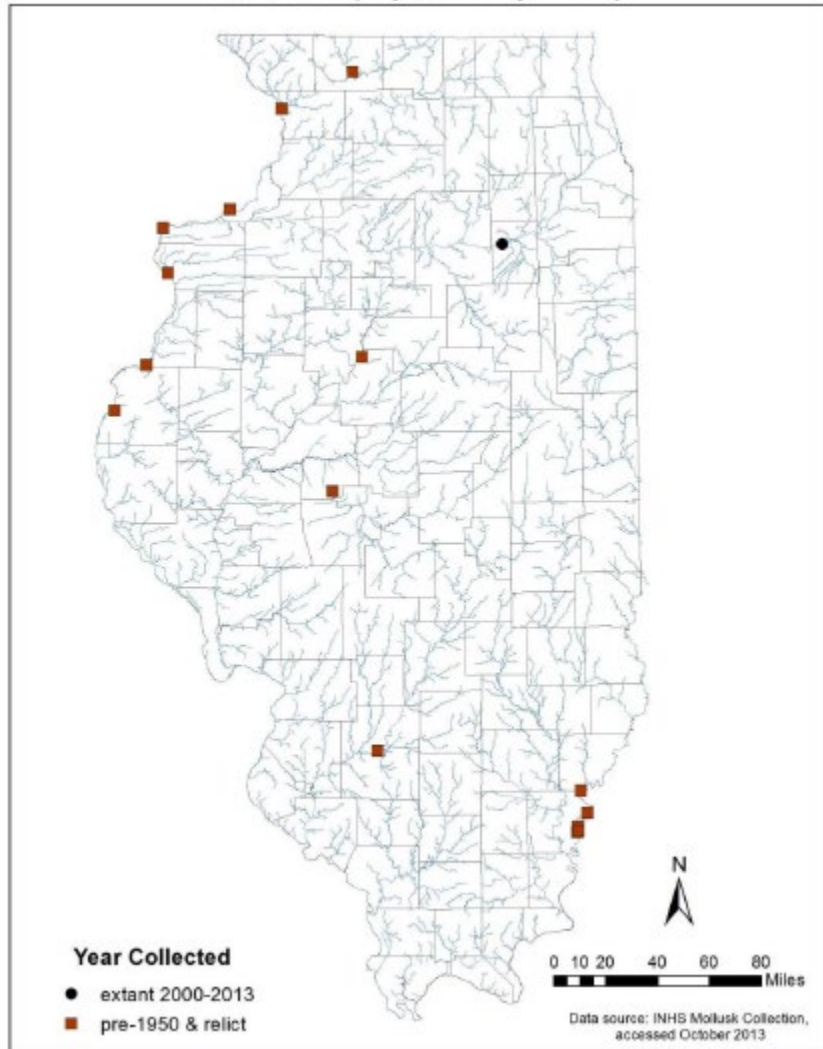


Figure 3. Illinois occurrence records of Scaleshell (Douglass and Stodola 2014). The single extant occurrence was recorded in 2013.



Figure 4. Current US distribution of Scaleshell (US Fish and Wildlife Service 2022). Shaded areas are counties or watersheds.

Section 4. Abundance Estimate

Scaleshell has been recorded live only once in the past approximately 70 years: one live individual was recorded during 1.75 person-hours of sampling effort. No reasonable local or statewide abundance estimate is possible given the limited information available.

Section 4. Population identification and viability

Just one Element Occurrence (EO) includes a source feature recorded within the past 70 years. The Illinois River [REDACTED] EO is ranked D (poor viability; Hammerson, et al. 2020) due to low abundance and absence of other EOs in the upper Illinois River. All other EOs (see Figure 3) are ranked X (extirpated).

Section 5. References

Douglass, S. and A. Stodola. 2014. Status revision and update for Illinois’s freshwater mussel Species in Greatest Need of Conservation (T-82-R-1). Illinois Natural History Survey technical report 2014(47).

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