



**Natural Heritage
& Endangered Species
Program**

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Massachusetts Division of Fisheries & Wildlife

**Appalachian Brook Crayfish
*Cambarus bartonii***

State Status: **None**
Federal Status: **None**

DESCRIPTION: The Appalachian Brook Crayfish is a medium-sized (150 mm in total length) crayfish in the crustacean order Decapoda without any particular or outstanding markings. Adults tend to be a uniform brownish-tan color, varying to reddish-brown in older adults. Juveniles are usually lighter colored. The tips of the claws and the rostrum (a projection between the eyes) margins in older adults can be purplish-red. *Cambarus bartonii* can be most easily separated from other crayfish in Massachusetts by the shape of the rostrum, which is quite broad, short, and blunt, with only a short acumen (point) produced anteriorly. Males and females are distinguished by the presence in males of highly modified pleopods (abdominal appendages) on the first two abdominal segments. The pleopods are unmodified in females. The tips of the first pair of pleopods in males are flattened and sharply bent.

SIMILAR SPECIES: One other species of crayfish in Massachusetts, *Cambarus robustus*, is similar to *C. bartonii*. *Cambarus robustus* is not native to the state and occurs in scattered drainages outside the range of *C. bartonii* in Massachusetts. In *C. robustus*, the rostrum is longer, narrower, and the acumen is more pronounced

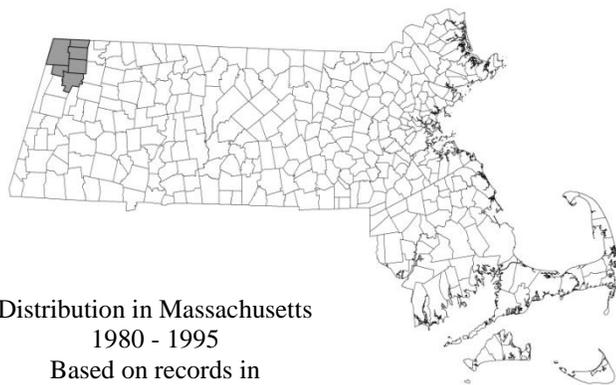


Photo by Matt Burne

and the species reaches a larger size than *C. bartonii*. Other more subtle but distinct features separate *C. robustus* from *C. bartonii* and these can be determined from any established identification guide.

RANGE: The Appalachian Brook Crayfish is widely distributed throughout eastern North America except in coastal regions and interior New England. In Massachusetts, the species is confined to the Hoosic River drainage system in the northwestern part of the state.

HABITAT IN MASSACHUSETTS: In Massachusetts, the Appalachian Brook Crayfish is typically found in upland and mountain streams, reaching an altitude of about 1550 feet (470 m). It occurs less commonly in unaltered sections of the Hoosic River where there is moderate to strong current. The species tunnels under large rocks and boulders which are well imbricated in the substrate in mid-stream and along the bank.



Distribution in Massachusetts
1980 - 1995
Based on records in
Natural Heritage Database

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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LIFE HISTORY: The Appalachian Brook Crayfish is quite secretive and little has been learned of its life history. Breeding probably occurs anytime adults of either sex encounter one another. Not all fully grown males can engage in sexual activity at a specific time because males of all species in the family Cambaridae undergo cyclic changes in the reproductive morphology. During the inactive phase, the sexual organs of the male are reduced and become non-functional. Once breeding has occurred, females become very inactive and find a location that will successfully conceal them during the egg-laying and brooding period. A small number (50 - 60) of large eggs are laid by the female and attached to the underside of her abdomen. Following hatching, the young remain attached to the mother through a few molts until dispersed by her by active flipping of the abdomen. Young of the year crayfish have been observed throughout the summer.

POPULATION STATUS AND LIMITING

FACTORS: The Appalachian Brook Crayfish is restricted for the most part to upland streams in the hills surrounding the Hoosic River. . Habitat within the mainstem of the Hoosic River has been significantly altered, and therefore the distribution of the Appalachian Brook Crayfish may be restricted to intact tributaries. The majority of Massachusetts crayfish fauna appear to be introduced. Further surveys need to be conducted to understand the distribution of native and introduced crayfish species in Massachusetts, and to determine if introduced species pose a threat to the Appalachian Brook Crayfish in Massachusetts.

REFERENCES:

- Hobbs, H.H. 2001. Chapter 23: Decapoda in J.H. Thorp and A.P. Covich (Ed.) *Ecology and Classification of North American Freshwater Invertebrates*. 2nd Edition. San Diego, California: Academic Press
- Crocker, D.W. 1979. The Crayfishes of New England. *Proceedings of Biological Society of Washington* 92(2): pp 225-252.

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