

## Newberry Burrowing Crayfish

### *Distocambarus youngineri*

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#### DESCRIPTION

#### Taxonomy and Basic Description

*Distocambarus youngineri* a small species, 50 mm (2 in.) in total length, with small pigmented and faceted eyes. The rostrum is spatulate and lacks spines. The chelae are strongly depressed and the palm is studded with squamous tubercles (NatureServe2011).

#### Status

NatureServe (2011) identifies *D. youngineri* as critically endangered in South Carolina (S1) and globally (G1), which seems appropriate for such a rare species. Taylor et al. (1996, 2007) recommend listing the species as endangered. Recently, the Newberry Burrowing Crayfish was included on a list of 404 species being petitioned for consideration as candidates for federal protection (USFWS 2011).



#### POPULATION SIZE AND DISTRIBUTION

*D. youngineri* is a very rare obligate burrower, endemic to South Carolina. It has been found only in Newberry County at a total of 19 collection sites, primarily within a portion of the Saluda River Basin but also at one site within the Broad River Basin. One location where this species was found was in Sumter National Forest; however, the majority of its occurrences are found on private land (Eversole 1995; Eversole and Welch 2011). Searches in several other nearby counties did not locate any Newberry Burrowing Crayfish (Eversole and Welch 2011).

#### HABITAT AND NATURAL COMMUNITY REQUIREMENTS

*D. youngineri* is found in moist, terrestrial areas with leaf litter and a mixed-hardwood overstory, usually near stream headwaters or intermittent streams (Eversole 1995). Although it is found in the general area of headwater streams, it is not found very close to streambanks and does not appear to be directly associated with the streams themselves (Eversole 1995). In areas where *D. youngineri* is found, the soil becomes saturated and may be covered with shallow water during periods of precipitation in the winter, spring, and sometimes into the early summer. Water has been found in the burrows even under drought conditions (Eversole 1995). This species appears to have been extirpated from its type locality following a clearcut in the area during 1989 (Eversole 1995). Most of the sites where *D. youngineri* has been recorded are in moist, wooded areas, but it has also been found in a selectively logged pine stand and in grass lawn areas.

## CHALLENGES

There is concern that *D. youngineri* may be in decline. Eversole (1995) found the species at only 6 sites despite intensive survey efforts; it now appears to be extirpated from one of those sites. A more recent survey (Welch and Eversole, unpublished data) found populations at three new sites. However, all of these new locations were still within a small portion of Newberry County. Given the extremely restricted distribution and low population numbers of *D. youngineri*, it should be protected. Land that this species inhabits should be protected, since its restricted distribution makes *D. youngineri* so vulnerable.

## CONSERVATION ACCOMPLISHMENTS

*D. youngineri* is also a species of federal concern, and status surveys funded by the US Fish and Wildlife Service have been conducted for this species.

## CONSERVATION RECOMMENDATIONS

- Conduct research to determine the distribution and population status of *D. youngineri*.
- Collaborate with land trusts as well as other federal, state, and local agencies and private conservation groups to protect areas where *D. youngineri* is located. Protection methods used by SCDNR and/or other groups can include conservation easements or fee-simple land purchases.
- Determine the importance of alterations to the groundwater table to population stability of *D. youngineri*.
- Develop and conduct landowner and general education programs that stress the unique nature of terrestrial burrowing crayfish and their importance in South Carolina.

## MEASURES OF SUCCESS

Collection of data that better determines the distribution and population status of *D. youngineri* may be considered a measure of success. Achieving protection for areas where *D. youngineri* is located would also be considered a measurement of success. Completion of groundwater investigations and determination of recommendations to protect this species would also be considered a sign of success. Assessing participation in education programs would assist in measuring success of the programs.

## LITERATURE CITED

- Eversole, A.G. 1995. Distribution of three rare crayfish species in South Carolina, USA. *Freshwater Crayfish*. 8:113-120.
- Eversole, A.G. and S.M. Welch. 2011. Conservation of imperiled crayfish – *Distocambarus (Fitzcambarus) youngineri* Hobbs and Carlson 1985 (Decapoda: Cambaridae). *Journal of Crustacean Biology*. 30(1): 151–155.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>.

Taylor, C.A., G.A. Schuster, J.E. Cooper, R.J. DiStefano, A.G. Eversole, P. Hamr, H.H. Hobbs III, H.W. Robison, C.E. Skelton, and R.F. Thoma 2007. Reassessment of the Conservation Status of Crayfishes of the United States and Canada after 10+ Years of Increased Awareness. *Fisheries*. 32(8):372–389.

United States Fish and Wildlife Service (USFWS). 2011. Endangered and threatened wildlife and plants; partial 90-day finding on a petition to list 404 species in the southeastern United States as endangered or threatened with critical habitat. *Federal Register* 76: 59836–59862.