

USACE Natural Resources Management

Crustaceans



Guyandotte River Crayfish & Big Sandy Crayfish

Guyandotte River Crayfish (*Cambarus veteranus*): This is a freshwater, tertiary burrowing crustacean. Adult body length ranges from 3 to 4 inches. The main body section, or cephalothorax, is streamlined and elongate with two well-defined cervical spines. The coloration of the carapace, or shell, ranges from olive brown to light green, and the cervical groove is outlined in light blue, aqua, or turquoise. The dorsal plates covering the abdomen range from olive brown to light brown to light green and have a red outline. The rostral margins and post orbital ridges are crimson red.

Status: *Endangered*, listed 2016

NatureServe: *Critically Imperiled*



Big Sandy Crayfish (*Cambarus callainus*): This is a freshwater, tertiary burrowing crustacean. Adult body length ranges from 3 to 4 inches. The main body section, or cephalothorax, is streamlined and elongate with two well-defined cervical spines. Shell coloration ranges from olive brown to light green, and the cervical groove is outlined in light blue, aqua, or turquoise. The dorsal plates on the abdomen range from olive brown to light brown to light green and are outlined in red. The walking legs range in color from light green/green to green blue.

Status: *Threatened*, listed 2016

NatureServe: *Imperiled*



Order: *Decapoda* is a significant order within the class *Malacostraca*. Decapods include marine, freshwater, and semiterrestrial crayfish, crabs, and shrimp. In total, around 10,000 species having been described in this order. (Ecology and Classification of North American Freshwater Invertebrates (2nd Edition), H.H. Hobbs III, 2001)

Photos Left to Right: Guyandotte River crayfish, Big Sandy Crayfish, & Big Sandy Crayfish (Zachary Loughman, West Liberty University)

Management and Protection:

- The historical range of the Guyandotte River crayfish included streams throughout the Upper Guyandotte River basin in Wyoming County and parts of Logan and Mingo counties in West Virginia. This species is now thought to occupy only two streams in Wyoming County. (USFWS)
- Big Sandy crayfish's historical range likely included streams throughout the upper Big Sandy River basin, which covers 10 counties in Kentucky, Virginia, and West Virginia. However, the species is now restricted to six isolated subpopulations. (USFWS)
- Total population size for these species are not known, but numbers have declined in conjunction with the decline of suitable habitat. (USFWS)
- The primary threat to these species is the loss and degradation of habitat stemming from erosion and sedimentation resulting from mining, timber harvesting, unpaved roads, and off-road vehicle (ORV) use.
 - Actions that reduce threats to these species include: not driving ORVs through streams, utilizing BMPs for sediment and erosion control during timber harvest, planting trees and native woody vegetation along stream banks, replace or remove culverts and low-water bridge crossings that are barriers to passage.



USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the U.S. Army Corps of Engineers has expended over \$14,000 in efforts related to the Guyandotte River Crayfish and Big Sandy Crayfish. The vast majority of these expenditures were for the Big Sandy Crayfish. Costs have been incurred by the Environmental Stewardship, Flood Risk Management, and Regulatory Business Lines.



Big Sandy Crayfish = \$13,958 (2017)

What is USACE NRM Doing: In the FY20 NRM Assessment, the Big Sandy Crayfish was listed by a single project within the Great Lakes and Ohio River Division's Huntington District. John W Flannagan Dam and Reservoir was noted as having the potential for this species to occur at the project.

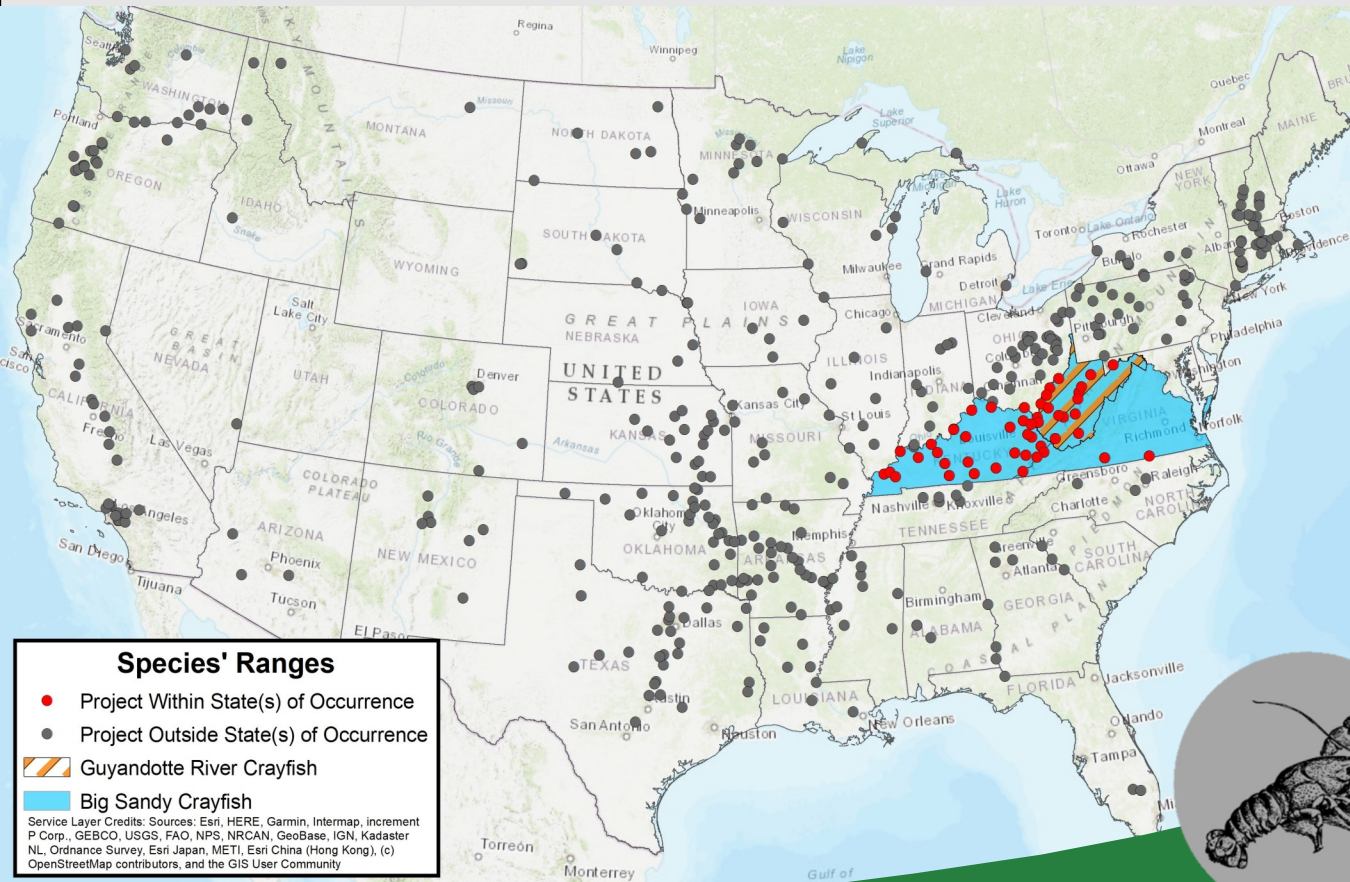


Photo, above: An aerial image of John W. Flannagan Dam. Photo, left: The dam at R.D. Bailey Lake.

Additionally, in the FY20 NRM Assessment, the Guyandotte River Crayfish was also listed by a single project within the Great Lakes and Ohio River Division's Huntington District. R.D. Bailey Lake was noted to have occasional occurrences of this species.



This fact sheet has been prepared as an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced to provide its readers information about best management practices related to special status species. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.



Source: Map provided by Ashleigh Boss, Biological Scientist, Institute for Water Resources

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