

THE HEAT IS ON

Species feeling the effects of climate change



Devils Hole Pupfish

Cyprinodon diabolis

Region:

Southwest

Area affected:

Ash Meadows National
Wildlife Refuge

Climatic change:

Warming waters

Impact:

Decreased oxygen supply

ABOUT THIS SPECIES

Just an inch long and brilliant blue in color, the Devils Hole pupfish is one of our most imperiled species. They are found in only one place on Earth, a geothermal spring called Devils Hole in the Mojave Desert east of Death Valley National Park. Devils Hole is a limestone cavern about 400 feet deep, and only six by 18 feet wide at the surface, aquifer-fed and about 92 degrees F year-round. The fish live in the top 80 feet of the pool, where they feed on diatoms that grow on an underwater ledge that sunlight reaches. The Devils Hole pupfish has been listed as “endangered” since 1973 when there were about 500 individuals; today there are fewer than 100.

DESCRIPTION OF IMPACT

Due to the geothermal nature of Devils Hole, the pupfish is already living near the metabolic extreme at which fish can survive, because water at that temperature holds very little oxygen. Living so near the edge of their tolerance leaves very little margin for change, but over the past few years, water temperatures in the top part of the pool have risen about one degree. Though this amount of warming may seem negligible, it reduces the optimal development period for pupfish larvae by 10 percent, which means the period when temperature and food availability are just right for egg hatching and development of young has decreased from ten weeks to nine. **In 2013, the Devils Hole pupfish population dropped to an all-time low of just 35 fish.** The population have recovered somewhat, to about 90 individuals, but the species is still teetering on the brink of extinction.

References

University of California-Berkeley. 2014. Biologists try to dig endangered pupfish out of its hole. *ScienceDaily*. September 9. www.sciencedaily.com/releases/2014/09/140909093829.htm

University of Nevada, Reno. 2014. Climate change puts endangered Devils Hole pupfish at risk of extinction. *ScienceDaily*. August 28. www.sciencedaily.com/releases/2014/08/140828170017.htm



DEFENDERS OF WILDLIFE

1130 17th Street, NW
Washington, DC 20036-4604

For more information on other wildlife affected by climate change, visit our website at www.defenders.org/climatechange