

THE HEAT IS ON

Species feeling the effects of climate change



Westslope Cutthroat Trout

Oncorhynchus clarki lewisi

Region:

Northwest

Area affected:

Flathead River Basin

Climatic change:

Warming streams

Impact:

Hybridization

ABOUT THIS SPECIES

Native to western Montana and northern Idaho, the westslope cutthroat trout gets its common name from the distinctive red marks across its throat and its scientific name from its discoverers, explorers Lewis and Clark. These trout require cold, clean water with very little sediment and access to deeper pools or lakes where they can survive the winter. The fish take about four or five years to mature and spawn in the upper reaches of mountain streams. They consume a wide variety of insects, a fact that makes them popular with anglers and susceptible to overfishing. Other threats include land-use activities and related effects that cause sedimentation in streams, like mining, grazing, logging and fires. In addition, competition from larger, introduced sport fish like brook, brown and rainbow trout has eliminated this native trout from much of its former range.

DESCRIPTION OF IMPACT

Competition from introduced species is only part of the problem. Westslope cutthroat trout are also known to breed with non-native rainbow trout, and this hybridization threatens the existence of the native species. Rainbow trout prefer warmer water than cutthroats, and for some time remained in lower elevation, warmer waters, leaving higher elevation strongholds for the cutthroat, particularly in the Flathead River Basin of Montana. In recent decades, however, this area has experienced reduced springtime precipitation and higher summer temperatures, increasing summer stream temperatures. Water temperatures measured above 48 degrees F (the threshold for rainbow trout) have doubled since 1978. This has encouraged rainbow trout to move upstream, increasing hybridization with cutthroats by 27 percent. **Genetically pure westslope cutthroat trout now persist in only 10 to 20 percent of their former range.**

References

Isaak, D.J. et al. 2012. The past as prelude to the future for understanding 21st-century climate effects on Rocky Mountain trout. *Fisheries* 37: 542-556. http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temp/downloads/2012_PastAsPreludeForClimateEffectsOnRockyMountainTrout.pdf

Muhlfield C.C. et al. 2014. Invasive hybridization in a threatened species is accelerated by climate change. *Nature Climate Change* 4: 620-624. <http://www.nature.com/nclimate/journal/v4/n7/full/nclimate2252.html>

Santella, C. 2014. In Montana, cutthroat trout are hungry trout. *The New York Times*. April 9. <http://nyti.ms/1qiBg2j>



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