

By ~~Stefan~~ Stefan 2008, Science Editor

[Global Warming Wipes Out Trout Populations in Southern Appalachians](#)

And this in less than 100 years

53 to 97 % of natural trout populations in the Southern Appalachians could disappear due to the warmer temperatures predicted under two different global climate circulation models according to USDA Forest Service (FS). The three species of trout that live in the Southern Appalachians, native brook (*Salvelinus fontinalis*) (photo) and the introduced rainbow trout (*Onchorhynchus mykiss*) from Western North America and brown trout (*Salmo trutta*) from Europe, require relatively low stream temperatures to survive. Average air temperature in the United States has increased by about 0.6° C (1o F) over the last 100 years, and is projected to increase 3 to 5°C (5.4 to 9o F) over the next century and this will also lead to an increase of water temperatures. "Trout species in the Southern Appalachians are already at the southern limits of their ranges," says biologist Patricia Flebbe from FS Southern Research Station unit in Blacksburg, Virginia. Flebbe and her team produced a regional map of wild trout habitat based on information from samples, expert knowledge, and suitable land cover to be applied on a simulation about the warming temperatures. They combined to the map elevation and latitude factors adding the temperature rise over the next 100 years to get information about how much trout habitat will be left. "Estimates of how much temperature will increase in the Southern Appalachians varies according to the global circulation models used, which, in turn, affects projections of habitat loss," says Flebbe. "Using predictions from the Hadley Centre, about 53 percent of trout habitat would be lost over the next century. Under the more extreme model from the Canadian Centre, 97 percent would be lost." "This habitat is already fragmented due to land use change, road building, channelization, and other disturbances and would increase with the warming weather. "As the remaining habitat for trout becomes more fragmented, only small refuges in headwater streams at the highest levels will remain," says Flebbe. "Small populations in isolated patches can be easily lost, and in a warmer climate, could simply die out." "Although all three of these trout species will probably remain viable in other parts of their range, the world could lose the brook trout strain unique to the region," she adds. "And, as a result, trout fishing in the Southern Appalachians may become a heavily managed experience." "And, amongst the three species, the brook trout seems to be the most sensitive to warming waters.