

Brett Ferraro
Junior Division Environmental Sciences
Troubled Waters?

If the water treatment plant in Avon affects the temperature, dissolved oxygen (DO), or the pH of the Eagle River in ways that are harmful to brown trout, the Avon water treatment plant may be contributing to the decline in the number and size of brown trout near Arrowhead, which is downstream of the water treatment plant. Testing was done once each month from May to November, 2009 at the same two sites on the Eagle River, using the same materials each month. One testing site was upstream from the effluent discharge of the Avon water treatment plant, and the other testing site was downstream from the effluent discharge. The temperature, dissolved oxygen levels and pH levels of the river water were tested at each site. I found that the water downstream was warmer than the water upstream by 1°C, except in November, when the water downstream was colder by 1°C. There was no significant difference in the dissolved oxygen levels between the water at the upstream site and the water at the downstream site. The pH levels at the downstream site were higher than the upstream site in 4 out of 7 months, and the pH levels were the same between the two sites for the other 3 months. In August, the temperature of the water in the Eagle River downstream of the water treatment plant in Avon, exceeded a temperature level that is safe for brown trout. In November, the water downstream of the Avon water treatment plant reached the highest pH level tolerated by brown trout, and exceeded a pH level that is safe for most aquatic organisms. This pH level may be harming the food sources of the brown trout. Based on my findings, I conclude that the water treatment plant in Avon may be contributing to the decline in the number and size of brown trout in Arrowhead.