

GLOBAL WARMING, RESTORATION, AND THE ROCKY MOUNTAIN FRONT

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Time will settle any on-going debate about the magnitude or meaning of global warming. In the meantime, restoration specialists are faced with prioritizing actions to maximize potential benefits to fisheries, stream systems, and water quality. The biological consequences of potentially elevated water temperatures, changing water yield, and reduced snowpack have significant implications both for resource management and allocation of limited funding. Data from the Rocky Mountain Front shows trends in reduced water yield and snowpack. In-stream temperature monitoring shows average and maximum temperatures well above thresholds considered sustainable for salmonids. Competition for irrigation water increases pressure on limited supplies and reduces in-stream flow. What happens if the environment becomes yet warmer, or if we respond with assertive restoration? The temperature model SNTMP provides a means to evaluate an array of potential restoration actions including alteration of stream W/D ratio, baseflow discharge, riparian shading, and groundwater recharge. Application of this model along the Rocky Mountain Front provides a potentially enlightening perspective on our collective restoration focus. Add a couple degrees Fahrenheit to the mean air temperature, or increase riparian coverage 20 percent. Reconsider the in-stream results and your priorities as fisheries manager or stream restoration specialist.