

Supplementary Materials: Annual Changes in Seasonal River Water Temperatures in the Eastern and Western United States

Tyler Wagner, Stephen R. Midway, Joanna B. Whittier, Jefferson T. DeWeber and Craig P. Paukert

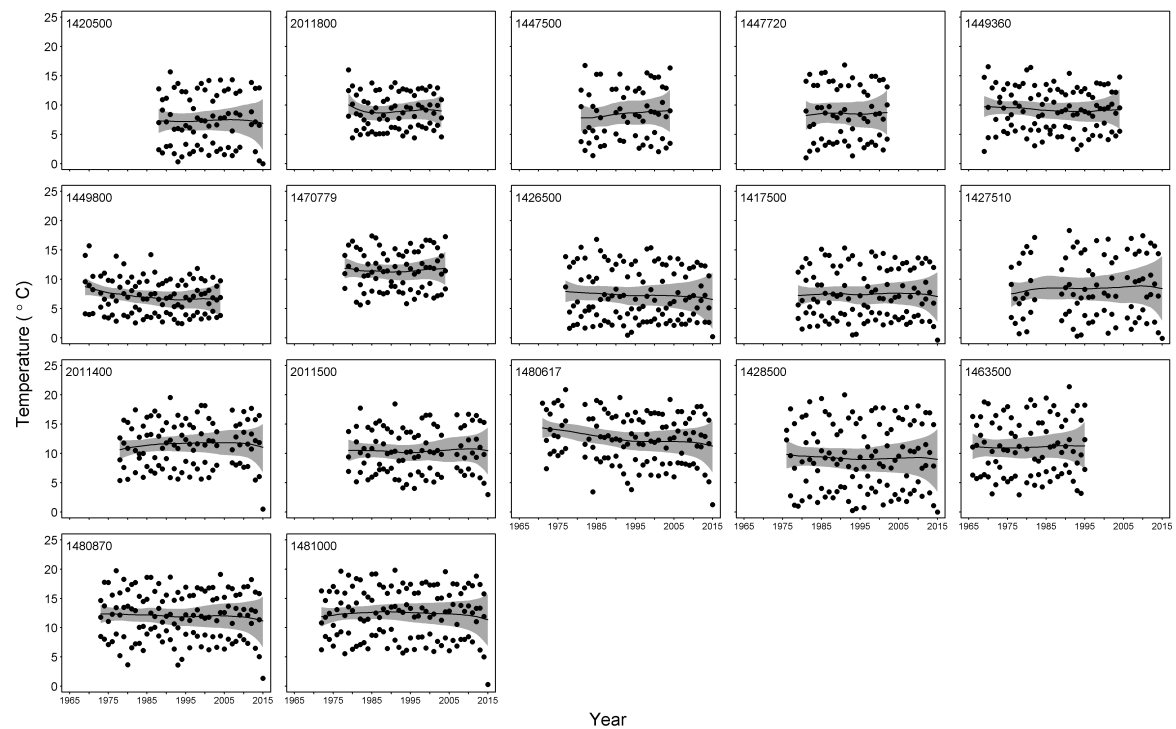


Figure S1. Temporal trends in spring river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Solid circles are observed data, solid lines are posterior mean fitted lines, and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

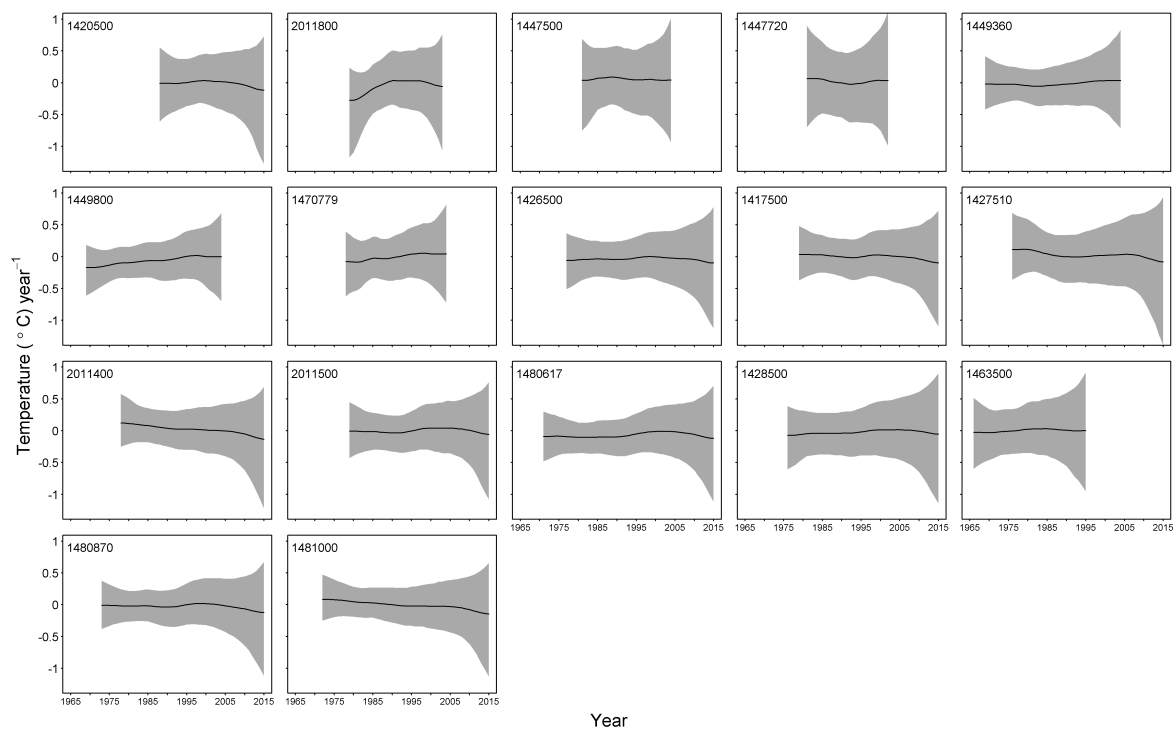


Figure S2. Annual rates of change in spring river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Solid solid lines are posterior means and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

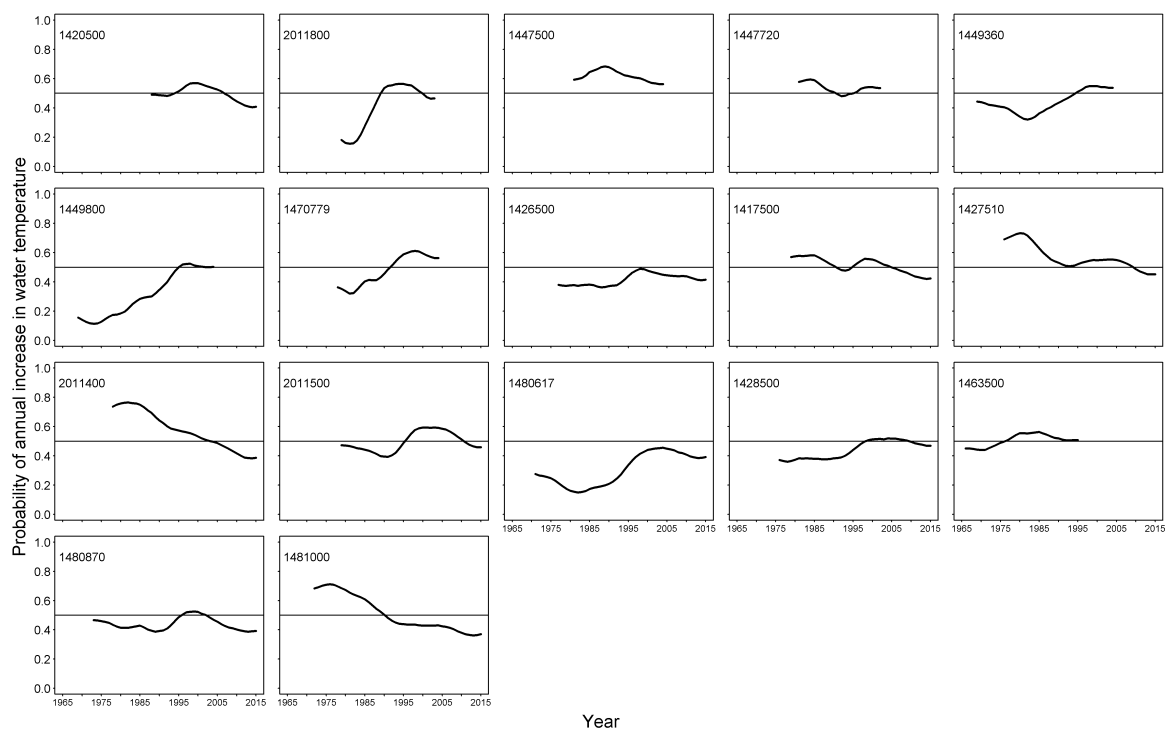


Figure S3. Annual probabilities of an increase in spring river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Horizontal line at probability = 0.5 is provided for reference.

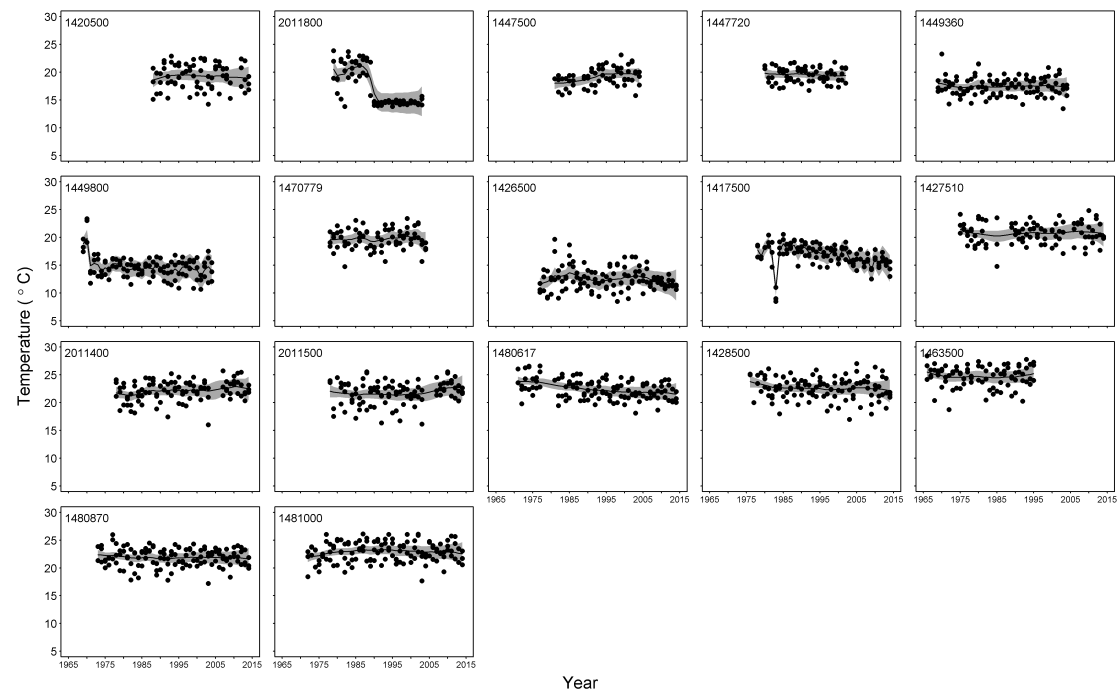


Figure S4. Temporal trends in summer river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Solid circles are observed data, solid lines are posterior mean fitted lines, and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Note: Gage 2011800 was located below a dam and although we took steps to minimize the effects of changes in water management policies on trend detection, the step-change behavior in temperature may reflect changes in dam operations.

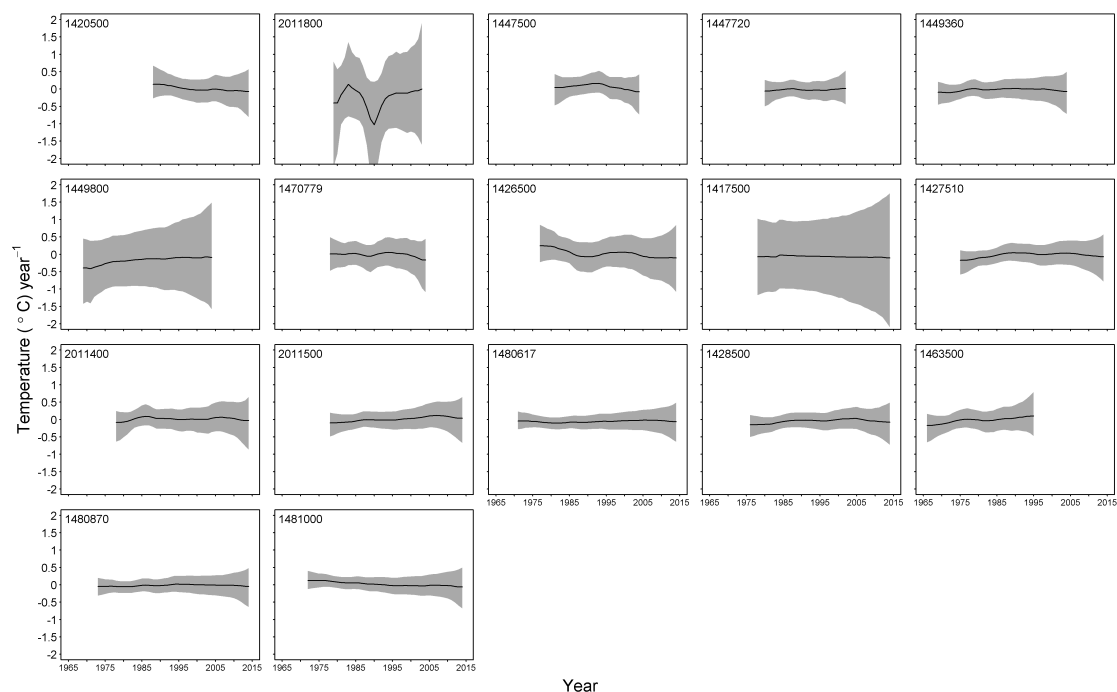


Figure S5. Annual rates of change in summer river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Solid solid lines are posterior means and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

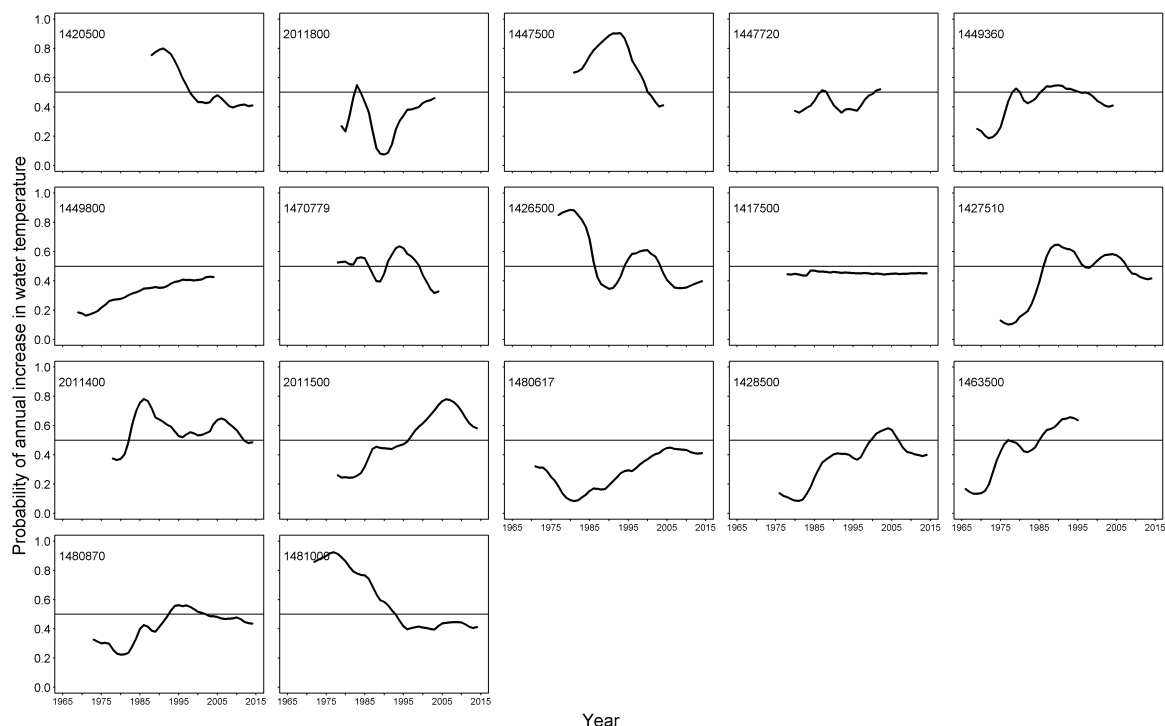


Figure S6. Annual probabilities of an increase in summer river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Horizontal line at probability = 0.5 is provided for reference.

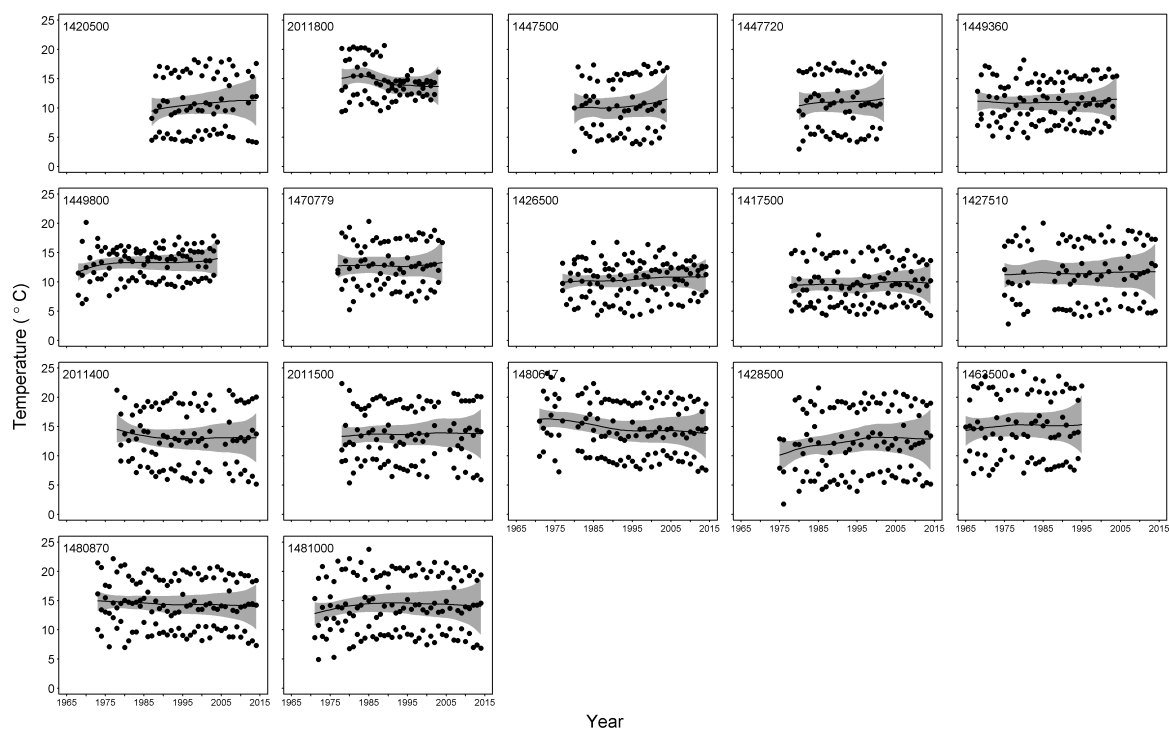


Figure S7. Temporal trends in fall river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Solid circles are observed data, solid lines are posterior mean fitted lines, and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

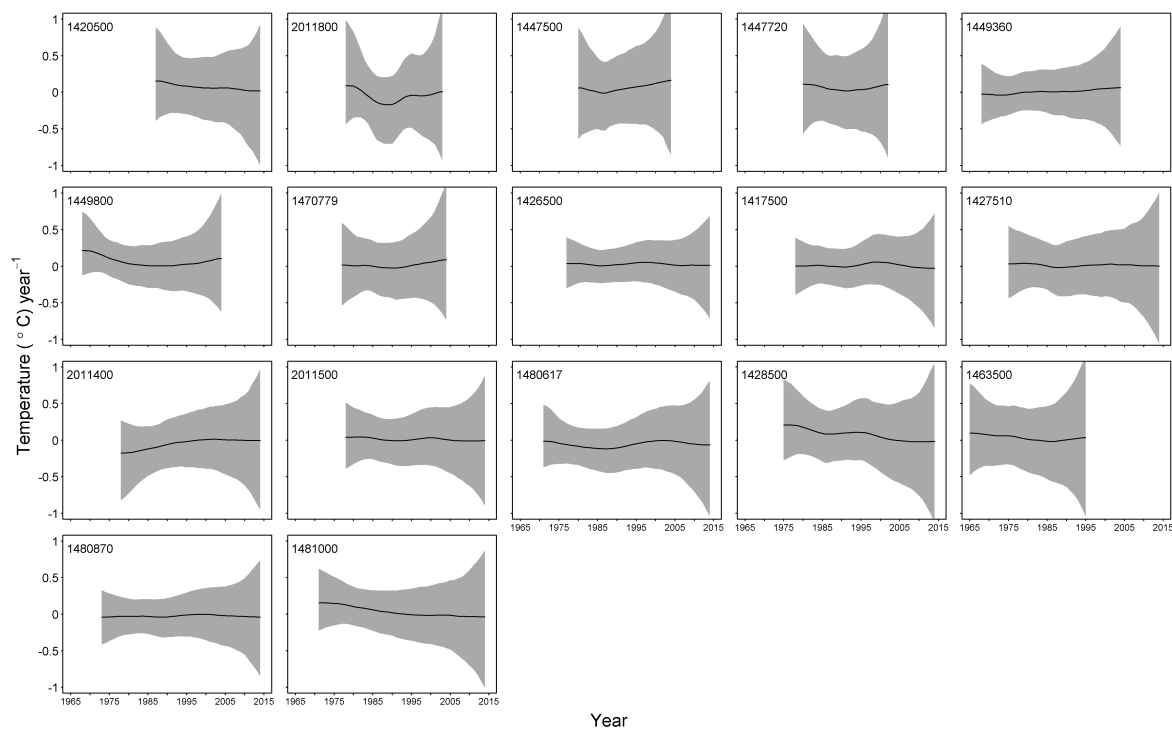


Figure S8. Annual rates of change in fall river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Solid solid lines are posterior means and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

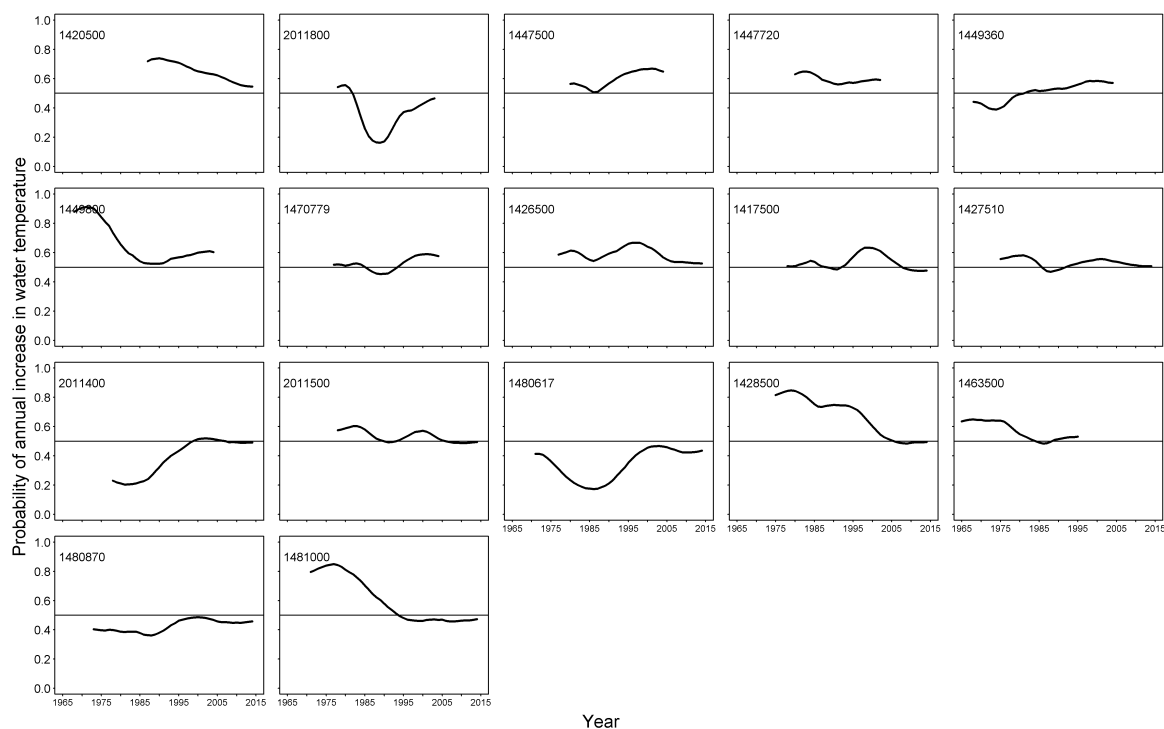


Figure S9. Annual probabilities of an increase in fall river water temperature for sites located in the eastern U.S. (see Figure 1 for site map). Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Horizontal line at probability = 0.5 is provided for reference.

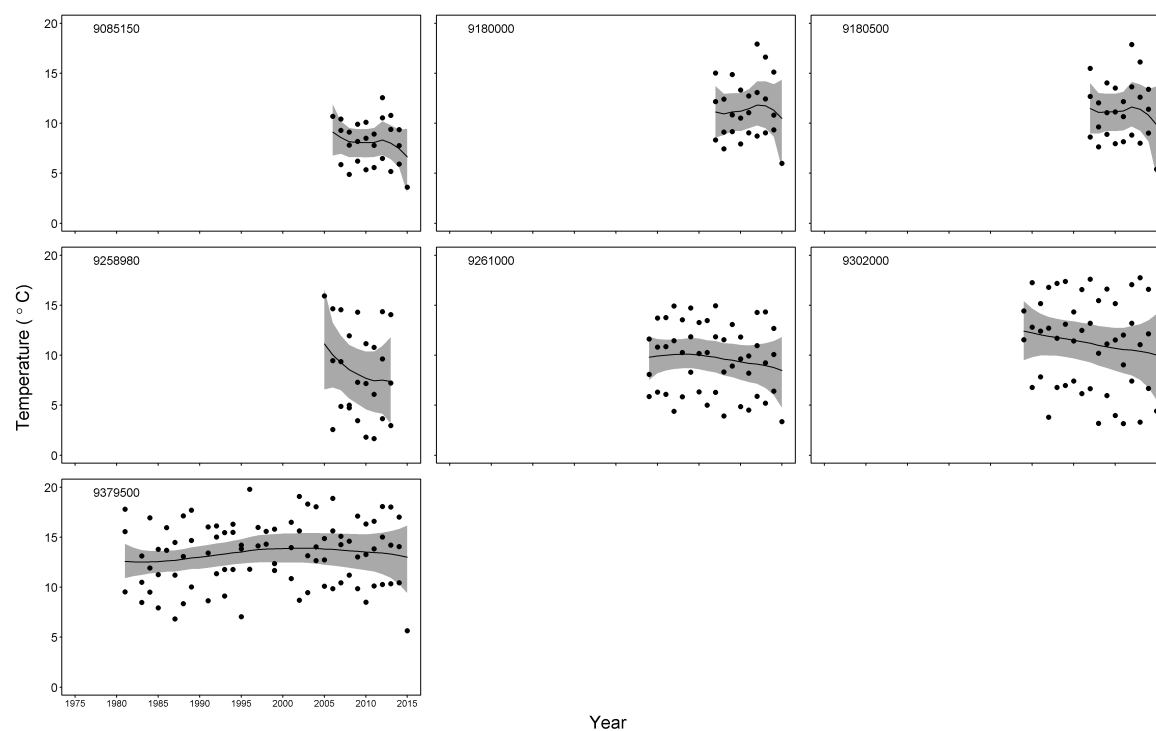


Figure S10. Temporal trends in spring river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Solid circles are observed data, solid lines are posterior mean fitted lines, and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

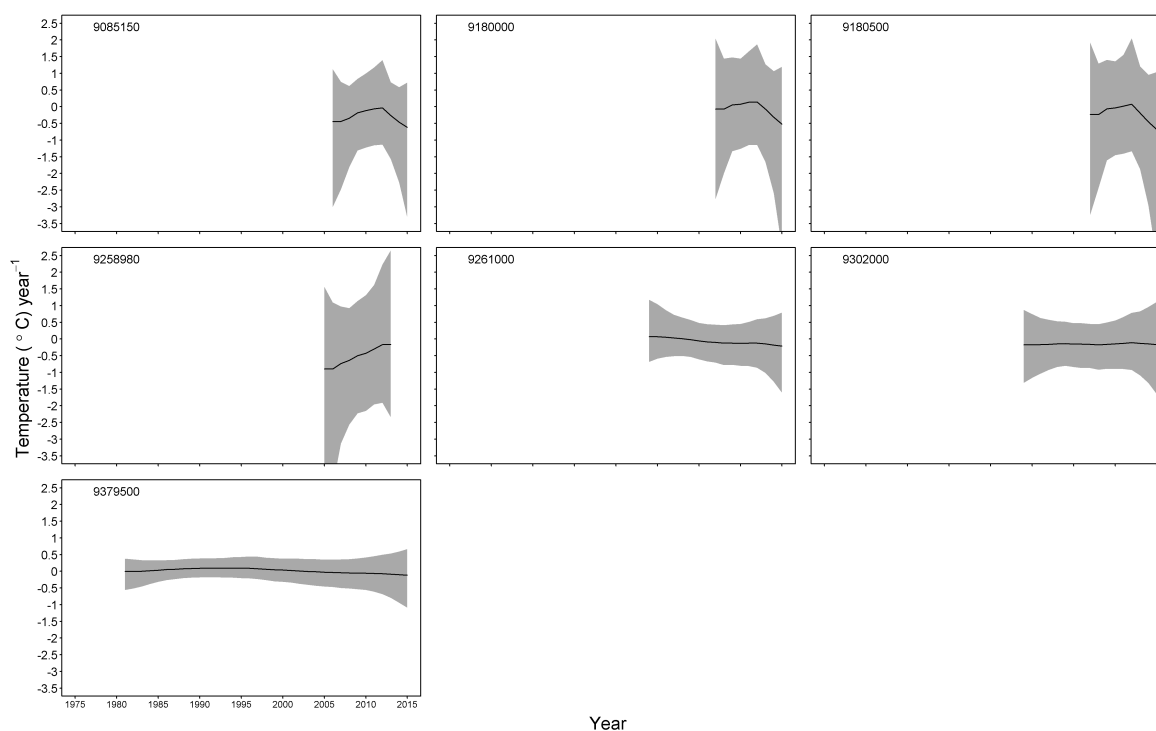


Figure S11. Annual rates of change in spring river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Solid solid lines are posterior means and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

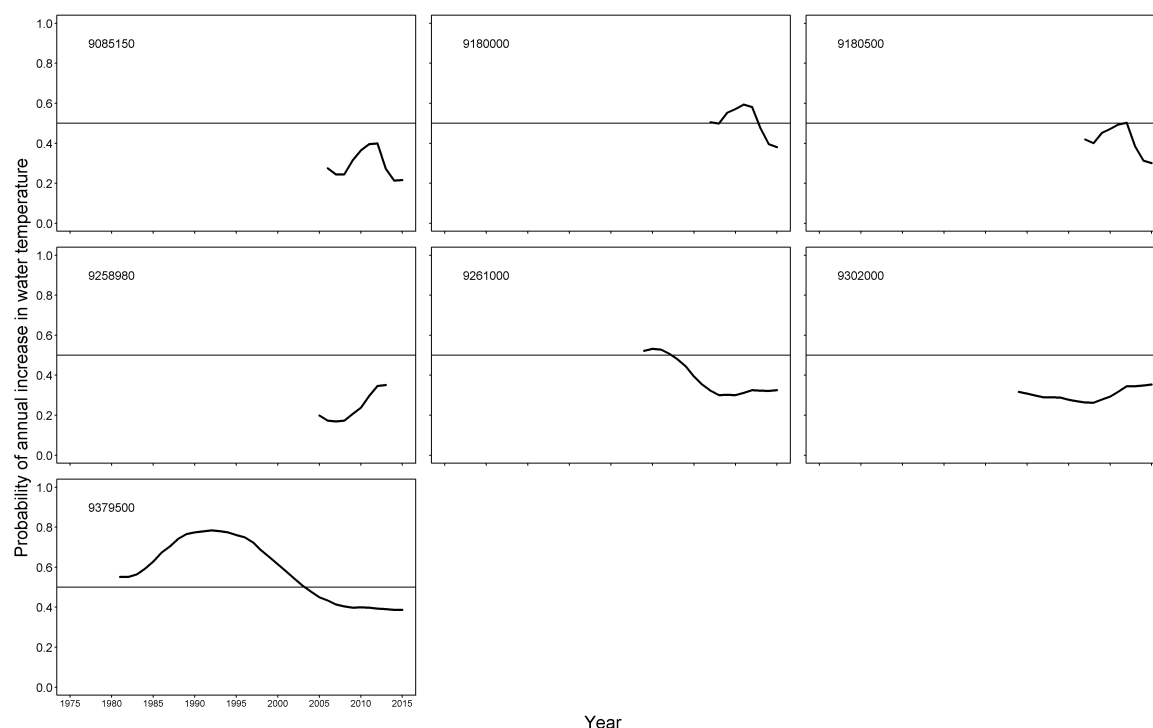


Figure S12. Annual probabilities of an increase in spring river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Horizontal line at probability = 0.5 is provided for reference.

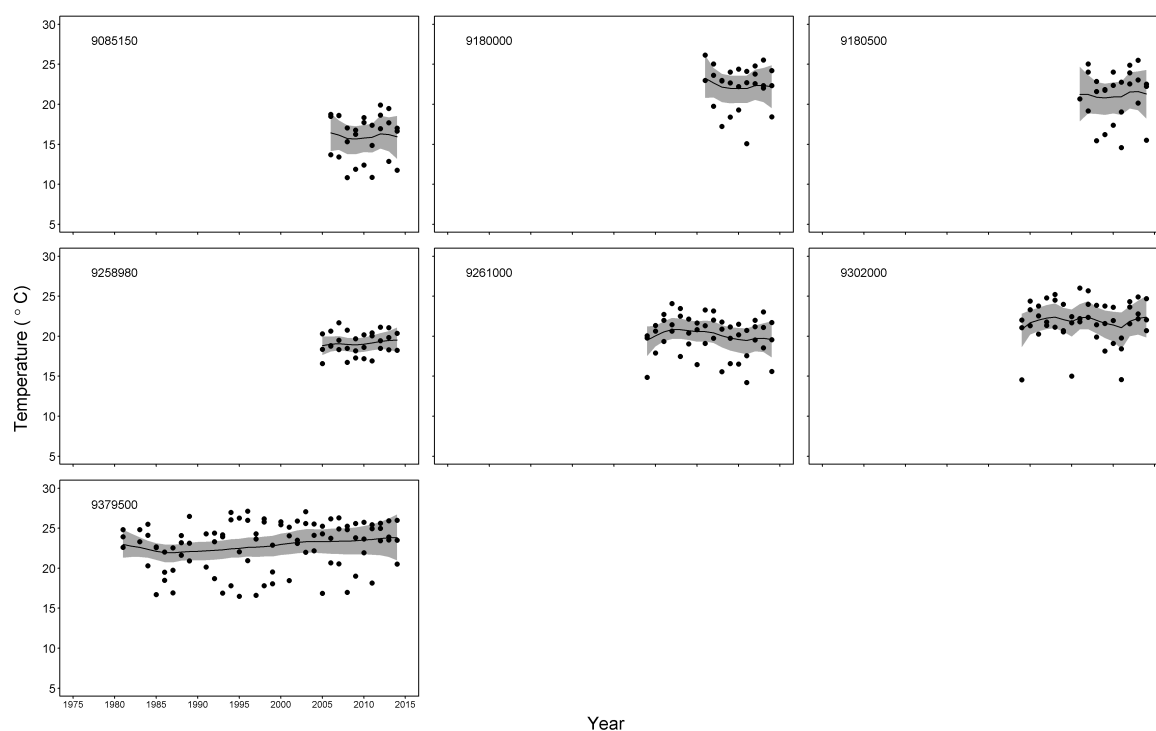


Figure S13. Temporal trends in summer river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Solid circles are observed data, solid lines are posterior mean fitted lines, and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

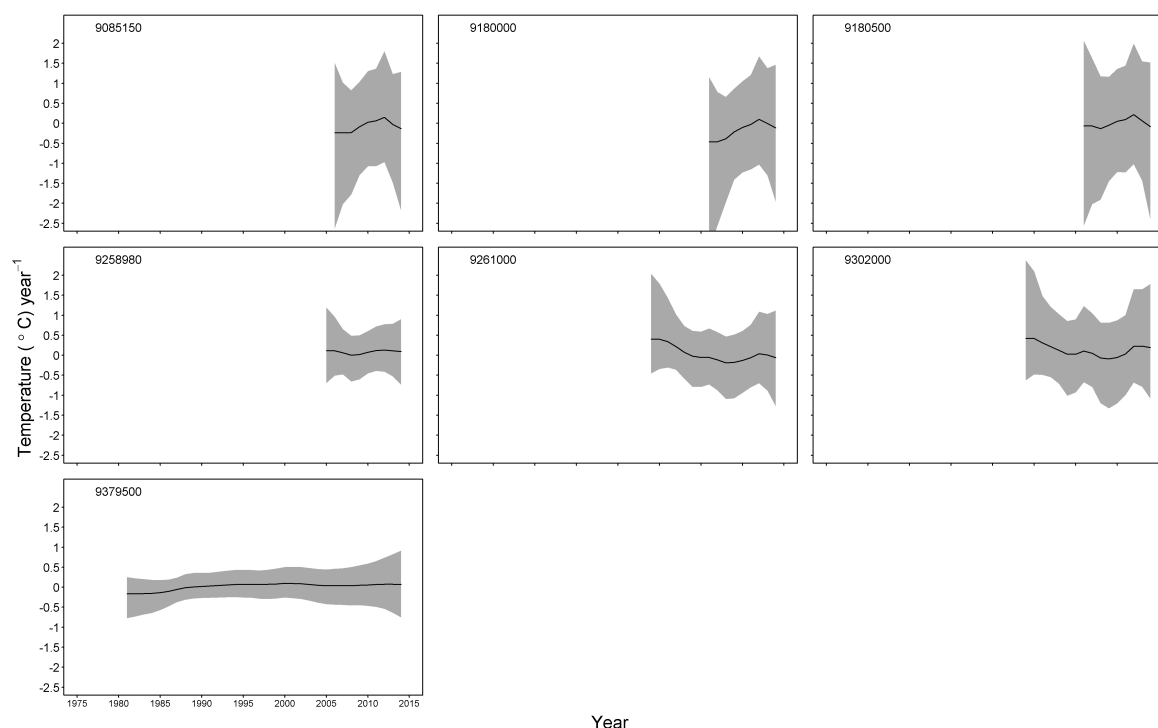


Figure S14. Annual rates of change in summer river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Solid solid lines are posterior means and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

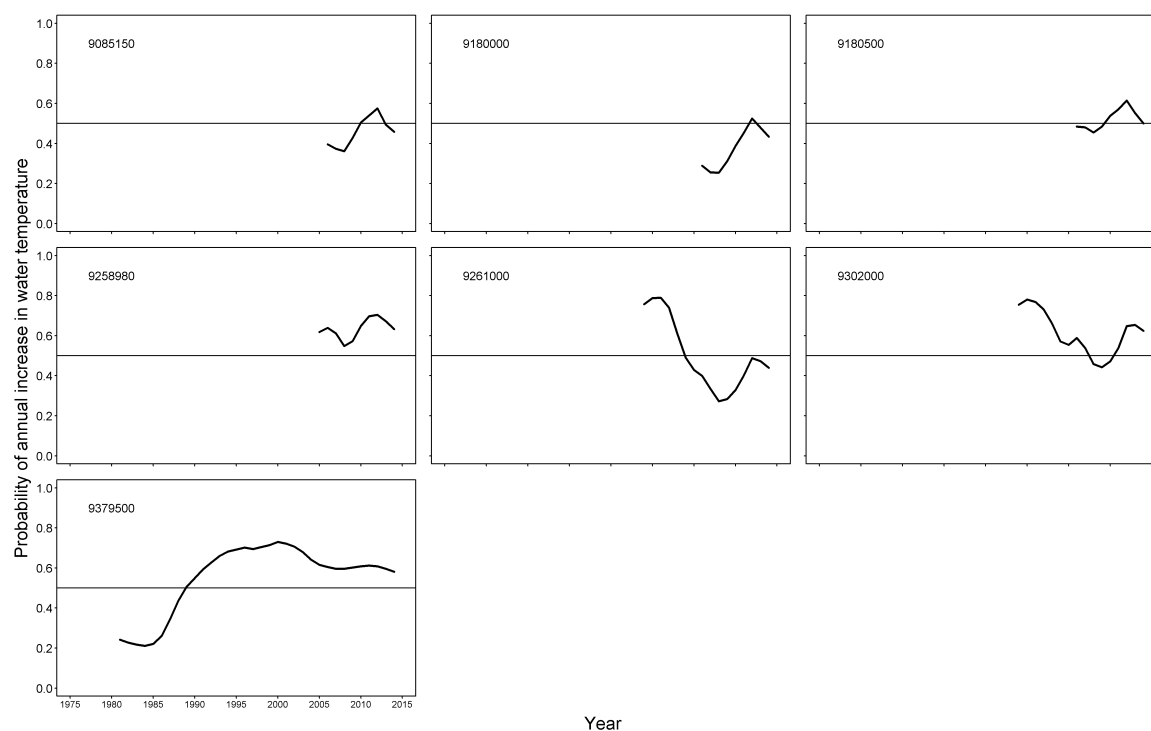


Figure S15. Annual probabilities of an increase in summer river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Horizontal line at probability = 0.5 is provided for reference.

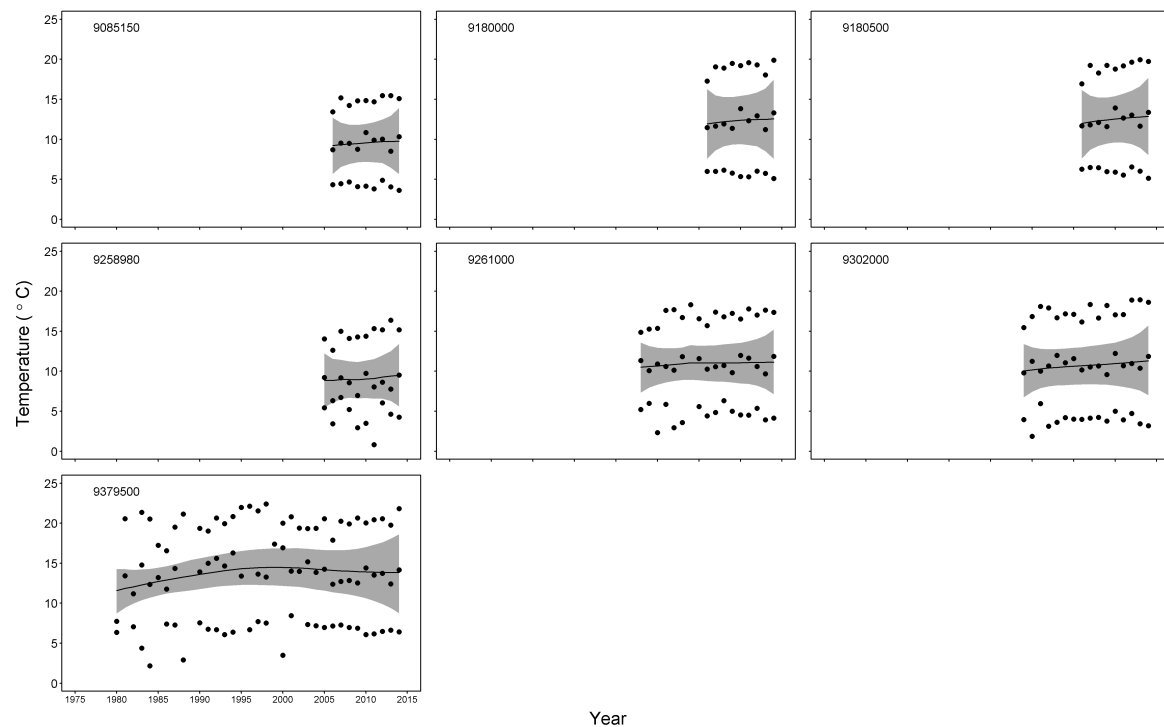


Figure S16. Temporal trends in fall river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Solid circles are observed data, solid lines are posterior mean fitted lines, and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

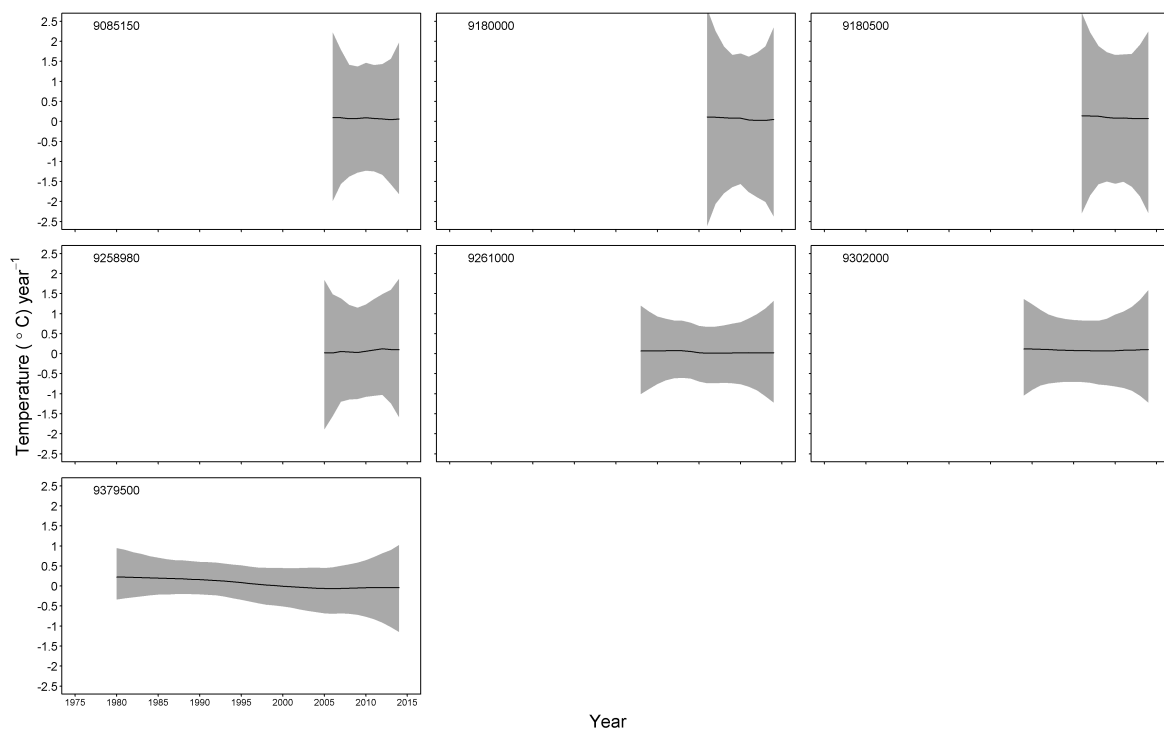


Figure S17. Annual rates of change in fall river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Solid solid lines are posterior means and shaded areas are 95% credible regions. Numeric code on each panel corresponds to the U.S. Geological Survey gage ID.

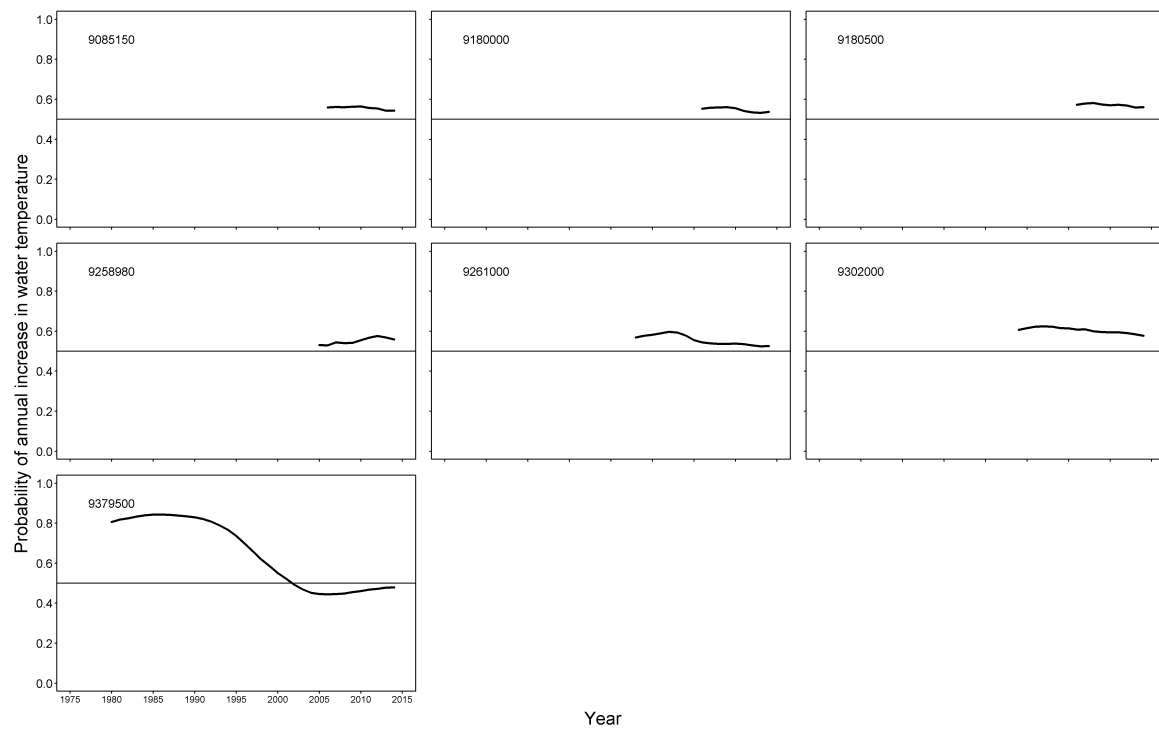


Figure S18. Annual probabilities of an increase in fall river water temperature for sites located in the Upper Colorado River Basin (see Figure 1 for site map). Numeric code on each panel corresponds to the U.S. Geological Survey gage ID. Horizontal line at probability = 0.5 is provided for reference.