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## ***MEDIA RELEASE***

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### **Salmon Stream Temperatures Found Higher, Earlier, More Often *Water Quality Monitoring Data Raises Questions, Concerns***

**HOMER, AK** – For the 6<sup>th</sup> year in a row, temperatures in local streams have exceeded state standards for salmon protection. These temperature exceedances have the Homer Soil and Water Conservation District (Homer District) and Cook Inlet Keeper (Keeper), partners in the Lower Kenai Peninsula Watershed Health Project, questioning the future productivity of these important salmon streams in the face of the spruce bark beetle epidemic and a changing climate.

In 1998, with funding from the Alaska Department of Environmental Conservation the project partners initiated baseline water quality data collection on the Ninilchik River, Deep Creek, Stariski Creek, and Anchor River, using EPA- and DEC-approved protocols. The project's annual report, *Lower Kenai Peninsula's Salmon Streams: Annual Water Quality Assessment*, released today illustrates the latest findings of this ongoing 7-year study. Keeper's Stream Ecologist, Sue Mauger, authored the report.

Increasing water temperatures remain the most significant finding. As a major influence on the health of stream ecosystems, temperatures can affect salmon egg and fry incubation, their resistance to disease, and the availability of oxygen and nutrients. Alaska's standard for water temperatures in spawning areas is not to exceed 13 degrees C (55 degrees F). In 2005, each stream surveyed exceeded this standard on more than 80 days. The Anchor River exceeded this mark on 88 days with the earliest exceedance occurring on May 23<sup>rd</sup>, almost two weeks earlier than the first exceedance of 2004. Significantly, temperatures have also been recorded above 20 degrees C (68 degrees F), which by state standards "shall not be exceeded," on all four salmon streams surveyed. To collect timely and accurate information, the partners rely on in-stream data loggers that take temperature readings every 15 minutes over several months during the summer.

What concerns Keeper and the Homer District most is not just the high temperatures, but their timing and consistency. Elevated temperatures are occurring earlier and more consistently than in previous years and this may affect aquatic communities system-wide.

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To compliment its water quality monitoring efforts and in response to the flood events of 2002, the project was expanded to include sampling for macroinvertebrates communities, which provide important food sources for juvenile salmon. In most streams, these communities are represented by larval insects whose presence (or absence) reflect certain water quality and habitat conditions. Throughout the study area the results of this work have been mixed, but in 2005, sediment tolerant larva were found to be increasing in the Ninilchik River and Stariski Creek, while total abundance levels in the Anchor River and Deep Creek revealed a notable downward trend from pre-flood numbers.

These results suggest that the biological recovery from the 2002 floods has been slow. Though it may be unrealistic to expect watersheds undergoing large-scale changes in both forest cover and climate to return to pre-flood levels, Mauger points out that this is the first biological evidence we have of habitat degradation in these salmon streams. "The strong upward trend in stream temperatures raises numerous concerns for salmon and salmon habitat. We will continue to monitor the invertebrate communities to understand the effects of the floods, warming temperatures, increasing sedimentation, other water quality problems, and land-use activities."

Keeper's work has prompted other organizations to mimic their methods. "In 2003, when we first saw the results of this project's work, we were very curious to know how widespread elevated water temperatures might be" said Robert Ruffner, Executive Director of the Kenai Watershed Forum. The following year, Mauger and her monitoring team set up ten instruments for the Kenai Watershed Forum to record water temperatures across the Peninsula. "As a result, we were able to record similar patterns in streams from Kasilof to Captain Cook Park to Cooper Landing."

Shirley Schollenberg, Homer District Manager, wonders if the rising temperature trends on the Peninsula might not be happening across Alaska. "Rising stream temperatures appear to be a Peninsula-wide problem. By most accounts, weather conditions across the state are rapidly changing. We need state agencies to take the initiative and institute state-wide temperature monitoring."

Future chinook and coho salmon runs will reflect the productivity of these streams, and though runs were high in 2005, the 2006 returns will represent the first fish that were incubating or rearing during the 2002 floods. Mauger believes these future returns may help researchers and fisheries managers understand how these documented watershed concerns affect salmon stocks on the lower Kenai Peninsula.

On March 8<sup>th</sup> Mauger will discuss these findings at the Anchor Point Chamber of Commerce luncheon, where she hopes to gather feedback from long-time recreational users of these streams. Specifically, she wants to understand changes users have witnessed over time, and hear thoughts on how best to preserve healthy salmon habitat.

A copy of the Lower Kenai Peninsula Watershed Health Project report can be downloaded from the Keeper website, [www.inletkeeper.org](http://www.inletkeeper.org), or by contacting the Homer Soil and Water Conservation District or Cook Inlet Keeper.

REPORT