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DNA BACTERIA STUDY IDENTIFIES MULTIPLE SOURCES OF CONTAMINATION IN THE UPPER IOWA RIVER

Thousands of area residents and visitors enjoy the waters of the Upper Iowa River each year. Unknown to most are the contaminants that also find their way to the river. The Upper Iowa River Watershed Alliance has monitored 39 streams in the Upper Iowa River Watershed (UIRW) since 1999 in an effort to identify contaminants in the water, and the potential source of these contaminants, with the goal of improving the water quality in the Upper Iowa River and its tributaries.

Because high levels of fecal bacteria were found in the UIRW and many people use the river to swim, canoe, and tube, studies were conducted to determine potential sources of fecal bacteria contamination. The UIRW Alliance realized that some questions needed to be answered—Such as, which tributaries to the Upper Iowa River are contributing the most fecal bacteria, and is the bacteria from humans, livestock, or wildlife? Based upon preliminary data, six tributaries to the Upper Iowa River were identified with having elevated bacteria levels, and three were chosen for further study, including Silver Creek (near Cresco), Coldwater Creek, and Silver Creek (near Waukon). Samples were collected through the UIRW Project in 2002 and 2003 and analyzed by the University of Iowa Hygienic Laboratory. The bacterial DNA studies were conducted as a joint project between the Iowa DNR, Iowa Geological Survey Bureau, the University of Iowa Hygienic Lab, and the Upper Iowa River Watershed Alliance, through the Northeast Iowa RC&D.

The findings of the research indicate the fecal bacteria in the tributaries and in the Upper Iowa River come from a variety of sources, including humans, livestock, and other wildlife such as deer, raccoons, and geese. The fecal bacteria makes its way into the water through various paths, including malfunctioning septic systems, sewage treatment plant discharges, manure spills, runoff from fields after manure application, and even storm water runoff from lands with wildlife or pet droppings.

The Upper Iowa Watershed Alliance will utilize these findings to identify specific projects that will assist in the long-term health of the Upper Iowa River Watershed and reduce bacteria levels in the streams and rivers.

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Attached Photo File:

Photo Caption: A University of Iowa researcher conducts membrane filtration as part of the analysis of water samples.

Photo Courtesy of University of Iowa Hygienic Laboratory

