

## Hungry Canyons Alliance Facts

**Streambed degradation in the unique, deep loess soils of western Iowa has cost approximately \$1.1 billion in damage to infrastructure and loss of land. The only affordable solution to this costly problem is to build grade control structures in streams.** On average, for every dollar spent on grade control structures, more than \$4.24 in property value and 0.98 tons of soil are protected from streambed degradation.

**The Hungry Canyons Alliance is a locally formed, regional organization managed by the local, grassroots interests of 23 counties in western Iowa whose singular goal is to control active streambed degradation through the construction of grade control structures.**

**Grade control structures funded by the Hungry Canyons Alliance protect bridges, farmland, and utility lines (telephone, gas, and electric) already endangered by streambed erosion.** This is a preventative program to avoid bridge collapses and further soil erosion. If streambed stabilization is not funded now, stream erosion will continue and cause greater rehabilitation costs in the future.

**Grade control structures increase water quality** by decreasing the slope of the streambed, reducing stream energy, reducing water velocities, preventing further downcutting and widening, causing sedimentation upstream of the structures, and ultimately reducing sediment TMDL's (Total Maximum Daily Load). An estimated 571 acres of farmland, equivalent to about 20.17 million tons of sediment, has been prevented from being swept away into the Missouri and Mississippi River systems.

**The Hungry Canyons Alliance leverages state, federal, and local monies to build grade control structures.** Federal appropriations of \$1.2 million are matched by the State of Iowa, who contributes \$400,000, and the HCA's member counties, who contribute \$400,000. From 1992 to 2008, except in 2007, the Hungry Canyons Alliance received a federal appropriation, and since 2003, those appropriations averaged \$1.126 million per year.

**For 17 years now, the HCA has been helping western Iowa counties build grade control structures.** Over that time 320 structures have been approved for cost share, and at a construction cost of only \$20.77 million, they will protect an estimated \$77.9 million dollars of property.

Because western Iowa has experienced such dramatic streambed degradation, **the Hungry Canyons Alliance**, and its member counties, **is one of the world leaders in innovative grade control structure research, design, and construction.** Tours and workshops are held every year to demonstrate the benefits of and the best way to build grade control structures.

**The Hungry Canyons Alliance promotes more effective streambed stabilization by helping counties to work together.** Member counties look at stream stabilization across county lines and consider the entire watershed and stream system when planning. Members search for and use new cost-effective materials. Designs are continually evaluated for effectiveness.

**Before the Hungry Canyons Alliance came into existence, western Iowa counties were losing bridges, utilities, and soil at an alarming rate.** Some counties would have soon faced bankruptcy if the Hungry Canyons Alliance was not formed to help address the problem.

**The HCA uses the money it receives through state and federal appropriations wisely.** Only 10% of the HCA's budget is used for project administration; the remaining 90% is used for cost share to construct grade control structures and fish passage modification projects or to perform valuable research projects.

**The HCA has strong partnerships with numerous other agencies** including: county governments, city governments, municipal utility companies, private landowners, natural gas pipeline companies, Iowa Department of Transportation, Iowa Department of Natural Resources, US Fish and Wildlife Service, USDA Natural Resource Conservation Service, US Army Corps of Engineers, Soil and Water Conservation Districts, The University of Iowa, and Iowa State University.

**The HCA is also working closely with the Iowa Department of Natural Resources to incorporate fish habitat and passage while providing streambed stabilization.**

**The HCA has conducted original research** in the following areas: 1) effective methods of streambed stabilization; 2) aerial stream classification to determine areas of active stream erosion and the impact streambed stabilization structures have on controlling stream degradation; 3) design of grade control structures to allow fish passage; 4) the use of scrap tires in grade control structures; 5) migration rate of stream knickpoints, which are small, unstable waterfalls that erode their way upstream; 6) gaging small, previously ungaged streams with sensors to measure stream stage and discharge, increasing our ability to predict erosion; and 7) experimental, cost-effective ways to control deep gully headcuts with small drainage areas in the Loess Hills in conjunction with the NRCS.