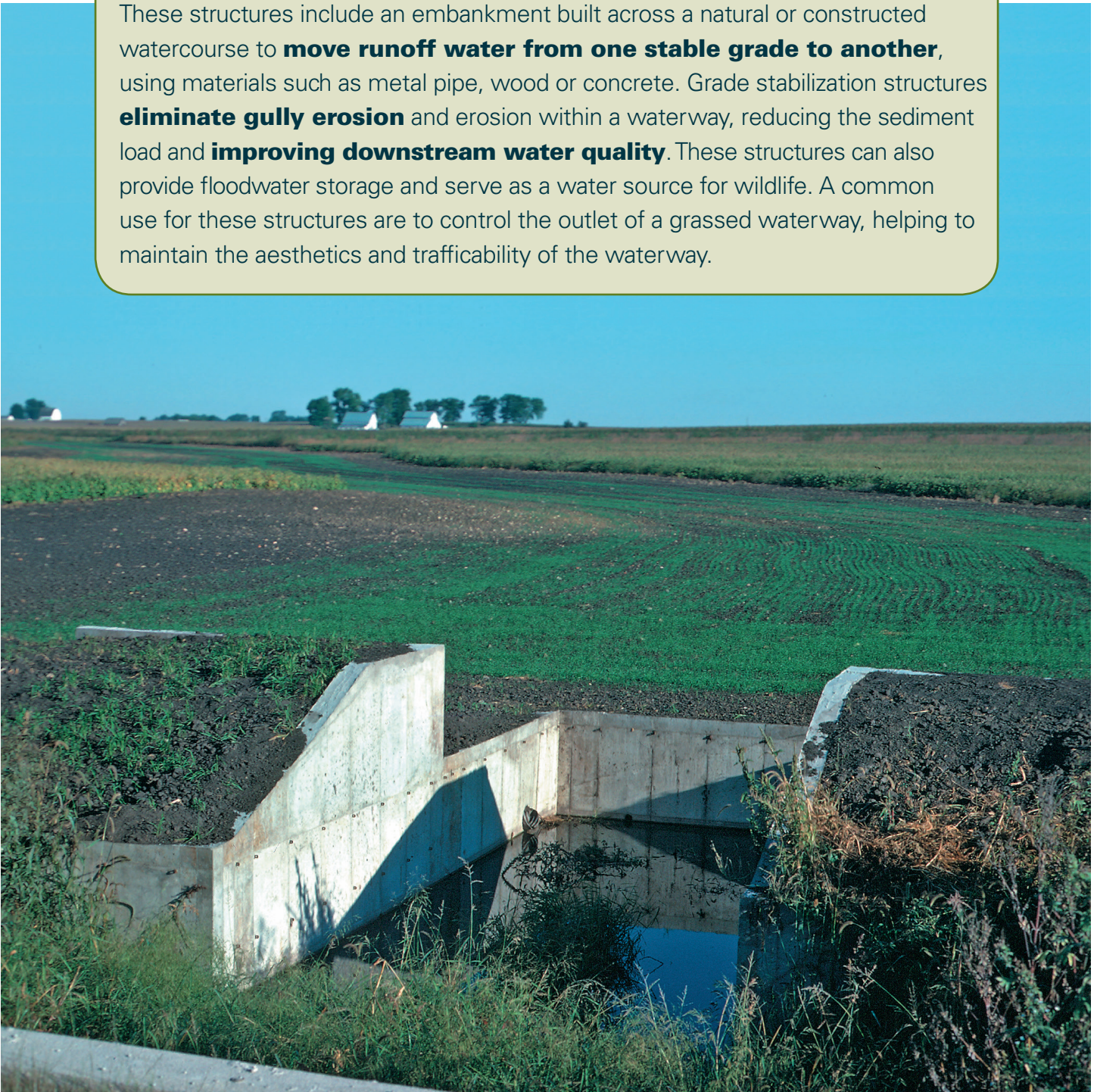


The Iowa Watershed Approach

Grade Stabilization Structures

What is a grade stabilization structure?

These structures include an embankment built across a natural or constructed watercourse to **move runoff water from one stable grade to another**, using materials such as metal pipe, wood or concrete. Grade stabilization structures **eliminate gully erosion** and erosion within a waterway, reducing the sediment load and **improving downstream water quality**. These structures can also provide floodwater storage and serve as a water source for wildlife. A common use for these structures are to control the outlet of a grassed waterway, helping to maintain the aesthetics and trafficability of the waterway.



Grade Stabilization Structures and Flood Reduction

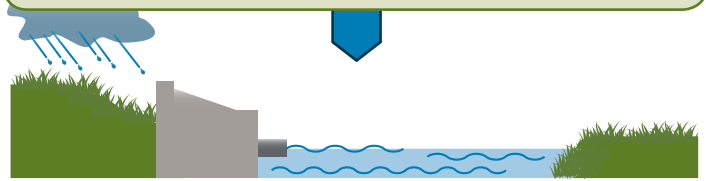
THEIR IMPACT

1. Provides floodwater storage.



Some structures can hold precipitation runoff and provide temporary storage.

2. Can reduce peak water flow rate after a storm event.



When temporary storage for precipitation runoff is provided within the structure, the timing of flood peaks are delayed.

Grade Stabilization Structures and Water Quality

THEIR IMPACT

1. Reduces sediment load by preventing gully erosion.



These structures replace concentrated and high velocity surface water flow, eliminating gully erosion.

2. Phosphorus load reduction.



Phosphorus bonded with sediment is maintained in the field or waterway as erosion is prevented.

3. Water quality functions of a waterway are maintained.



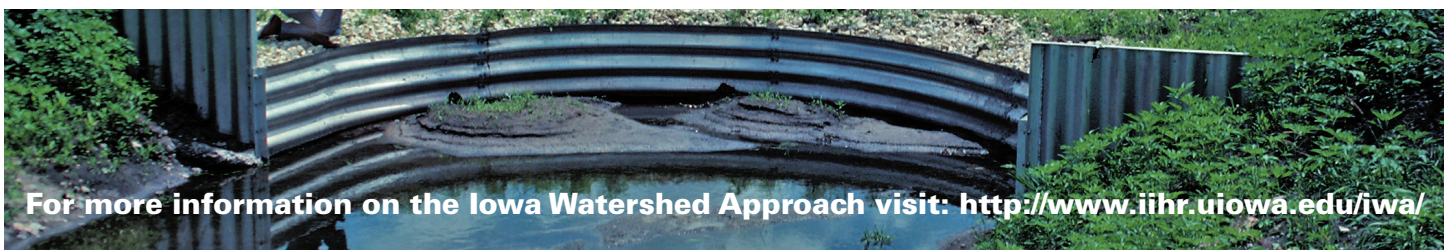
With a controlled outlet, waterways maintain their shape and grass cover, allowing them to trap sediment, filter and absorb some chemicals in runoff.

Financial Incentives of Grade Stabilization Structures

The **Iowa Watershed Approach** provides **75% cost share** for installing grade stabilization structures. See your Soil and Water Conservation District or Natural Resources Conservation Service for other cost share opportunities.

Additional Benefits of Grade Stabilization Structures

- ▶ Provides a water source and habitat for wildlife.
- ▶ Maintains the aesthetics and trafficability of a grassed waterway.
- ▶ Conserves agricultural land by preventing the advancement of gully erosion upstream through cropped fields and pastures.



For more information on the Iowa Watershed Approach visit: <http://www.iihr.uiowa.edu/iwa/>

www.extension.iastate.edu/waterquality

Prepared by Jamie Benning, program manager, and Kristina Craft, program specialist, Iowa State University Extension and Outreach. Photo courtesy of Kurt Blume, USDA Natural Resources Conservation Service.

This project is supported by the Iowa Nutrient Research Center.

Iowa State University Extension and Outreach does not discriminate on the basis of age, disability, ethnicity, gender identity, genetic information, marital status, national origin, pregnancy, race, religion, sex, sexual orientation, socioeconomic status, or status as a U.S. veteran. Direct inquiries to Ross Wilburn, 515-294-1482, wilburn@iastate.edu.

