

## Healthy trout. Happy anglers.

The unique, unglaciated Driftless Area in the heart of the Upper Mississippi River Basin is a natural resource treasure. With more than 4,000 miles of mineral-rich spring creeks, the region supports a world-class trout fishery.

Rush Creek is one of more than 600 of these coldwater limestone spring-fed creeks. But in just 12 months, it had eaten back a 12-foot high stream bank by almost 20 feet, collapsing fences, threatening a nearby road, filling the stream with sediment and ruining the spawning beds of the resident trout.

The private landowner, working with Trout Unlimited and Federal cost share funding through the Natural Resources Conservation Service, retained WHKS to stabilize the banks and restore the popular fishing stream.

Two main challenges faced the team: balance the sometimes-conflicting strategies of bank stabilization and habitat improvement and balance the sometimes-conflicting priorities of the various stakeholders.

The second was overcome by precisely documenting the exact situation in the field and then focusing on clear and thorough communication with all parties. This allowed all the stakeholders to achieve their particular project goals while creating a template for similar projects in the future.

The first was overcome by extensive hydraulic modeling that resulted in reconnecting the stream to the established floodplain. While riprap is a popular solution to bank stabilization, it's not overly attractive and doesn't provide the best fish habitat. The precise modeling of anticipated flooding events ensured that this hard edge was only used where it's required. In a delicate balance between maintaining access and protecting against the events that would further erode the stream, the elevation of the rock bank was set to the two-year 'channel forming event.'

All the streams in Minnesota are public property with this portion of Rush Creek having an easement on either side for public access. They support an abundant population of trout, which in turn, attracts tens of thousands of anglers to the region each year.

The trout population in Rush Creek had declined significantly. But following the 2013 completion of this project with stable banks and a beautiful stream environment planted in native vegetation, the trout population has measurably rebounded and the anglers have returned.



2011



2012



2013

