

The Kerns Farm: a floodplain case study

In 1991 Jim and Jody Kerns of Edgewood saw the harsh realities of record floods on the Volga River. Within two years, another record flood wiped out the historic town of Littleport and later floods destroyed Elkport. While the Kerns' house isn't on the floodplain, they own farmland along the river.

"Each year we watched the river bend erode 15 feet or more into our crop field," recalls Jody.

Instead of continuing business as usual, the Kerns approached the USDA's Natural Resources and Conservation Service about streambank protection. The couple originally considered rip-rapping their entire 1,000-foot bank but found the cost prohibitive. Instead, using an NRCS demonstration grant and their own funds, the couple installed rip-rap on only the most vulnerable stretch and then stabilized the rest with "soil bioengineering." This method incorporates living plant materials, such as willow posts and grass plantings, instead of relying on rock only.

"The Kerns not only matched a portion of the USDA grant with their own dollars, but almost all of the plant materials were installed with their sweat and blood," said Jeff Tisl, Iowa Department of Agriculture and Land Stewardship.

But bank erosion drew the couple's attention to a bigger problem: the entire 23-acre field was vulnerable to catastrophic floods. In 1997 they enrolled the field in the Conservation Reserve Program (CRP).

Using CRP funds, the Kerns planted a multi-row riparian forest buffer adjacent to the streambank using a variety of trees, shrubs and grasses commonly found in natural floodplains in this part of the state. It was a good investment for the Kerns and taxpayers.

"We have seen four 500-year floods on this field in just 20 years," said Jody. "We have seen water flowing 16 feet deep passing over this field."

According to Tisl, the plantings have fared well overall. "While every flood has damaged these plant materials, sometimes severely, each time the plant community came back with even more diversity than we originally tried to establish," he said.

For example, many of the prairie species washed out and have been slowly replaced by bottomland timber. Fortunately the Kerns like trees – a lot. They chair the Iowa Tree Farm Committee. Jody chairs the State Soil Conservation Committee and serves as its tree farm representative. They are past chairs of the Northeast Iowa Forest Advisory Committee.

To inspire other landowners to consider natural anti-erosion methods, the Kerns worked with the Farm Bureau and others to produce a video highlighting their experience. They have hosted several forestry-related field days so people could experience their vision firsthand. Spurred by their example, several other landowners in northeast Iowa have enrolled their fragile riparian areas into the CRP program as well.

Meanwhile, the couple is inspiring future generations. Each year, the second-grade class of Edgewood-Colesburg School District visits the Kerns farm for a conservation field trip. While there, they plant trees. When these classes have included one of the six Kerns children, their classmates are allowed to plant and name a grove together. Over the years, many return periodically to visit "their" grove, and some have had class photos taken there.

Because of their passion for environmental science, the Kerns approached their local high school about the possibility of using their farm for environmental education. For the past decade, a high school class has met on the site almost daily for a nine-week session. They study, monitor and record data on its land and waterways. 🌱



BEFORE

Jeff Tisl, IDALS



DURING RESTORATION

Jeff Tisl, IDALS



AFTER (also on shown facing page)

Jeff Tisl, IDALS

After the devastating floods of 1991, Jim and Jody Kerns began implementing conservation practices on their farm in the Volga River floodplain. With support from the Natural Resources Conservation Service, the couple installed willow posts and native plantings to stabilize the streambanks (middle) and later converted the most vulnerable cropland to permanent cover – in this case, to riparian timber. Since then, the area has experienced three additional major floods. Unlike nearby croplands, the Kerns' bottomland timber recovered quickly after the floods receded.





0 165 330 660 990 1,320 Feet

News from Mr. Millis

This year in Mr. Millis' Environmental Science class again got the opportunity to spend time outside and learn a lot about the natural world around us. The class met at Jim and Jody Kerns property along the Volga River two miles east of Littleport.

This year the class expanded its range by incorporating some basic activities in timber management. With the help of Jim Kerns he students learned how a land owner manages his timber to achieve their own personal objectives for the property. The students learned how to determine stocking density in a timber stand, estimate seedling counts in newly planted areas, and estimate the value of crop trees in order to decide when to harvest.

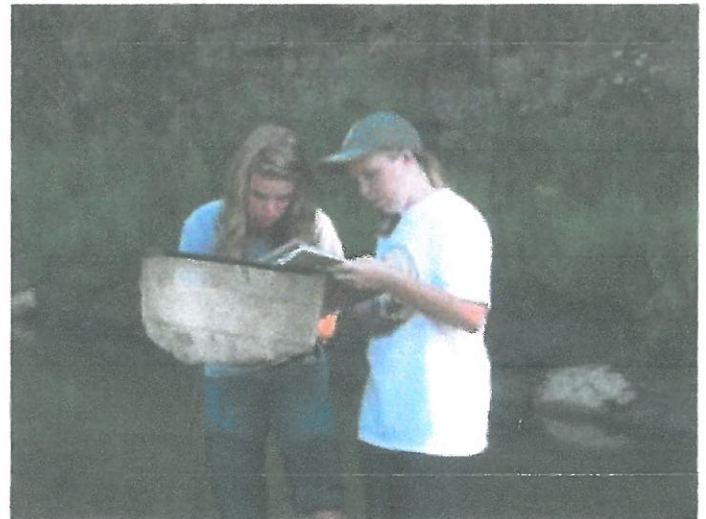


Rylee McDermott performs the standard test for estimating stocking density in a timber

The students also engaged in ongoing data collection along the Volga such as a survey of invertebrate life and the physical features of the river such as depth, velocity, and total flow. They also took part in the annual river clean up clearing garbage from a 1 kilometer stretch along the Volga River.



Colton Wegmann and Tyler Fischer carry trash from the Volga River along Kern's property.



Sarah Schiffman, and Jordyn Bolinger take part in the annual survey of benthic macroinvertebrates along the Volga River.



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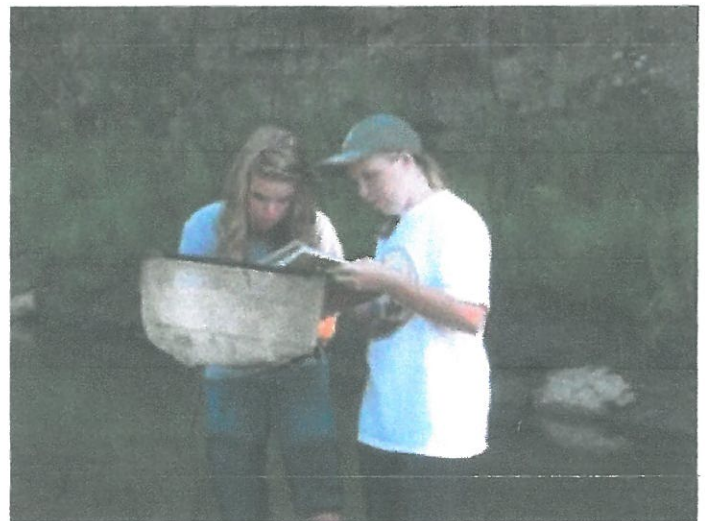


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Courtney Putz and Shelby Steger take part in the annual survey of benthic macroinvertebrates along the Volga River.



2012 Environmental Science class shows off the load of trash hauled out of the Volga River. From left Colton Wegmann, Shelby Steger, Jordyn Bolinger, Rylee McDermott, Sarah Schiffman Courtney Putz, Tyler Fischer, and Jim Kerns.

Many thanks to Jim and Jody Kerns who once again this year generously allowed our students a great opportunity to learn about the land with additional thanks to Jim for sharing not only his land but his expertise when teaching our students about woodland management.

Elementary News

News from Mrs. Lueken

Elementary Computer

In September, grades 3-6 took NWEA tests in math, language, and reading to see how they are progressing in these subject areas. STAR tests were taken in grades 2-6 at the beginning of the year and at the end of the first quarter. This helps students find their reading range for the Accelerated Reading program.



Kindergarten computer classes started in October, and they are working with the letters and sounds of the alphabet with Starfall. First and second grade classes worked with Jolly Phonics and Starfall to improve reading skills. Third grade classes are working with home row keys that they learned in second grade. They are reviewing how to use the shift keys for capital letters as they type sentences in a fall document. They will be receiving a computer grade this year. Fourth grade typed a fall document and reviewed home row keys and other keys from third grade. Fifth and sixth grades typed two fall documents. Grades 3, 4, 5, and 6 also worked with freerice.com, smartygames.com, and freetypinggame.net web sites. Sixth grade took their first two timed typing tests.



Elementary TNT

Sixth grade TNT small group visited Villa Louis in Prairie du Chien and Pikes Peak September 28. They have been working hard and are almost done with their power point presentation of Villa Louis.