

# Stewards of our Streams

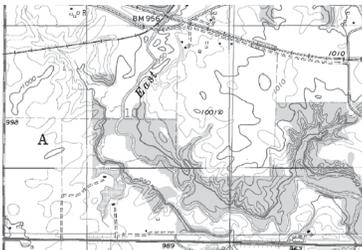
## Assessing the Need for a Riparian Management System (RiMS)

### Where do I start?

Riparian management systems (RiMS) often appear complex, and assessing your stream riparian area to design one can seem a daunting task. There are many design options for RiMS that can provide multiple benefits. The best option is the design that accomplishes the most for you, for the land, and for the community. This publication provides a list of tools and considerations to help you determine what kind of RiMS is best for you and your land.

### Assessment Tools Available

Several kinds of maps can help with the assessment. A U.S. Geologic Survey (USGS) quadrangle map is a contour map that shows the relief of the land and can help identify

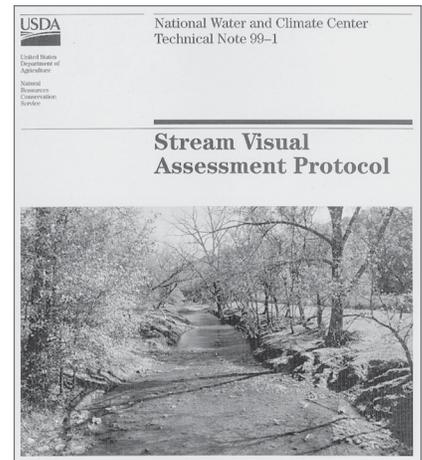


USGS 7.5 minute Quadrangle Map

how surface runoff gets to the stream. These maps are available from some local university and fine bookstores, can be ordered directly from the USGS (web site: [www.usgs.gov](http://www.usgs.gov)) or are available on the Web (Iowa: <http://www.igsb.uiowa.edu/>). Aerial photographs that provide an actual picture of your land, as well as soils maps, are often also available from the same web site or from your local Natural Resources Conservation Service (NRCS) or Farm Service Agency (FSA) office.

The County Soil Survey also provides aerial photographs of your land with soil mapping units plotted. It contains detailed information about the physical and chemical properties of the soils and any management limitations that should be considered. The survey is free to county residents and can be obtained from the NRCS at your county U.S. Department of Agriculture (USDA) Farm Service Center.

Another helpful tool available from the NRCS is the Stream Visual Assessment Protocol (SVAP). This tool is a user-friendly set of parameters that allows you to identify specific problems along a stream corridor and gives a composite rating of its present condition. Take this tool with you when you walk the land.



Stream Visual Assessment Protocol available from your local NRCS office

### Define Project Goals and Identify Regulatory Requirements

Before beginning your assessment make a list of your personal goals for the project and identify any concerns

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or information gaps you might have. Identify how choices will affect communities downstream from your property. This step helps you develop a working knowledge of how the RiMS should function, what design will best fit your goals, and what outside support may be needed to install your RiMS.

## Identify Concerns

It is important that you identify all of your concerns about RiMS so you can explain them to your local natural resource professional. There are many possible concerns that may surface as you think about the project. A few common ones are mentioned below:

### *Concerns about function*

- Can buffers reduce sediment and non-point-source pollutants to the stream?
- Can buffers heal gullies?
- What happens to water flowing down grassed waterways when buffers are installed?
- Can buffers slow stream meandering?
- What buffer vegetation creates the best kind of wildlife habitat?
- Is this stream a warm or cold-water fishing stream and what buffer design will provide the best in-stream habitat for that fishery?
- Will buffers help reduce stream bank erosion?

### *Personal concerns*

- Are you concerned about trees falling into the stream and backing up water?
- Are woody plants and/or native grasses/forbs better than introduced cool season grasses?
- Are you concerned about beaver dams?
- Will deer become a problem for your crops?

- Are you concerned that the buffer will be a source of weeds for your crop fields?
- How much maintenance is required once the system is installed?
- Will fences to keep cattle out of the stream be destroyed by floods?

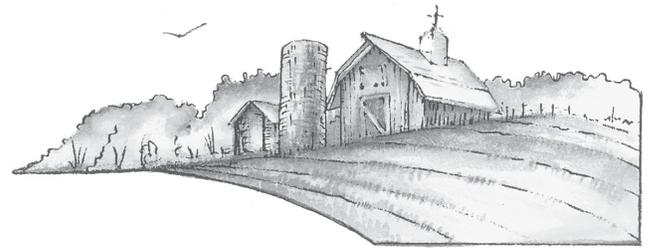
### *Concerns about loss of income and the future management?*

- How much land will be taken out of crop production or pasture?
- Can specific products be harvested from the buffer to offset income losses?
- Are there community groups willing to help establish the RiMS?
- Are private consultants available to establish the system or will you have to do it?
- Will you do the maintenance of the system and if so, what kinds of equipment do you have to do the work?

## Assess its Present Condition

Now that you have the tools and have identified your goals and concerns, it is time to get out and walk the land to identify the present condition of the riparian zone and any specific problems that may exist. Once that has been accomplished you will be ready to develop a specific RiMS design for the area with the help of a natural resource professional. Take your time and write notes along the way, and circle problem areas on the maps and aerial photographs. As you walk the site, consider some of the following questions:

- Is the stream naturally meandering or has it been straightened?
- How do the stream banks look?
- What is the distance from the streambed to the top of the banks?



- Are the banks steeply vertical or gently sloping?
- Is upland erosion bringing sediment into the riparian zone?
- Are there major slumps and eroded sections?
- Are the banks actively eroding?
- Are crop grounds being lost to erosion?
- Are there concentrated flow areas to the stream?
- Are there any major gullies entering the stream?
- How many tiles enter the stream?
- What vegetation is already there and how wide is it?
- Is it remnant prairie or forest?
- Are there grass, shrubs, and trees anywhere in the present area?
- Is the area adjacent to the stream in row crops or in perennial forage crops or pasture?
- How close are crops planted to the stream?
- Is there wildlife present?
- Is the stream fishable and if so, what do people catch?
- Is the area grazed and are livestock allowed access to the stream?
- Are livestock grazed continuously or rotated through the riparian pastures?
- Are there any naturally wet areas, seeps, or springs close to the stream?
- What are the upslope conditions?
- Are there gullies that should have grassed waterways?
- Is the river or stream on the EPA list of Iowa's impaired waters?

Answering these questions should provide you with an analysis of the present condition of your stream corridor. SVAP will address some of the same questions. Use it to come up with a rating of poor, fair, good or excellent. As you use SVAP make sure to develop a detailed site map to identify specific problem area along the stream. A local natural resource professional can help you if you have further questions about your assessment or SVAP.

### Begin the design process

You have identified your goals, addressed your concerns, identified available incentive programs, and completed a detailed site assessment of your riparian zone. You are now ready to begin the design process. Identify the types of RiMS practices needed for your situation. If the stream banks are vegetated and gently sloping you may only need a riparian forest buffer, native grass/forb filter, or cool season grass filter. If the stream banks are steep and roads, structures or other valuable property is threatened by erosion, you may need stream bank bioengineering to stabilize the banks. In-stream structures like boulder weirs may also be used to stabilize the banks and channel and to create in-stream habitat. Consider developing wetlands to intercept field drain tiles before they enter the creek. Fencing or intensive rotational grazing may be used to reduce the impact of livestock on the stream.



Concerns with present stream condition: Erosion and loss of cropland, tile drainage into the stream, and erosion by livestock.



One or more of these RiMS practices may be needed to fully address the conditions of your site. A natural resource professional will assist you in selecting the right combination of these practices. Once that is complete, you will be ready to develop a specific design for your project site. Talk with a local natural resource professional to identify possible Federal or State incentive programs and review any design specifications required by those programs. The local NRCS/FSA USDA Farm Service Center will have a list of all the available cost-share programs and design specifications. When considering programs, you should ask yourself these questions:

- Do I need incentive payments to offset crop or grazing income?
- Do I need monetary assistance to establish and maintain the buffer?

- Will I need money after the contract period has expired?

To help you better communicate with the natural resource professional, the next brochure in this series outlines specific design considerations for RiMS.



**A well designed riparian management system enhances land function and aesthetics.**

Sponsored by:

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Agroecology Issue Team Riparian Management System website:

<http://www.buffer.forestry.iastate.edu>



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