

## **Statute & Definitions**

### **Statute:**

**P.L. 100-4, Section 319-** Congress amended the Clean Water Act (CWA) in 1987 to establish the section 319 Nonpoint Source Management Program because it recognized the need for greater federal leadership to help focus State and local nonpoint source efforts. Under Section 319, States, Territories and Indian Tribes receive grant money which supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects. The goal of Section 319 of the Clean Water Act is to restore to full use those waters, both surface and groundwater, impaired by NPS and to prevent future impairments of all waters.

### **Definitions:**

**Riparian Area-** The vegetated green zone adjacent to streams, rivers, lakes and ponds

**Nonpoint Source Pollution (NPS)-** Pollution which originates from several different sources

**Point Source Pollution-** Pollution which originates from a single definable source

**AFO-** Animal Feeding Operation. Your operation is AFO if you confine animals for at least 45 days in a 12-month period **and** there is no grass or other vegetation in the confinement area during the normal growing season.

**CAFO-** Concentrated Animal Feeding Operation

- Large CAFOs – Have at least 1,000 beef cattle animal units (i.e. heifers, feeders, cow/calf pairs).

- Medium CAFOs – Contain a man-made ditch or pipe that carries manure or wastewater from your operation to surface water or animals come into contact with surface water running through the area where they are confined. In addition, the operation must have at least 300 beef cattle animal units (i.e. heifers, feeders, cow/calf pairs).
- Designated CAFOs – No matter the size of the operation, if it is an AFO, it may be designated a CAFO. If a permitting authority inspects the operation and finds that it is adding pollutants to surface waters, a CAFO permit might be needed.

**Watershed**- the area of land where all of the water that is under it or drains off of it goes into the same place



*Photo by Jared Koch*

***Damage Indicators:  
recognizing damaged or degraded  
riparian areas***

- Shallow water
- Wider than natural width
- Warmer in summer
- Freezes easily in winter
- Sediment in water
- Little or no vegetation on streambanks
- Streambank erosion
- Increase in noxious weeds
- Increase or decrease in woody vegetation (could be a positive or negative indicator)
- Presence of “silt fans”
- Lowered water table
- Decrease in production of vegetation



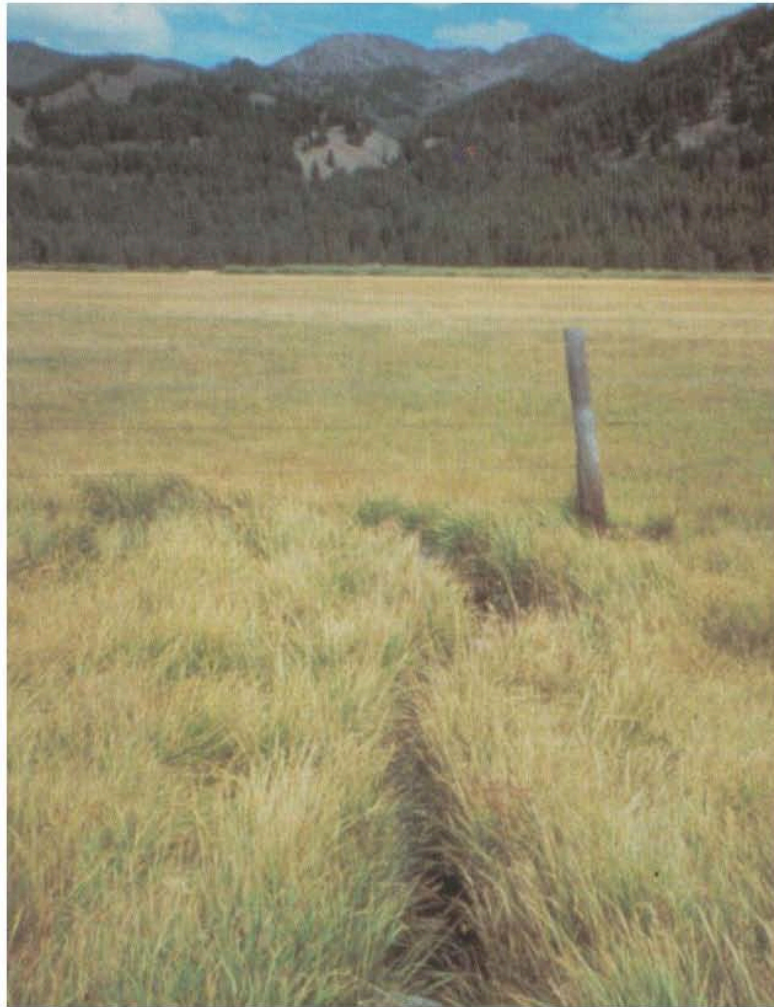
*Photo by Richard Prange*



*Photo by William Platts*

Although the stream in the above picture may look healthy, it does show red flags. It is shallower and wider than natural.





*Photo by William Platts*

The above picture is of the same stream immediately downstream of the picture on the previous page. In this picture, the stream is narrower and deeper with abundant grasses to provide a filtering and insulating effect. As a result, the stream is cooler in the summer and warmer in the winter.

## Recognizing and Solving the Problem

Here are some examples of how beef producers have recognized damaged riparian areas and utilized best management practices to benefit their overall productivity and increase their profit.

### **Recognizing the problem: *Rangeland Condition***

Deteriorating rangeland condition can have a negative affect on water quality. As upland pastures dry out, cattle seek the more palatable forage located in riparian areas. Cattle tend to crowd riparian areas for more palatable forage as well as an easily accessible watering source. As cattle graze in the riparian areas, they remove forage that acts to cool and disperse the flow of water. Removal of vegetation can increase velocity and runoff as well as the temperature of the water, which may lead to decreased water quality. Increased water flow in riparian areas can cause excessive erosion and downcutting of streams and increased water temperature. If the stream channel continues to downcut, the water table can be lowered causing the riparian area to go dry.

### **Implementing BMPs: *Rangeland Condition***

In this case, it is extremely important to employ a grazing strategy along with other BMPs to minimize the impact on riparian areas.

Placing water tanks outside of riparian areas can reduce the need for cattle to utilize riparian areas for their watering source. In some cases it may be necessary to fence off riparian areas to employ a rotational grazing strategy or to allow the riparian area rest from grazing.

Where cattle have normally grazed in riparian areas and used streams as a watering source, beef producers can provide other sources of water and rotate cattle between riparian pastures. These other sources of water can include water troughs and water tanks supplied by wells or developed springs. Applying a rotational grazing BMP or even deferring grazing to allow riparian areas to rest and recover will ultimately improve the quality of the riparian

area and prevent streambank erosion. As beef producers implement these improvements, it is a perfect opportunity to make such improvements to benefit several resources rather than a single resource.

**Recognizing the problem: *Working Facilities***

Corrals that have been placed in riparian areas for a convenient source of water can be a major contributor to both nonpoint source pollution and may fall under CAFO/AFO regulations. Corrals placed in riparian areas not only can damage water quality, they can also have negative affects on herd health. Stagnate areas aid in the incubation of bacteria that can potentially cause illness in cattle.

**Implementing BMPs: *Working Facilities***

Beef producers in this situation should provide alternate sources of water. Again, beef producers can provide water tanks and troughs for the alternate source of stock water. While designing the water source improvements, the beef producer should relocate the corral away from the riparian area. Through applying these BMPs, the beef producer will improve water quality as well as the health of the cattle.

It is important to note that healthy grazing practices such as rotational grazing or deferred grazing in riparian areas promote riparian area health in most cases.

By applying best management practices such as rotational grazing, providing rest periods in riparian areas through fencing or relocating corrals and providing alternate livestock water sources, beef producers can improve rangeland quality, water quality and herd health. These practices improve the water quality by reducing runoff of pollutants such as livestock waste associated with non-point source pollution. Beef producers can implement these BMPs to benefit their land, water and themselves.

## **Riparian Condition Check List**

The following is a checklist of various signs that indicate that a best management practice should be implemented to improve water quality and riparian area health:

### **Section A: Eroding Streambanks**

- Exposed streambanks
- Excessive sediment loading in the stream during periods of high flow
- Sparse grass cover in riparian area including streambanks and surrounding area
- Sparse shrub cover in riparian area including streambanks and surrounding area
- Animals tend to cross in same area
- Animals tend to congregate in riparian areas
- Streambanks are eroding very badly (noticeably from month to month)
- Animals use riparian areas as their main source of drinking water

### **Section B: Rangeland Management**

- Sparse vegetation on upland areas
- Running water through corrals
- Animals tend to congregate in one area
- Animals tend to utilize riparian areas more than upland areas
- Animals tend to utilize one area more than another in the riparian area

If you selected any of the signs in Section A, you should consider implementing a best management practice in the eroding streambank section. For example, if you chose “Animals tend to congregate in riparian areas,” you could place salt and supplemental feed in upland areas to move the animals away from the riparian area.



If you selected any of the signs in Section B, you should consider implementing a best management practice in the rangeland management section. For example, if you chose “Sparse vegetation on upland areas,” you could renovate and seed uplands with preferred forage species along with other BMPs to improve water quality and overall riparian area health.

Whatever BMP or combination of BMP(s) you choose should fit your operation and your goals. If a BMP does not fit, adaptation of the BMP or a completely different BMP may be required. Consulting with your local conservation districts, NRCS, extension agent or a qualified technical service provider is a good idea before implementing any BMP.



*Photo by Lucy Meyring*

## **Best Management Practices**

### **Eroding Streambanks:**

#### **Water and mineral sources:**

- Place salt and supplemental feed in upland areas.
  - Controls the distribution of livestock.
  - In conjunction with other practices such as providing off-stream water sources, this can be a very effective tool to manage the distribution of livestock.
- Provide off-stream, high-quality water sources.
  - Controls the distribution of livestock.
  - Encourages livestock to voluntarily move out of riparian areas for high-quality water sources.

#### **Vegetation:**

- Improve forage in upland areas.
  - Controls the distribution of livestock.
  - Encourages livestock to voluntarily move out of riparian areas to upland areas.
- Create riparian pastures.
  - By creating riparian pastures, vegetative cover can be re-established while still allowing livestock to utilize the riparian areas through more intensive management practices.
- Leave enough plant growth to protect streambanks and filter sediments.
  - Buffers the streambanks to prevent erosion.
  - Creates a buffer zone to filter runoff from uplands.
- Set grazing periods and specific rest periods to protect streambank stability.
  - Prevents streambank erosion by managing the riparian area and adjusting grazing intervals.

- Create riparian buffers to protect streambanks and filter sediments.
  - Establishes forage along streambanks, filters runoff from uplands and prevents streambank erosion.

**Water crossings:**

- Place rocks or other obstacles on streambanks to limit animal access and the number of crossings.
  - Encourages livestock to utilize specific areas for stream crossings.
- Create hardened stream crossings.
  - Reduces erosion at stream crossings.



*Photo by Richard Prange*































