

Erosion caused by concentrated upland runoff draining directly into the river.



Unstable shoreline with poor riparian vegetation.



Erosion caused by drainage pipe from house gutters.



Transports runoff from gutters without creating erosion.



Riparian area impacted by cattle grazing and watering.



Alternative watering sources for livestock on adjacent uplands.

Protecting Your Investment

A Landowner's Guide to Understanding Riparian Areas



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Riparian Areas

A riparian area is a strip of vegetation bordering streams and rivers that functions as a buffer between the stream and upland areas. The vegetation includes trees, shrubs and grasses that grow in the riparian areas. Vegetation traps sediment from storm-water runoff from the uplands by filtering the water before it goes into the stream. The roots of the vegetation strengthen the soil along the streambank, which helps protect the shoreline from erosion. Riparian vegetation helps dissipate energy from the stream during floods. Healthy riparian areas also provide food and shelter for many important aquatic and terrestrial organisms.

Healthy Riparian Areas

Healthy riparian areas are characterized by:

Abundant vegetation

- Decreases surface runoff, provides habitat and food for aquatic and terrestrial organisms. It also provides shade and nutrients for the stream.
- Dense root structure along the bank results in strengthened soil, increased filtration and absorption of sub-surface runoff.

Floodplain Berms

• Berms are earthen embankments along stream banks that slow surface runoff. Water that pools behind the berm can be easily absorbed by the soil and riparian vegetation.

Impaired Riparian Areas Impaired riparian areas are characterized by:

Sparse or complete lack of vegetation

- Surface runoff increases because there is nothing to obstruct or slow the runoff.
- Poor root structure along the bank results in weakened soil, increased subsurface runoff, and bank instability.
- Increases stream velocity on the floodplain during floods, which increases stream bank erosion.

Steep, featureless, eroded shoreline

• Poor habitat for fish and other aquatic organisms.

Tips for Bank Protection

Protecting riparian areas is important to maintaining the natural stability of the stream and its shoreline. Any disturbances to the vegetation growing along the stream bank can weaken the shoreline and cause bank failures or erosion problems. Mowing or clearing to the stream edge for aesthetic or agricultural purposes can have negative impacts on the stream, the stream shoreline, and the adjoining uplands. The use of alternative livestock watering devices keeps livestock out of the stream and off stream banks. Other problematic situations occur when water from the property is directed toward the stream. Directing water from gutters, drains, and ditches concentrates and accelerates runoff toward the stream. This creates greater potential for erosion and localized weak spots in the soil. French drains and armored ditches are useful alternatives for transporting excess water from adjoining uplands to the stream, and do not promote erosion.

Do

- Provide at least a 30-foot-wide buffer of vegetation next to the shoreline.
- Use alternative watering devices for livestock.
- Redirect runoff to the opposite side of the house from the stream or direct water through a French drain or an armored ditch to prevent surface erosion. This allows seepage into groundwater.
- Try to establish vegetation on the eroded area.

Don't

- Mow or clear vegetation from the riparian area.
- Allow livestock to access the river for watering.
- Direct water away from your home or adjoining uplands.
- Dump debris such as limbs, branches, stumps, leaves and bricks into erosional areas along the shoreline. The debris shades out the soil and prohibits vegetation from growing, and promotes surface erosion below the debris.



Internet Resources

- www.adeq.state.ar.us
- www.uark.edu
- www.watershedconservation.org
- www.cowsandfish.org
- www.nrcs.usda.gov
- www.arnatural.org
- www.anrc.arkansas.gov
- www.swl.usace.army.mil