

Taking Care of

streams

in Western Washington, Western Oregon, and Coastal Alaska

A Landowner's Guide to Riparian Areas

PNW 558 • October 2002 • A Pacific Northwest Extension publication

Oregon State University • University of Idaho • Washington State University
in cooperation with the University of Alaska

As a landowner in the Pacific Northwest, you have a unique opportunity to help maintain or improve the health of streams and riparian areas.

A riparian area is the area of land adjacent to a stream, lake, or wetland. Most healthy, natural riparian areas have moist, fertile soils that support many types of moisture-loving plants. These plants provide food and shelter to numerous fish and wildlife.

Healthy riparian areas:

- Reduce the chance of flooding
- Improve water quality
- Provide habitat for fish and wildlife

Why do riparian areas matter?

Plants in healthy riparian areas:

- Provide wood to streams, creating fish habitat and slowing the stream current after storms.
- Shade streams in summer. Cool water is healthier for many native fish species.
- Help prevent erosion by holding soil in place with their roots.
- Filter sediment out of muddy runoff, keeping sediment from smothering fish habitat.
- Allow heavy winter rains to soak into the soil instead of running into the stream. This allows water to be released slowly to the stream during the dry season.
- Filter out pollutants, such as fertilizers, pesticides, and animal wastes.
- Provide important food sources, homes, shelter, and travel corridors for wildlife, fish, and other aquatic organisms.

The bottom line is:

- Less winter flooding
- More water in the stream during summer
- Cleaner water
- Homes and food for wildlife, including many species of fish, insects, amphibians, reptiles, birds, and mammals



It's all about plants

Healthy riparian areas include a variety of types and ages of plants, including trees, shrubs, grasses, and groundcovers. Plants adapted to local rainfall, climate, insects, and soil conditions tend to be easier to care for because they need less water and pesticides.

Most native plants are well adapted to their region. In the Pacific Northwest, a few of the common native riparian plants are:

- Alder
- Black cottonwood
- Douglas-fir
- Dwarf birch
- Elderberry
- Highbush cranberry
- Labrador tea
- Oceanspray
- Oregon ash
- Pacific ninebark
- Red-osier dogwood
- Salmonberry
- Sitka spruce
- Snowberry
- Swamp rose
- Western hemlock
- Western redcedar
- Wild rose
- Willow

Snowberry



Red-osier dogwood



Oceanspray



How do people change riparian areas?

Removing or damaging plants through livestock grazing, timber harvest, construction, and landscaping practices, especially in the riparian area, can harm streams. Plants, particularly trees and shrubs, catch rainfall and allow it to soak slowly into the ground instead of running quickly into streams. Plants also help prevent the formation of gullies that can result when water flows across bare soils. When water runoff from storms reaches streams too quickly, more erosion and flooding occur downstream. More rainwater, pesticides, fertilizers, and sediment reach the stream in areas without riparian plants to slow and filter water.

When streams and riparian areas are not healthy, people feel the consequences.

- We lose recreational areas.
- Fish and wildlife decline, reducing opportunities for hunting, fishing, and wildlife viewing.
- Increased flooding may cause erosion and property damage.
- The region may lose economic opportunities because people avoid unattractive and unhealthy areas.

Look for ways to encourage water to seep into the soil on your property rather than flowing off.



Do not allow livestock to enter streams.

What Can You Do?

Tend to your livestock and riparian areas

- Alternate grazing areas to allow vegetation to recover.
- Allow grazing when forage plants are about 9 to 10 inches tall, and stop grazing when they have been grazed down to about 3 to 4 inches tall.
- Limit grazing of riparian areas by using fences or paddocks where possible.
- Provide water, shade, and salt in other areas to encourage livestock to graze and loiter away from riparian areas.
- Limit or avoid grazing in riparian areas during the fall and winter when grasses are dormant and the chance of erosion from runoff is greater.
- Keep livestock out of streams, other bodies of water, and fragile riparian areas that have difficulty recovering.
- Locate animal waste and compost piles on flat surfaces away from streams or drainage areas and cover them during wet periods.
- Locate paddocks in dry areas away from streams.
- Provide wide, grassy areas around paddocks to keep mud and animal waste in the paddock area from entering streams or ponds.
- Use gutters and downspouts on barns and stables to direct water away from paddocks.
- If grazing a large number of livestock, create a grazing management plan. Contacts for technical assistance are listed on the back of this brochure.

Take care of plants and the streamside

- Promote dense vegetation to reduce runoff and trap contaminants.
- Learn about native plants and use them where appropriate.
- Restore eroded streambanks with help from a professional.
- Leave wood and other natural materials in streams.
- Don't straighten channels or place rubble or rip-rap on streambanks.
- Use switchback trails to reduce erosion in steep areas.

Grow and maintain a stream-friendly garden and lawn

- Select appropriate plants. Native plants can be easier to care for because they often are better adapted to local pests and rainfall conditions.
- Minimize the use of pesticides and fertilizers. Consider using natural, slow-release fertilizers.
- Locate compost piles on flat surfaces away from streams or drainage areas, and keep them covered during the wet winter months. Keep grass clippings away from streams.
- Apply compost to pastures and gardens only during the growing season.

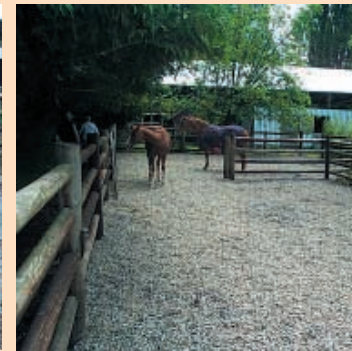
Be careful when you build

- Leave as many native plants as possible near streams and everywhere!
- Plan new construction away from existing streams and wetlands instead of modifying them.
- Minimize paved areas. Keep the roof area, walkways, and driveways as small as possible.
- Use gravel or bark instead of pavement for paths and driveways.
- Always observe local ordinances and get proper permits.
- Leave as wide a vegetation buffer as possible next to the stream.
- Direct runoff toward landscaping or other areas where it will soak into the ground.

Take pride in caring for the stream flowing across your land.



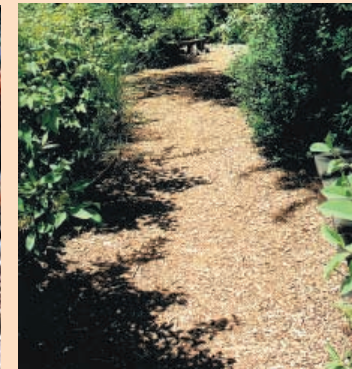
Corral before implementing heavy-use area best management practices. (Photo courtesy of Kitsap Conservation District)



Corral and happy horses after installation of gravel. (Photo courtesy of Kitsap Conservation District)



Alternative watering systems such as nose pumps help keep livestock out of streams.



Install a bark path instead of pavement.

There's more you can do around the house

- Don't pour soapy water, automobile oil, paint, household chemicals, or pesticides down storm drains. Drains often are connected directly to streams.
- Direct gutters away from streams, pavement, and septic drain fields and into areas where water can seep slowly into the soil.
- Keep livestock, cars, and trees away from your septic tank and septic field.
- Inspect your septic system annually, and pump the tank as necessary.
- Keep pet waste away from streams, riparian areas, and paved areas. Put pet waste in a bag and place it in the trash.
- Use less toxic or nontoxic household cleaners.

Taking Care of Streams in Western Washington, Western Oregon, and Coastal Alaska

A Landowner's Guide to Riparian Areas

For more information

Grow Your Own Native Landscape (M. Leigh, revised 1999, Washington State University Cooperative Extension, MISC 0273). <http://gardening.wsu.edu/nwnative/>

Life on the Edge: Improving Riparian Function (D. Godwin, 2000, Oregon State University Extension Service, EM 8738). <http://eesc.oregonstate.edu/agcomwebfile/edmat/EM8738.pdf>

Protecting Groundwater: Managing Livestock on Small Acreage (J. Schmidt and B. Wolfley, 1992, Washington State University Cooperative Extension, EB 1713). <http://cru.cahe.wsu.edu/CEPublications/eb1713/eb1713.html>

*Stream*A*Syst: A Tool to Help You Examine Stream Conditions on Your Property* (G. Andrews and L. Townsend, 2000, Oregon State University Extension Service, EM 8761). <http://eesc.oregonstate.edu/agcomwebfile/edmat/html/em/em8761/em8761.html>

Stream Corridor Restoration—Principles, Processes, and Practices (The Federal Interagency Stream Restoration Working Group, 1998, revised August 2000). http://www.usda.gov/stream_restoration

EPA Region 10

Seattle, WA
206-553-1200
800-424-4372 (toll free in AK, ID, OR, WA)
<http://www.epa.gov/r10earth/>

Oregon

Oregon State University Extension Service
Call your local office or 541-737-4021
<http://oregonstate.edu/extension/>

Natural Resources Conservation Service
503-414-3200 (<http://www.or.nrcs.usda.gov/>)

Oregon Association of Conservation Districts
503-472-6307
<http://www.netcnct.net/community/oacd/>

Washington

Washington State University Cooperative Extension (call your local office or 509-335-2885)
<http://wawater.wsu.edu>

Natural Resources Conservation Service
509-323-2900 (<http://www.wa.nrcs.usda.gov/>)

Washington Association of Conservation Districts
360-407-6200 (<http://wa.nacdnet.org/>)

Alaska

University of Alaska Cooperative Extension
Call your local office or 907-786-6300
<http://www.uaf.edu/coop-ext/>

Natural Resources Conservation Service
907-761-7700 (<http://www.ak.nrcs.usda.gov/>)

Alaska Soil and Water Conservation Districts
907-271-2424 (<http://www.alaskaswcds.org/alaska/>)

Funded in part by USEPA Region 10 and the USDA Cooperative State Research, Education, and Extension System. Regional Water Quality Coordination Team: Marilyn Freeman, EPA liaison; Robert L. Mahler, University of Idaho; J. Ronald Miner, Oregon State University; Robert Simmons, Washington State University; Fred Sorensen, University of Alaska; and Sylvia Kantor, Washington State University (editor). Cover photo (bottom) courtesy of Northwest Earth Institute's Interactive Biodiversity Information System.

© 2002 Oregon State University. This publication may be photocopied or reprinted in its entirety for noncommercial purposes. Published and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914, by the Pacific Northwest Extension publishing cooperative (Oregon State University Extension Service, Washington State University Cooperative Extension, and the University of Idaho Cooperative Extension System) in cooperation with the University of Alaska. The four participating Extension Services offer educational programs, activities, and materials—without regard to race, color, religion, sex, sexual orientation, national origin, age, marital status, disability, and disabled veteran or Vietnam-era veteran status—as required by Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. The Oregon State University Extension Service, Washington State University Cooperative Extension, University of Idaho Cooperative Extension System, and University of Alaska Cooperative Extension are Equal Opportunity Employers. Published October 2002.



Recycled
Paper

What Can You Do?

How do people change riparian areas?

Removing or damaging plants through livestock grazing, timber harvest, construction, and landscaping practices, especially in the riparian area, can harm streams. Plants, particularly trees and shrubs, catch rainfall and allow it to soak slowly into the ground instead of running quickly into streams. Plants also help prevent the formation of gullies that can result when water flows across bare soils. When water runoff from storms reaches streams too quickly, more erosion and flooding occur downstream. More rainwater, pesticides, fertilizers, and sediment reach the stream in areas without riparian plants to slow and filter water.

When streams and riparian areas are not healthy, people feel the consequences.

- We lose recreational areas.
- Fish and wildlife decline, reducing opportunities for hunting, fishing, and wildlife viewing.
- Increased flooding may cause erosion and property damage.
- The region may lose economic opportunities because people avoid unattractive and unhealthy areas.

Look for ways to encourage water to seep into the soil on your property rather than flowing off.



Do not allow livestock to enter streams.

Tend to your livestock and riparian areas

- Alternate grazing areas to allow vegetation to recover.
- Allow grazing when forage plants are about 9 to 10 inches tall, and stop grazing when they have been grazed down to about 3 to 4 inches tall.
- Limit grazing of riparian areas by using fences or paddocks where possible.
- Provide water, shade, and salt in other areas to encourage livestock to graze and loiter away from riparian areas.
- Limit or avoid grazing in riparian areas during the fall and winter when grasses are dormant and the chance of erosion from runoff is greater.
- Keep livestock out of streams, other bodies of water, and fragile riparian areas that have difficulty recovering.
- Locate animal waste and compost piles on flat surfaces away from streams or drainage areas and cover them during wet periods.
- Locate paddocks in dry areas away from streams.
- Provide wide, grassy areas around paddocks to keep mud and animal waste in the paddock area from entering streams or ponds.
- Use gutters and downspouts on barns and stables to direct water away from paddocks.
- If grazing a large number of livestock, create a grazing management plan. Contacts for technical assistance are listed on the back of this brochure.

Take care of plants and the streamside

- Promote dense vegetation to reduce runoff and trap contaminants.
- Learn about native plants and use them where appropriate.
- Restore eroded streambanks with help from a professional.
- Leave wood and other natural materials in streams.
- Don't straighten channels or place rubble or rip-rap on streambanks.
- Use switchback trails to reduce erosion in steep areas.

Grow and maintain a stream-friendly garden and lawn

- Select appropriate plants. Native plants can be easier to care for because they often are better adapted to local pests and rainfall conditions.
- Minimize the use of pesticides and fertilizers. Consider using natural, slow-release fertilizers.
- Locate compost piles on flat surfaces away from streams or drainage areas, and keep them covered during the wet winter months. Keep grass clippings away from streams.
- Apply compost to pastures and gardens only during the growing season.

Be careful when you build

- Leave as many native plants as possible near streams and everywhere!
- Plan new construction away from existing streams and wetlands instead of modifying them.
- Minimize paved areas. Keep the roof area, walkways, and driveways as small as possible.
- Use gravel or bark instead of pavement for paths and driveways.
- Always observe local ordinances and get proper permits.
- Leave as wide a vegetation buffer as possible next to the stream.
- Direct runoff toward landscaping or other areas where it will soak into the ground.

Take pride in caring for the stream flowing across your land.



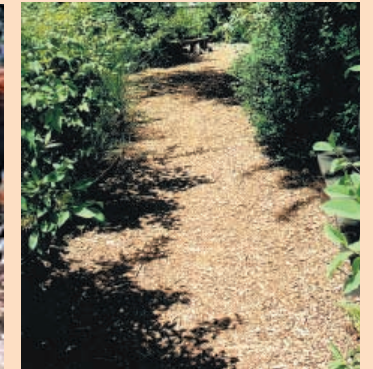
Corral before implementing heavy-use area best management practices. (Photo courtesy of Kitsap Conservation District)



Corral and happy horses after installation of gravel. (Photo courtesy of Kitsap Conservation District)



Alternative watering systems such as nose pumps help keep livestock out of streams.



Install a bark path instead of pavement.

There's more you can do around the house

- Don't pour soapy water, automobile oil, paint, household chemicals, or pesticides down storm drains. Drains often are connected directly to streams.
- Direct gutters away from streams, pavement, and septic drain fields and into areas where water can seep slowly into the soil.
- Keep livestock, cars, and trees away from your septic tank and septic field.
- Inspect your septic system annually, and pump the tank as necessary.
- Keep pet waste away from streams, riparian areas, and paved areas. Put pet waste in a bag and place it in the trash.
- Use less toxic or nontoxic household cleaners.