

This document is a publication of the Iowa Stormwater Education Partnership (ISWEP) and is made possible through partnerships with Iowa communities that are committed to improving natural resources through education.

Residential Guide to Living Near a Stream

Protect and Buffer



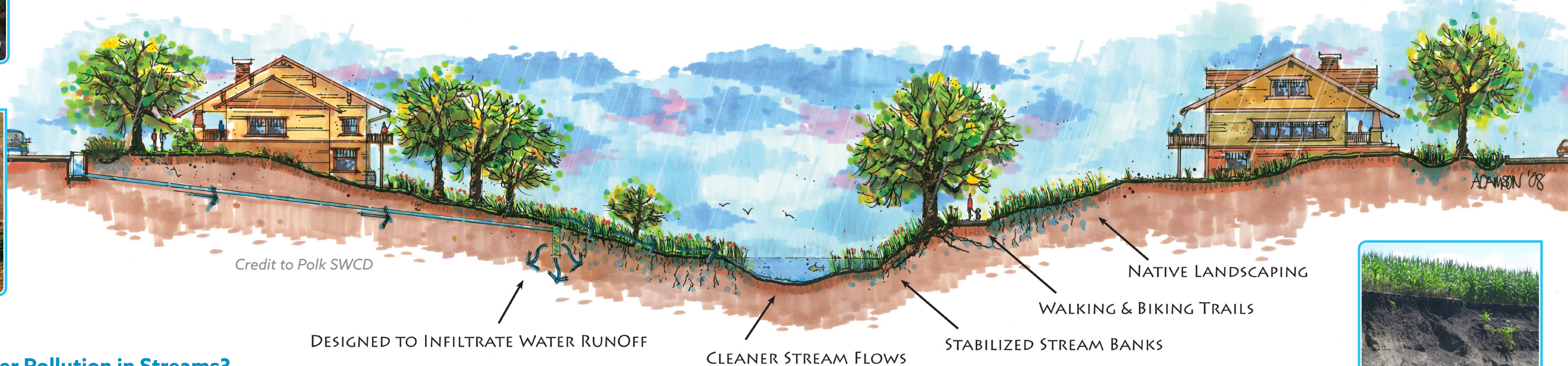
Protect your property, and the property of those living downstream, by maintaining a healthy buffer zone along the stream adjacent to your property.



Stabilized urban streambank. Source: Easter Lake Watershed



Agricultural buffer zone. Source: Iowa Environmental Focus



What Causes Water Pollution in Streams?

Streambank erosion adds excess amounts of sediment in streams, causing degraded water quality and wildlife habitat. Property owners living near a stream should manage their lawns carefully as it has a direct path for stormwater runoff to reach the stream. Lawn fertilizers (nutrients), pet waste (bacteria), and grass clippings (nutrients), and other yard wastes are all sources of pollution that can have adverse impacts downstream, and far beyond your backyard.

Learn more about stormwater, water quality, and how to prevent pollution on your property by visiting the following website:

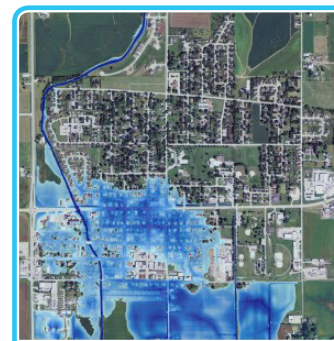
<https://IowaStormwater.org/Basics>

The Iowa Department of Natural Resources (IDNR) has a helpful guidance document on riparian buffers. Visit the link below:

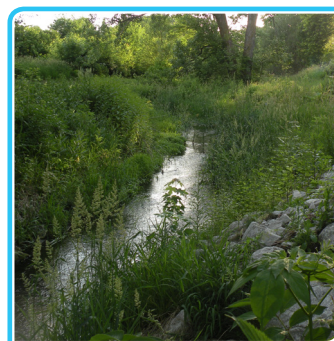
<http://bit.ly/IDNRStreambankBuffers>

How Can a "Streambank Buffer" Ordinance Protect a Stream?

A streambank buffer ordinance prescribes the width of a stream setback and may include protection for floodplains, wetlands, and steep slopes. Buffer width is typically determined by stream size and drainage area. The ordinance may require stream buffers to be included as part of new development projects. Buffer establishment, stream corridor maintenance, enforcement procedures, and maintenance agreements are components to be included in an ordinance. The ordinance allows for stream buffers to become part of the green infrastructure of a community, protecting citizens and providing places to locate trails and link systems. Contact your local municipality to see if your community has an ordinance.



Floodplain map along urban stream. Source: IHR Hydrosience & Engineering



Riparian buffer with diverse native plants. Source: Iowa Learning Farms

What are the Benefits of Living Near a Stream?

Waterfront property! Just like those living on lake or ocean-front property, living near a stream provides natural aesthetic beauty in your backyard. Streams are home to a wide array of wildlife, aquatic creatures, and native grasses and plants, making for a diverse and varied landscape. Homeowners living near a stream like these benefits but should also be responsible for trying to protect the stream by preventing pollution from entering the waterway and minimizing streambank erosion.

What is Streambank Erosion... and Why Should You Care?

Changes in your watershed, or the land area that "sheds" to a low point in the landscape, influences how fast stormwater is carried to a river or stream. Heavy rains that are not absorbed by impervious surfaces (parking lots, roads, streets, rooftops, compacted soil on lawn) are carried through the storm sewer system and discharged into neighboring streams.

As stormwater runoff flows through local streams, the stream bed (bottom) and bank (sides) become exposed over time. Soil and vegetation once in place is eroded and deposited into the stream due to the higher stream flows. Streams typically respond to this change by increasing their cross-sectional area to handle more frequent and erosive flows by either getting wider or deeper, or both.

Property owners living near a stream should also be concerned about streambank erosion as their land and structures can be destroyed by flash floods. Streams are naturally sized to handle only so much water; when more water is generated than a stream can handle, the water spills out into the adjacent floodplain.



Streambank erosion near farm field. Source: Iowa Learning Farms



Tree roots exposed via undercutting. Source: Easter Lake Watershed



Grass clippings surround storm drain. Source: Polk SWCD

Create a Buffer Zone

A buffer zone is a vegetated area near a stream that protects your property from flash flooding impacts and improves the ecological function of the stream. One method of creating a buffer zone is to replace short-rooted turf grass and weeds with deep-rooted prairie and woodland native plants. Use mowed turf borders for a more manicured look along the perimeter of the buffer zone.

Keeping the total tree canopy on your property's streambank to about 50% helps keep vegetation alive and healthy. Trees that are growing too densely can shade out understory growth, causing sparse vegetation growth and increased soil erosion. Many understory trees along streambanks such as honeysuckle are invasive and should be removed. Trees on your property that may have fallen into the streambank and directing water into the streambank should be managed.



Young trees planted along streambank. Source: Virginia Department of Forestry

Planting Native Iowa Trees, Shrubs, and Plants

In residential settings, a dense band of prairie or woodland plants can be placed on the downslope side of a property and be used to filter and absorb rainfall and runoff. Use plugs or plants to speed establishment. Native nurseries and garden centers have a variety of plants to choose from for small plantings. Native Trees can be planted along streambanks as well. They soak up a lot of water! According to the U.S. EPA, a tree with a 25-foot diameter canopy can manage a 1-inch rainfall equivalent to the runoff generated from 2,400 square feet of impervious area!



Native plants in Iowa provide vibrant colors to any landscape. Source: ISWEP.

Tree and Snag Removals in and Near Streams

Tree wood in streams can provide habitat. After major rainfall events, there may be fallen trees (snags) that wash down the stream, impede flow and cause erosion problems. These trees can be removed from the stream and should be placed away from the floodplain so that they don't cause other issues. Trees that have fallen into the stream and have a root wad that has separated from the bank can be removed. It is important to armor the exposed area on the streambank to prevent erosion. Any trash debris that has accumulated should also be removed and disposed of in the trash or placed in an area away from the stream so that it will not obstruct stream flows.

Tips for Improving Water Quality for Homeowners Living Near a Stream



Credit to Polk SWCD

#1. Improve the infiltration of your lawn.

Soil Quality Restoration (SQR) is the process of restoring the organic content of your soil through deep aeration and the addition of compost. SQR is effective in improving how fast rainfall can infiltrate into your lawn and not runoff into the nearby stream. Many municipalities in Iowa offer cost-share assistance for homeowners for SQR.

#2. Install stormwater best management practices.

Stormwater can also be captured through various stormwater practices such as rain gardens or rain barrels. These infiltration-based practices lessen the amount of runoff that reaches the stream, which contributes to increased flash flooding in your neighborhood. Rain gardens also help recharge the groundwater and add aesthetic value to your yard! For more information on stormwater BMPs, visit: IowaStormwater.org/RainScaping



Native plants in buffer zone in a residential area. Source: ISWEP



Compost being added a residential lawn after aeration. Source: Polk SWCD



Trash collected from a river during IDNR's Project Aware. Source: Iowa Environmental Focus.

#3. Plant native trees, plants, and shrubs.

Trees, plants, and shrubs native to Iowa have much denser root systems that can absorb more water and nutrients than non-native plants and weeds. Native plants do require more maintenance in the first several years of establishment, including pulling weeds and watering. After establishment, however, native plants do not require fertilizer or irrigation, and less general maintenance. Prairie grasses and flowers are typically used in sunny areas while woodland plants prefer more shady areas. They create diverse habitat for birds and pollinators.

#4. Do not build near the stream or in the floodplain.

State and federal regulations prohibit development within floodplains without proper permits, which requires evidence that the structure won't have adverse flooding impacts on adjacent properties. In order to protect your property and existing wildlife habitat and vegetation, plan your building, outbuildings and structures such as pools and fences outside of the floodplain and away from the buffer zone and streambank.

#5. Use erosion control practices to stabilize soil.

For cases of minor streambank erosion, use simple erosion control products such as erosion control blankets in combination with revegetation. Native trees and plants can also act as a soil stabilization method. If the streambank is significantly eroding with observed loss of land, contact your local municipality, Soil and Water Conservation District (SWCD), or local watershed group for guidance.

#6. Do not dump anything into the stream or onto the banks.

Dumping any material onto stream banks or into Iowa's waterways is prohibited. Yard waste materials such as grass clippings, leaves, and brush can smother existing vegetation, which leads to erosion. These types of materials do not help stabilize stream banks. Try composting these materials. Contact your local city or county for brush disposal. Tires, machine parts, plastics, pet waste, concrete with steel reinforcing, asphalt, construction waste, and concrete washout should not be disposed of in or near the stream.