

## LESSON 5

### *How does watershed health affect me?*

Healthy watersheds generally have good soil and land quality, which leads to better water quality in the streams, lakes and rivers that they feed.

Better water quality makes Iowa's waterways a better place to have fun:

- Boating is more enjoyable in clean water.
- Swimming is safer when bacteria levels are low.
- Hiking, picnicking and bird watching in parks that surround many Iowa lakes is enhanced by good water quality.
- Fish thrive in lakes with good water quality, making fishing even better.
- Attracting visitors to Iowa's lakes and rivers has economic benefits for nearby towns.
- Outdoor activities associated with water and parks (like canoeing, waterskiing, hiking and biking) can have health benefits for participants.

## LESSON 6

### *What can I do?*

Clean water starts with you – it's up to each of us to make changes individually and to come together in groups to make a difference.

You can rally others in your community to create a watershed improvement project, which helps people make changes on the land for better water quality. See [www.iowadnr.gov/water/watershed/](http://www.iowadnr.gov/water/watershed/) for more information on starting a project.

You can also help at home by learning about rain gardens and stormwater, by never dumping anything down a storm drain, by adopting a creek and planting trees along the banks, or by cleaning up after yourself after an outdoors trip.

### For more information about watersheds:

- [www.iowadnr.gov/water/watershed/](http://www.iowadnr.gov/water/watershed/)
- [www.iowadnr.gov/other/mapping.html](http://www.iowadnr.gov/other/mapping.html)
- [www.iowaagriculture.gov/waterresources.asp](http://www.iowaagriculture.gov/waterresources.asp)
- [www.epa.gov/owow/watershed/](http://www.epa.gov/owow/watershed/)

# Watersheds 101

## Making changes on the land for better water

A Publication of the Iowa Department of Natural Resources



Watershed Improvement Program  
Iowa Department of Natural Resources  
502 E. 9th St.; Des Moines, IA 50319  
[www.iowadnr.gov/water/watershed/](http://www.iowadnr.gov/water/watershed/)

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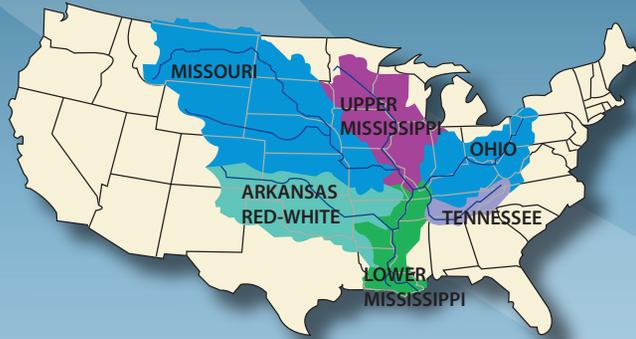
clean water  
*starts with you.*

IOWA DNR WATERSHED IMPROVEMENT

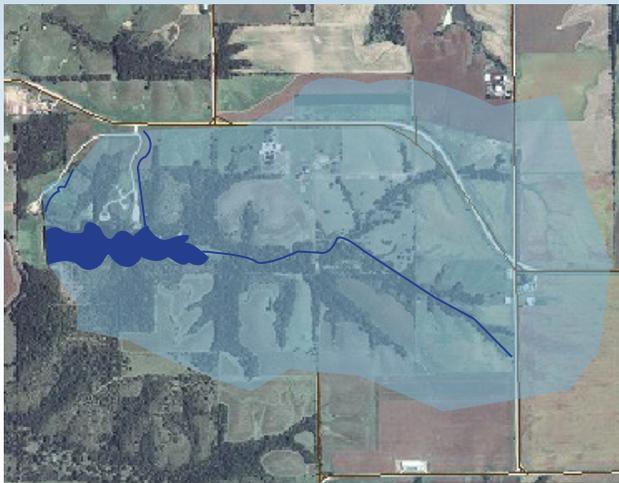
## LESSON 1

### What is a watershed?

A watershed is all of the land that drains water into a particular point, usually a stream, lake or river.



Watersheds can be found in all shapes and sizes. They can cover entire states or regions like the Mississippi River watershed above, or they can be as small as a few city blocks or farm fields, like the aerial photograph below. The shaded areas of color on the map above represent the Mississippi River watershed.



The shaded area shows the watershed, or the land that drains into the stream, in blue.

## LESSON 2

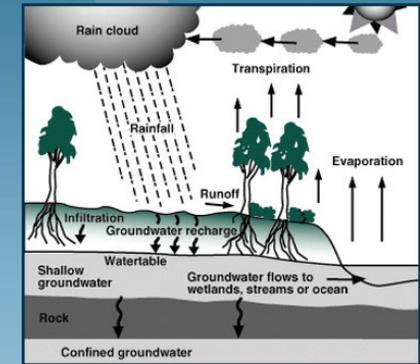
### How does water get from the land into streams, lakes and rivers?

Most of us have seen streams filled to the tops of their banks during storms. But how often do we think about how all that water gets there?

When it rains, the soil absorbs some of the water. Whatever the soil cannot absorb travels along the land, becoming runoff. This runoff will likely end up in the nearest stream, lake or river. The runoff carries with it soil particles, oil and dissolved substances, including fertilizers and pesticides, taking them into the nearest waterbody.

Water that is absorbed by the soil may be used by plants or it may enter the groundwater system. Groundwater flows like a very slow underground river, often ending up in a nearby stream.

The soil, sand and rocks that the groundwater flows through can act as a filter, removing pollutants from the water. However, if the soil is contaminated, the filter may no longer function properly, making it a concern for the many lowans that use groundwater for drinking.



Source: Australian Water and Rivers Commission

## LESSON 3

### How do cities affect watersheds?

How land is used in urban areas can affect water quality in a number of ways:

- Parking lots, buildings, roads and driveways keep runoff from soaking into the soil. Water runs off these surfaces, often carrying oil, fertilizer, bacteria and pesticides into streams without treatment.
- Fertilizers used on lawns and golf courses may end up in streams and lakes through runoff.
- Wastewater treatment plants contribute nutrients to waterways. They sometimes overflow, allowing untreated wastewater to enter a stream.
- Underground storage tanks for chemicals, such as gasoline, may rupture, leaking into groundwater.
- Aquatic habitats in urban streams are often highly modified and degraded due to channel straightening, culverts and concrete basins.

## LESSON 4

### How do farms affect watersheds?

Land uses in rural areas affect water quality in other ways:

- Fertilizers and pesticides from crop fields are often found in runoff in rural areas.
- Septic systems that are not properly constructed or maintained can send bacteria into streams.
- Cattle in pastures often have direct access to streams, trampling the streambank, leading to erosion.
- Surface runoff from crop fields may carry large amounts of soil, causing field erosion and may fill in lakes, rivers and streams with soil.
- Livestock waste may reach streams in runoff, causing algae blooms and bacteria problems.
- Storage tanks for chemicals like pesticides and fertilizers may rupture, causing fish kills and contaminating groundwater.