

AFTER THE STORM

Understanding stormwater and how it affects our water resources

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rainfall or snowmelt flows over the land. Impervious surfaces such as roads, sidewalks, parking lots, and driveways speed up the flow of stormwater runoff and prevent the stormwater from soaking into the ground. Runoff can pick up many different pollutants such as litter, chemicals, nutrients, sediment, bacteria, heavy metals and just about anything else found on the ground. The runoff then carries untreated pollutants with it into storm sewers, lakes, streams, or wetlands. This type of pollution into waterways is referred to as nonpoint source pollution.



Raspberry River during spring snowmelt

What are the Impacts from Stormwater Runoff?

Polluted stormwater runoff can have many negative environmental effects that impact plants, animals, fish, and people.

- Sediment causes cloudy water, making it difficult for plants to grow; smothers aquatic habitat and fish spawning grounds; and creates conditions that are unappealing to people.

- Excessive nutrients can lead to algae blooms. After algae die, they decompose in a process that removes oxygen from the water. Fish and other aquatic organisms cannot survive in water with low oxygen levels. Some algae blooms can also be harmful to human health; these are known as harmful algae blooms or HABs.



Algae in Raspberry River

survive in water with low oxygen levels. Some algae blooms can also be harmful to human health; these are known as harmful algae blooms or HABs.

- Bacteria and other pathogens can create health hazards, causing beach closures.

- Litter (plastic bags, bottles, cans, cigarette butts, etc.) can be consumed by aquatic life such as birds, fish, and turtles and cause them to choke and suffocate. Litter on the land or in waterways is also very unappealing to people and limits our enjoyment of nature.

- Hazardous wastes like herbicides, pesticides, paint, solvents, motor oil, etc. can poison aquatic life. Other animals and people can become ill from ingesting contaminated aquatic life or polluted water.

- Polluted stormwater can also impact drinking water sources, which can affect human health as well as lead to higher water treatment expenses.

Be the Solution to Stormwater Pollution

Residential

Household Wastes

- Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, herbicides, solvents, and used automotive fluids.

Lawn Care

- Use pesticides, insecticides, herbicides, and fertilizers sparingly and according to directions.
- Don't overwater your lawn.
- Compost or use yard waste as mulch; don't sweep it into streams or storm drains.
- Keep piles of dirt that are being used in landscaping projects covered.
- Pick up pet waste and dispose of it in the garbage or flush it down the toilet.

Septic Systems

- Malfunctioning septic systems release nutrients and pathogens into waterways. Have your system inspected every 3 years and have it pumped as necessary (every 3–5 years).

Auto Care

- Use a commercial car wash that recycles its wastewater, or wash your car on your lawn instead of your driveway so the water soaks into the ground.

- Repair vehicle leaks and properly dispose of auto fluids and batteries at designated drop-off or recycling stations.



Septic system leakage



Permeable pavement

Beneficial Residential Landscaping

- Permeable Pavement: typical pavement doesn't allow water to soak into the ground and causes runoff to move more rapidly. Permeable pavement systems allow water to flow through it and into the ground, reducing the volume of stormwater runoff entering waterways.

- Rain Barrels: rain barrels can be installed at gutter outlets and allow the collection of

rainwater that can be used later for watering plants or your lawn.

- Rain Gardens: specially designed gardens that are planted with native plants, allows runoff to collect and soak into the ground.
- Buffer/Filter Strips: strips of native vegetation along roads or streams that slow the flow of stormwater runoff and filter out pollutants.

Commercial

- Sweep up litter and other debris from sidewalks, driveways, and parking lots.
- Keep dumpsters covered and keep them clean to avoid leaks.



Buffer strip at Red Cliff Hatchery



Construction site

- Report any chemical spills to Red Cliff Environmental: 715-779-3650, or Environmental Department and Wardens: 715-779-3732 for prompt and proper cleanup.

Construction

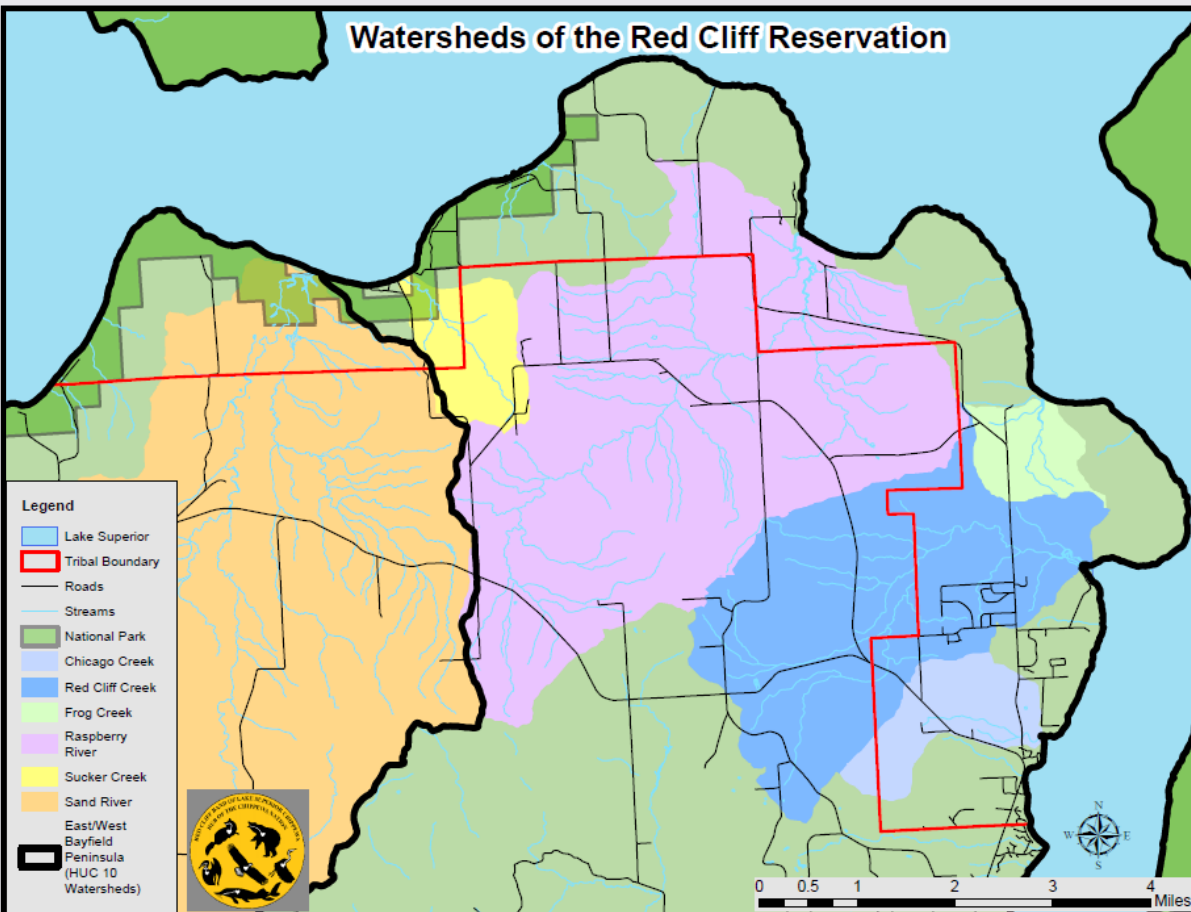
- Prevent soil disturbance and erosion as much as possible during construction and re-seed bare ground as soon as you are able.
- Divert stormwater away from disturbed/exposed soils on the construction site.
- Install silt fencing, vehicle mud removal areas, vegetative cover, and other erosion control measures. Proper maintenance of these controls is necessary, especially after storm events.

Recent Stormwater Remediation Projects by Red Cliff

In 2016, the Environmental Protection Agency (EPA) provided Great Lakes Restoration Initiative (GLRI) funds to Red Cliff for habitat restoration work at the Legendary Waters Resort and Casino. Over the summer, a beach dune was installed at the casino beach (2,500 plants), buffer strips were planted along the lakeside sidewalks (2,900 plants), a rain garden was built between the casino and campground (2,400 plants), and 45 shrubs and 25 trees were planted throughout the property. These efforts were aimed at reducing the amount of stormwater runoff (and pollutants) entering Lake Superior and also provide the benefits of beautiful flowering plants that provide food and habitat for wildlife.

What watershed do you live in?

Check out the map below to find out what Red Cliff watershed you live in.



Red Cliff Band of Lake Superior Chippewa- Water Resources Program

Phone: 715-779-3650

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88455 Pike Road
Bayfield, WI 54814**

