

We Need Your Help With Sediment Fingerprinting



What is **Sediment Fingerprinting**?

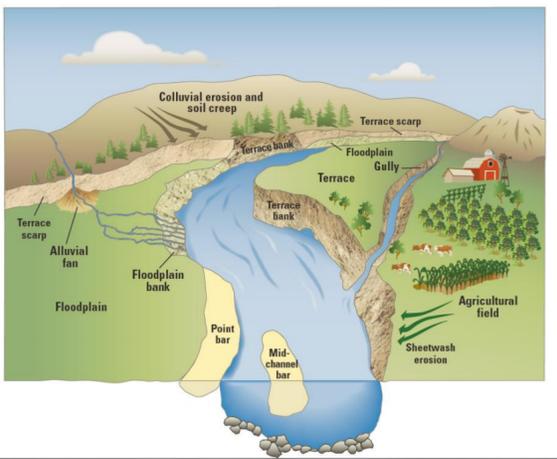
It's a way of finding where the sediment pollution is coming from when the source is not exactly clear.

How is it like a **fingerprint**?

Imagine a big bag of Skittles dumped all over a yard. Each color in any location has its own unique and identifiable "fingerprint". When it rains, imagine only the yellow and red Skittles running off into a river causing the river to turn colors. When we look at the river sample, we notice that it's the yellow and red Skittles causing pollution and we're able to track down where those are and keep them from running off. With actual sediment, the different types of clay, dirt, silt and other material are made up of very unique characteristics (like a fingerprint) that we can use to help track down where it's coming from and help prevent them from polluting our rivers and streams!



What exactly is **sediment pollution** anyway?



Sources and sinks of sediment in a watershed

Source: EPA, "A Manual to Identify Sources of Fluvial Sediment"

When it rains, things like dirt, silt, clay, sand, and soil get washed into the rivers and streams which make the river cloudy. This blocks sunlight into the water which prevents vegetation from growing and makes it hard for fish and other water animals to see their food. Sometimes it's easy to see where the sediment is coming from like when storm sewer is dumping water with sand and silt from the road after a storm. Other times, it's harder to locate if the sediment is coming from streambank erosion, forests, or farm fields.

How do you **find the sediment** that's getting into the river?

We have placed passive sediment samplers at eight locations in the Little Fork River Watershed. These are collecting sediment that is suspended in the water of the river, traveling downstream. Soil samples are also being taken at different places on the ground all across the watershed. The samples are broken down in a lab in order to find their special characteristics, a fingerprint. If we notice some sediment in the river that matches a fingerprint from a sample on the ground, we will know where it is coming from and can try to prevent more of it from running off into the river. The hard part is finding a fingerprint in a huge watershed area!



Passive sediment samplers

So How Can I Help?

We are asking your permission to visit your property and collect soil samples. Using a hand shovel, we will collect about an inch of the soil surface from 20-30 locations, the total soil sample is about the size of a soft ball.

What happens if the sediment pollution is coming from **my property**?

Sediment fingerprinting, despite the name, isn't used to solve crimes. We know that most people in our area want to protect the river. It's voluntary and anonymous, we don't keep track of what property the soil came from. The sample from your property will be combined with samples of the same "cover type" to create a more comprehensive sample. This will help us know if the sediment in the river is coming mostly from the banks of the stream, the roadways, agricultural fields, forest lands, or wetlands.

If you're interested, we can offer resources to you and suggest Best Management Practices (BMPs) to reduce pollution, preserve your soil, and give you peace of mind.

If you want to help us **solve this mystery**, or if you have any questions about water where you live, let us know!

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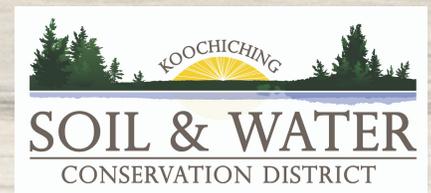
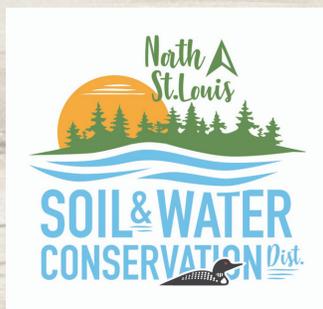
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You can also learn more at: www.koochiching.mn.us/fingerprint