

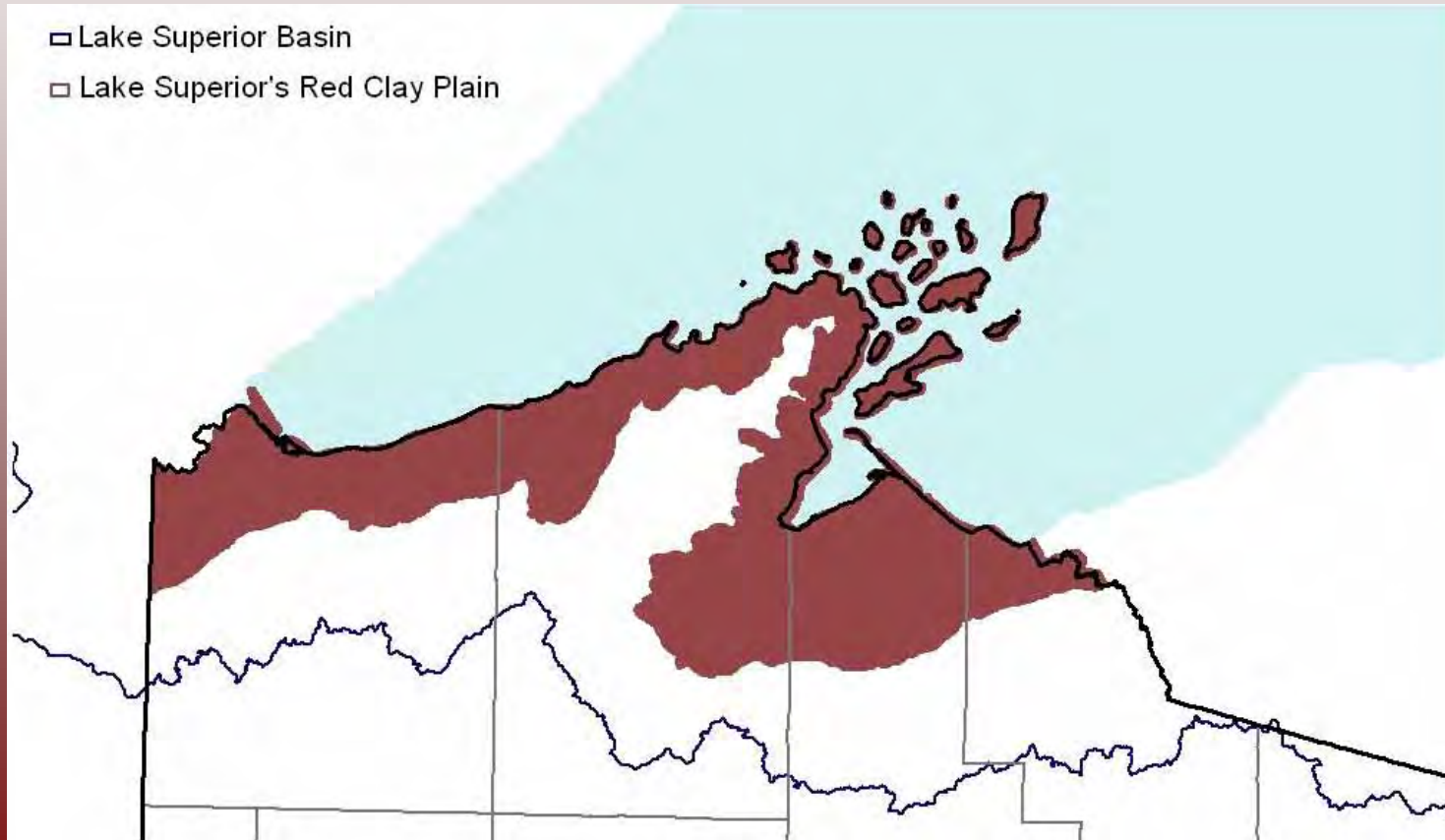


Managing Woodlands on Lake Superior's Red Clay Plain

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Photo credit: Robert A. Kleppin, The Nature Conservancy ©

Along Lake Superior's southern shore lies the **red clay plain** in Ashland, Bayfield, Douglas, and Iron counties.



The plain has layers of sand and clay that create unstable slopes and high levels of erosion.

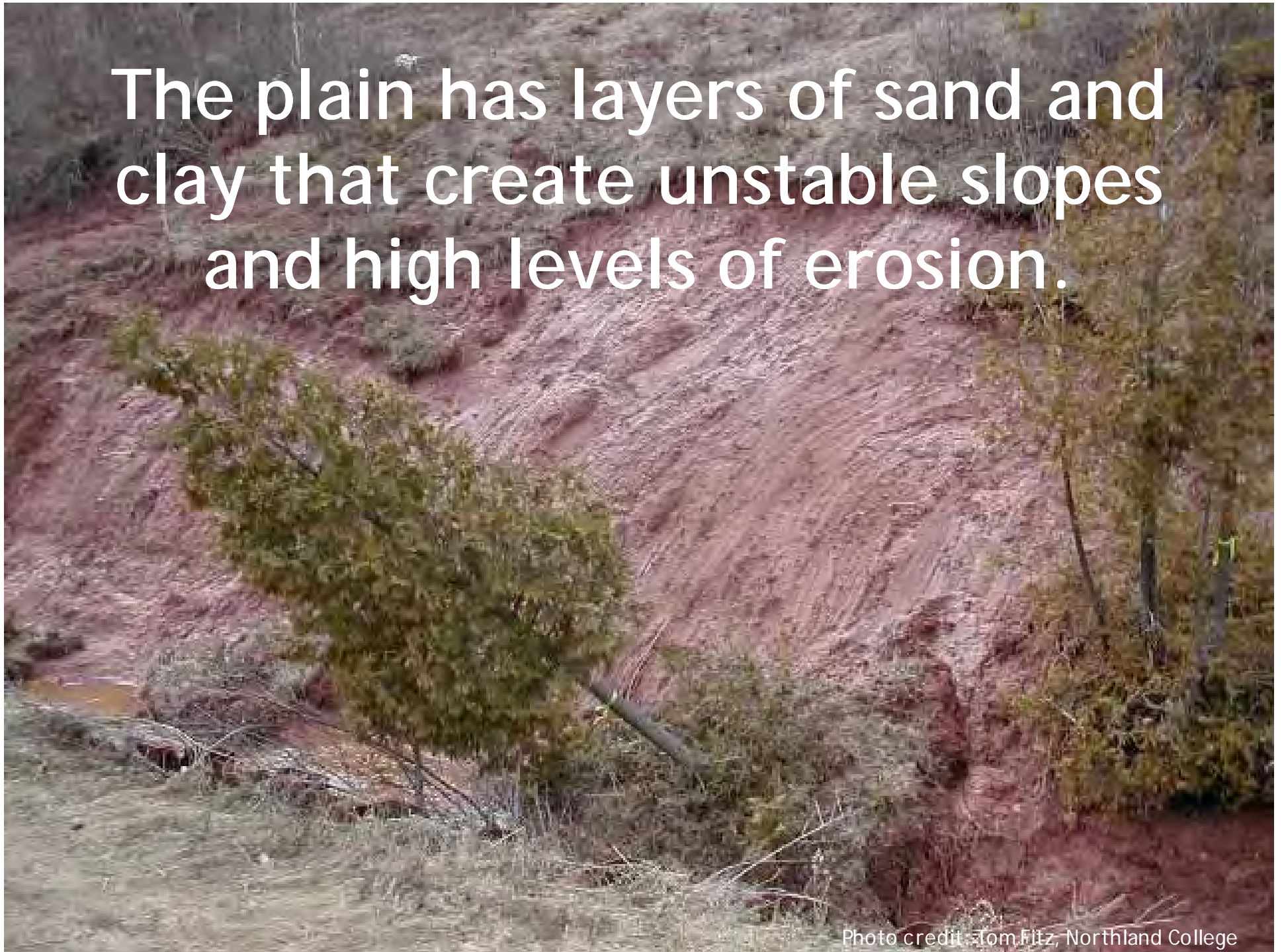


Photo credit: Tom Fitz, Northland College

**The high levels
of erosion
impact our
ability to
sustainably
manage forests.**

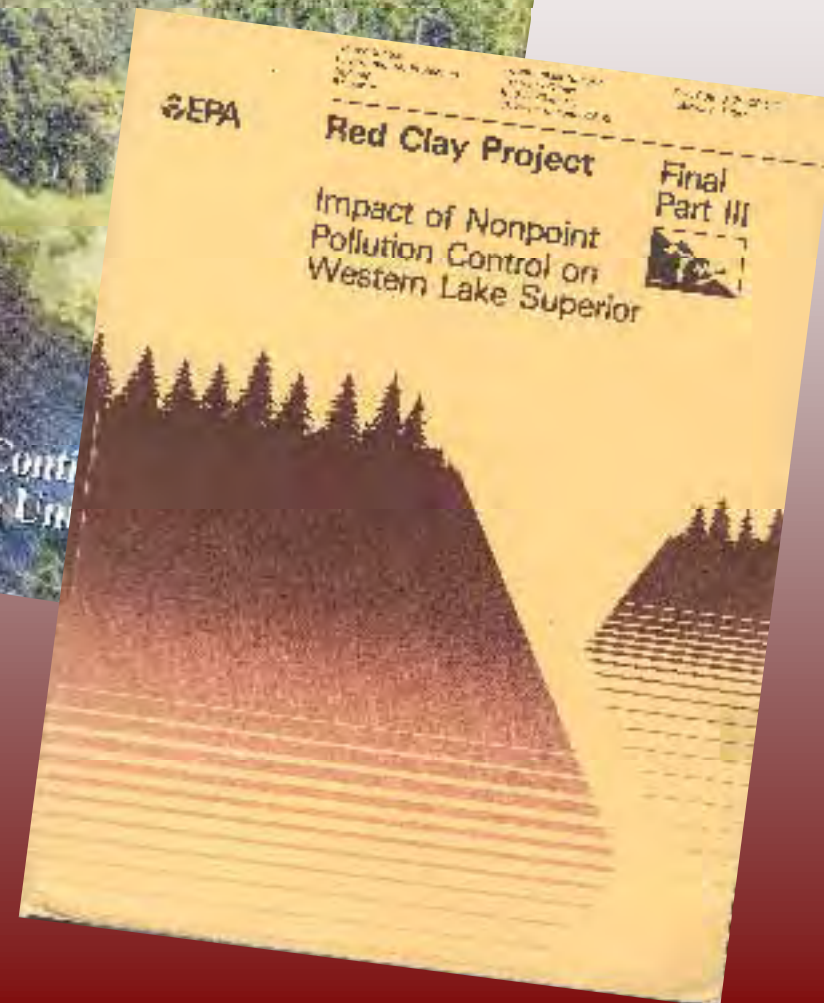
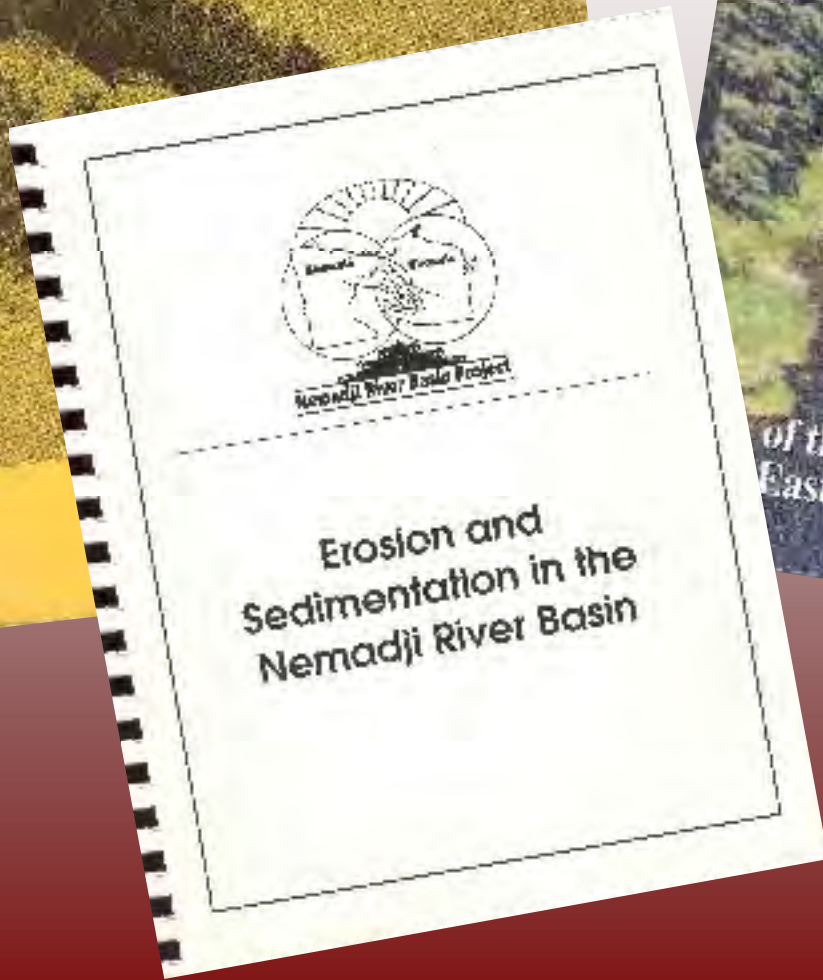
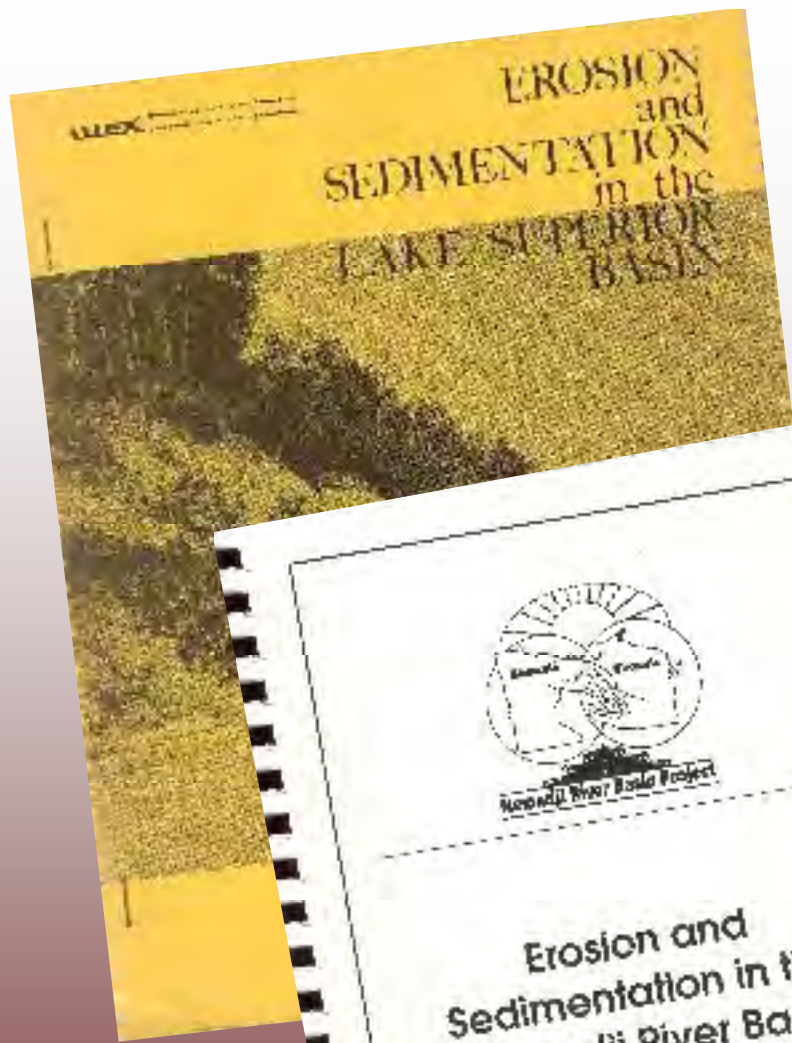


Bridging the Gap...

Research to Management



- More attention begins to be focused on this area
- Wisconsin's Forestry BMPs do not provide specific guidance
- A variety of research and reports have information about forest management on the red clay plain





Bridging the Gap...

Research to Management

- Through a Coastal Management Program Grant, we pulled together information from the existing resources
- Worked with a 5 member committee
- The result is a set of considerations for forestry practices on Wisconsin's Lake Superior Red Clay Plain

The Red Clay Plain



- Water runs over clay soils quickly and easily because they are relatively impermeable.



- Higher volumes and velocities of surface water flow overland.



- Sand erodes easily causing a number of water quality problems.

Impacts to Water Quality

- High volumes and velocities of water enter stream channel.
- Stream bed and banks collapse and wash downstream.
- Sand from bed and banks moves slowly downstream and covers gravel spawning beds and fills in deep holes used by fish.

Large logs are washed away.

The sediment and the flushing flows simplify the in-stream habitat!

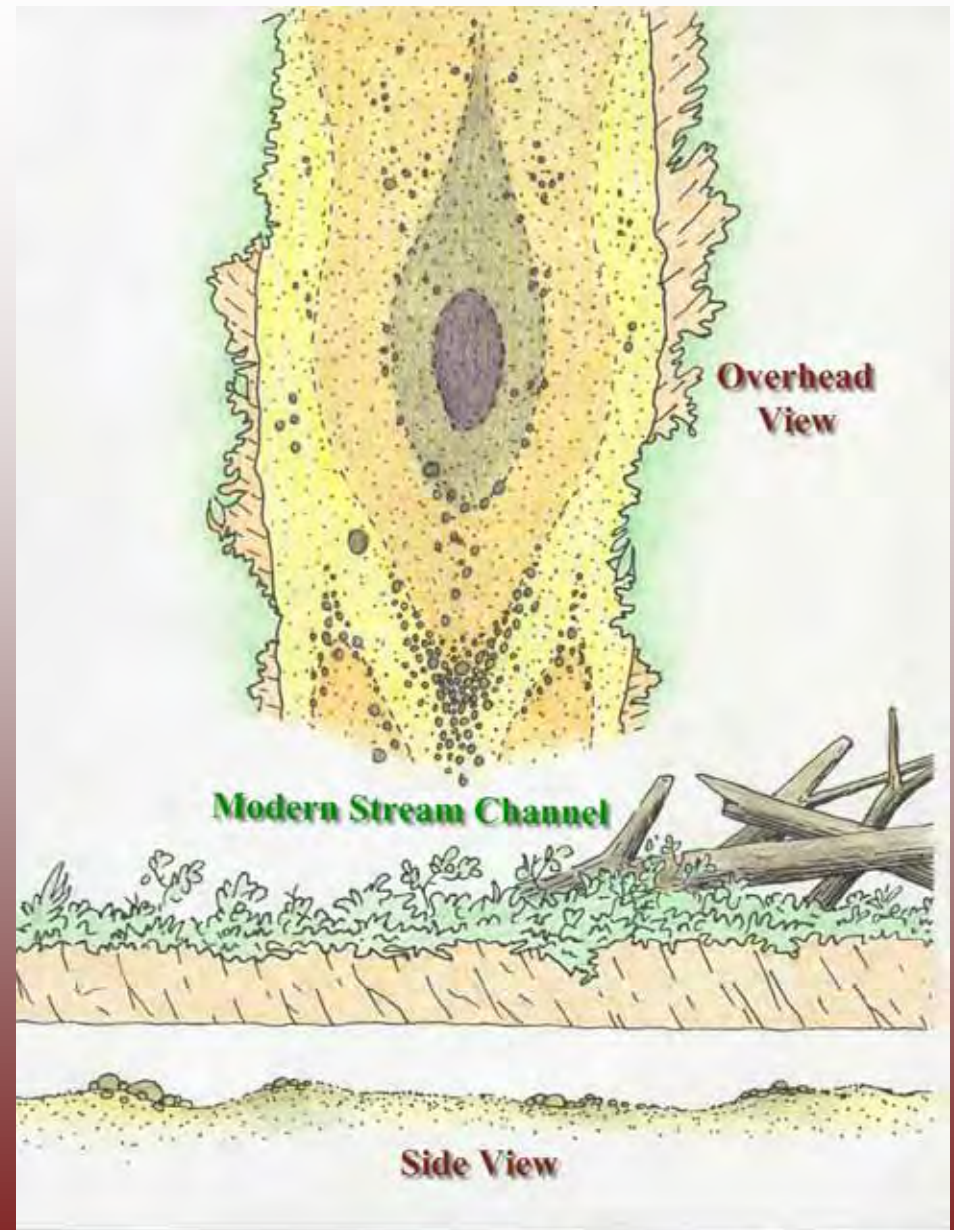




Photo credit: Dennis Pratt, DNR



Photo Credit: Jay Gallagher, DNR

Before,
streams
looked
more like
this...





Photo credit: Dennis Pratt, DNR

A photograph showing a road ditch overflowing with water. The water is turbulent and white with foam, indicating a high flow rate. The ditch is bordered by green grass on both sides. In the background, a paved road curves to the right, and a sign with a rainbow logo is visible. The surrounding area is a mix of green and yellow trees, suggesting an autumn setting. The overall scene illustrates the impact of road ditches and agricultural drainage on runoff.

Road ditches and agricultural drainage are major contributors to accelerated levels of runoff.

Photo Credit: Jay Gallagher



Photo Credit: FSC



Forest Management Recommendations

Slowing the Flow of Runoff!!

Vegetation Composition

- Manage for long-lived species.
- If appropriate to the site, evergreen species may provide more benefit.
- Consider reforesting open areas that used to be forested.

Timber Harvesting



Consider the amount of land that is in young forests (0-15 years old).

- Extensive amounts of land in young forests can increase the rate of water runoff.

Protecting Headwaters

- Water quality problems created in the uplands can worsen as they move downstream
- Timber harvesting must protect the integrity of headwater streams.

Slope and Streambank Stabilization

In some cases, it may be best to avoid conducting work on unstable steep slopes.

Photo credit: Carmen Wagner, DNR

Crossing Streams

- Use temporary stream crossing structures if appropriate.
- Plate-arch culverts have the least impact on a stream channel.
- Properly size and install culverts.

A group of about seven people are hiking away from the camera on a dirt path through a forest. The trees are in full autumn color, with shades of yellow, orange, and red. A dog is walking in the foreground on the right side of the path. The text "Thank you. Questions?" is overlaid in a semi-transparent box in the center of the image.

**Thank you.
Questions?**

Photo credit: Kristin Shy, DNR