

The destructive power of a flood is caused by the quantity and speed of the water. To mitigate the effects of flooding, we need to allow water to slow down and give it a chance to soak into the ground.

SLOW IT DOWN

Preserving the natural curves of the waterway is important for slowing water flows and preventing erosion.

By leaving room for the waterway to move naturally, rather than straightening or constraining it, you actually help reduce flood impacts.

Creek Curves



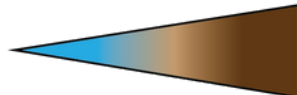
Meandering Straight

Water Velocity



Slow Fast

Erosion



Low High

SOAK IT UP

The natural environment can act as a sponge, reducing the amount of water entering the waterway. By allowing water to soak into the soil, we can reduce flooding.

Strategies to soak up water before it reaches the waterway include:

- Plant riparian buffers along waterways
- Rain gardens
- Rain barrels
- Permeable pavement
- Cover crops
- Wetland restoration
- Reforestation



THE DANGERS OF DREDGING

HOW STREAM MODIFICATIONS CAN LEAD TO LONG-TERM COSTS

The Power of Water

Increasing flood frequency across the US has led many communities to consider dredging waterways as a solution to reducing the severity of these events.

Data shows that dredging can actually exacerbate the impacts of flooding and degrade natural stream functions, leading to significant costs to landowners.



Contact the Kentucky Division of Water for more information

Dredging Increases Erosion

Dredging is a deepening and straightening of a waterway, allowing water to move at a higher volume and speed. This effect increases the farther downstream you go and your waterway increases in size.

High water speeds lead to bank and bottom scouring, increasing erosion rates in streams. While erosion is a natural process, the increased flows and destabilization of the creek-bed by dredging may actually speed the process up and lead to significant property damage.

In the long-run this damage can be costly, and ultimately worsen the effects of flooding events



Photo: Sustainable Streams LLC

Erosion is Expensive



\$1 Billion/Year
Estimated cost of repairs to state highway infrastructure damaged by erosion along streams, nationally.

Potential Impacts

Destroys aquatic habitat critical for fish and other important aquatic organisms

Leads to land loss from bank collapse and slumping

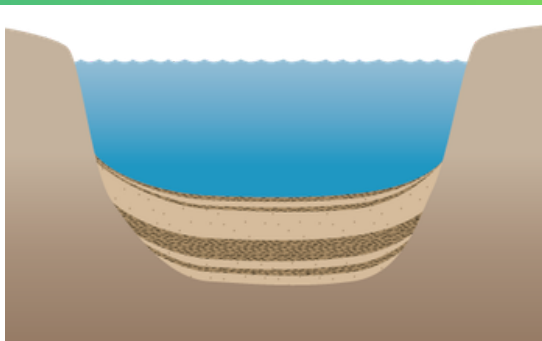
Causes damage to critical infrastructure like roads, bridges, water, sewer, gas and electric lines

Increases maintenance costs for structures clogged or damaged by debris dislodged in erosive events

Siltation and suspension of nutrients and chemicals from the streambed may cause issues with drinking water sources leading to increased water treatment costs and higher water bills for consumers

Long-Term Costs

Deepening a waterway does not halt the influx of sediment from upstream, meaning that the channel will constantly be filling in over time. In modified streams with high erosion rates, this process will be increased. Dredging as a strategy becomes a continual cost for communities without solving the problem.



Sediment build-up continues after dredging.

For More Information and References

