

How does stream speed affect water quality?

Streams and rivers have natural patterns of fast and slow, deep and shallow water, based on their contours and seasonal water flow.

Life in the water is adapted to these natural patterns.

Human activities can disrupt these patterns, harming water quality for humans and other living things.



What Can Changes in Speed and Amount Do?

Life in the Water. Many species need specific stream flows and conditions for life cycle stages, such as migration, reproduction and growth.

Temperature. Stream flow can change water temperature. Lower flow = warmer temperatures.

Erosion. More flow causes more erosion.

Oxygen. Usually, fast-moving streams have higher levels of dissolved oxygen.

Sediments. Fast water moves more sediment and keeps it suspended longer.

Pollution. Chemical pollution is less concentrated with more water.



Flashy is Not Natural

We call streams “flashy” when their flow changes quickly in a rainfall. In Michigan, a natural stream in an unpaved area will fill slowly after a rainfall. The water level will drop slowly as the water moves downstream.

A flashy creek receives a lot of water fast. This is due to rainwater running over pavements into pipes that move all of it quickly to the creek. The rain can't soak into the ground and slowly drain to the creek.

Flashy streams experience more erosion and carry more sediment to the river. It is harder for water creatures to survive in flashy creeks.



What Can We Do?

- Plant rain gardens.
- Plant native trees next to streams.
- Slow down rainwater by limiting impermeable surfaces.