

Reading A River...Characteristics & Flow

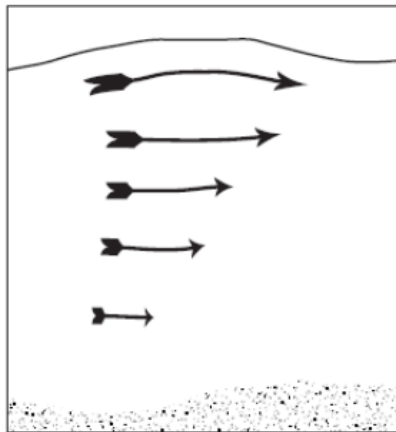
Some key characteristics of streams:

- *Water runs downhill.* Everything else follows from this basic fact.
- Depending on the *shape* of the streambed and its drop in elevation, this will determine the stream's changes in depth and speed.
- The *character* of the streambed will create areas that vary the speed and direction of the flow.
- Streambeds can consist of *bedrock, mud, clay, gravel, boulders and various other debris.*

Get To Know the Flow — Puzzling out Currents

Learning the basic rules about water flow will help you understand a stream. It will help you understand where food accumulates, where salmon and trout swim, and where they will lie quietly, using the least energy.

- While water tries to flow smoothly, the stream edge and bottom cause resistance. This makes water currents fastest near the surface, and away from the edges of the stream.
- Turns in a streambed, obstructions such as boulders or trees all help to break up the stream's currents. As they flow downstream, over time they will eventually merge. New obstacles almost always continue to break up this even flow into more swirling currents.



First rule: *Currents are likely to flow faster near the surface than near the bottom of a stream.*

Salmon Sense Currents

Atlantic salmon and trout are able to sense currents through sensing organs within their lateral line. Through most of its life in streams, Atlantic salmon are 'programmed' to face up-current, and hold their position.

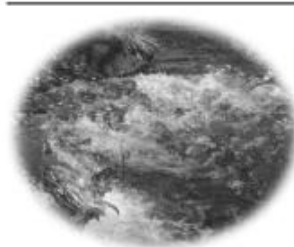
However, changes in the hormone balance while Atlantic salmon are becoming smolt change that behaviour to swimming down-current, especially during night-time.

Atlantic salmon also use their ability to sense current in order to find upwellings below rapids and waterfalls. These upwellings allow them to boost their speed as they power up over the obstacle on their migration back upstream as adults.

Clues to Look for in Streamside Exploration:

1. Direction of stream flow
2. Disturbance of the surface to give hints on water speed, stream bottom unevenness
3. Speed of stream flow in different stream areas, and where eddies and other areas of calm water exist
4. Stream curvature, that affects current speed
5. Riffle areas
6. Where is it likely that side streams or springs flow into the stretch of stream or river.
7. Imagine the ways in which higher water flows and levels, and lower water flows and levels, will impact the stream bottom. That may help in planning other trips to the stream.

Words to Help You Understand Currents



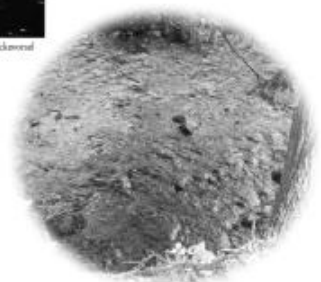
Eddy: A submerged boulder or log is the first place most anglers learn to look for fish. The obstruction slows down water and creates an eddy, a slow, swirling area on the downstream side.

Undercut: An area where the bank overhangs the water, is another good place to look for trout. Undercuts are usually formed on the outside of a curve, where fast moving water cuts the channel more deeply than it does on the inside. There is usually a nice, deep lie at the bottom of the channel.



Gilbert van Bockstaele

Pools are wide, deep sections of water. Salmon usually rest in the slow water at the bottom of the pool. They tend to feed at the head or tail of the pool, because there is a constriction there to funnel food items together.



Riffle: An area where friction breaks up a stretch of water. Riffles are usually caused by beds of small to medium sized boulders.