



**SMART**  
Angler's  
Notebook  
by Walt Dietz

## Are you a Stream Reader?

Do you ever wonder where certain animals live in a stream? How about where to catch a certain fish? Or which bait to use and where to collect it? Successful anglers and naturalists can answer these questions because they know how to read a stream.

## How water works

Water is simple. It flows because of gravity and tries to get downhill as fast as possible. How fast water moves depends on the land's slope, or steepness. Along the way, water's speed, or velocity, influences the shape of a stream channel. Moving water has force. It wears and carries away particles like clay, silt, sand, gravel, pebbles, rubble (or cobble) and boulders. The faster water moves, the bigger the things it can carry. It doesn't take much water velocity to pick up and carry a sand particle the size of a pinhead. But water has to move much faster to pick up and carry marble-sized gravel or golf ball-sized pebbles. And it has to move even faster to push rubble the size of softballs along the stream bottom. This kind of force is more than enough to push you off your feet in water above your knees!

Clay and silt particles are small and easy for water to carry. But they are also *cohesive* (they stick to each other). It takes a lot of force to erode them—about as much water velocity as it takes to move gravel and pebbles.

## Straight or meandering?

The shape of a channel is also influenced by the geology of the surrounding land. A headwater stream in the mountains will probably have a straight stream channel. The water flows fast and clean. The bottom is usually covered with sand, gravel or boulders. This is where you will find all of the trout's food—daces hiding under the boulders, stonefly nymphs clinging to the rocks and caddisfly larvae with their cases made of large sand grains. Think "wild brook trout." They are adapted to the fast water in these small headwater streams. Try baitfishing with a small worm, blacknose dace or stonefly nymph. You could also use a mayfly nymph, caddisfly larva or streamer if you prefer flyfishing.

The stream conditions are much different when the slope of the land becomes less steep. Water is in less of a hurry and takes its time down the stream channel. Sediment typically falls out of this slow-moving water and stays on the stream bottom. Stream in a flat floodplain may have many *meanders*, or bends. Meanders make a stream longer and increase the amount of habitat. They also increase the quality of the habitat. These benefits help your fishing. Here's how:

Water erodes stream banks. It undercuts the outside bank because it flows faster on the outside bend. You'll often see tree roots exposed beneath these *undercut banks*. It's the perfect habitat for aquatic insects, forage fish, panfish, trout and bass.

The water on the inside bend flows slower. Sediment and other materials carried by the flowing water are deposited here. Where to fish in these spots should be easy to figure out. Stand on the inside bank and make the perfect cast toward the root tangles under the opposite bank. Which bait should you use? Think about the critters that live under that bank! Try drifting a small shiner, dragonfly nymph or crayfish—live bait or imitation.

Worms also work great.



## Riffles, runs, pools

A stream reader should also focus on *riffles*, *runs* and *pools*. Each one provides a different habitat. A riffle is shallow with lots of rocks that break the surface. These rocks provide great habitat for algae, aquatic insects and small fish. Larger fish like trout and bass often move into the riffles to search for dinner. Baitcasters should try a worm or minnow. Avoid using sinkers so your offering drifts naturally. Spincasters can try small plugs and spinners. They work best if you cast upstream and fish them down through the riffles in the direction of the waiting fish (fish will be facing

upstream). Fly casters may want to try mayfly nymphs, stonefly nymphs or caddisfly larvae.

Runs are deep and fast. Rocks do not break the surface, although runs may be turbulent. Bass and trout rest along the edges of a run and dart into the current when food passes by. A catfish might even be waiting at the tail end of a run for that perfect bite to eat. Any live or supermarket bait will work. Try worms, minnows, aquatic insects, chicken liver, dough balls, shrimp or corn. Just make sure you use enough weight to keep your bait down, where the fish are waiting. Fly casters should also use enough weight to keep their nymphs or wet flies deep enough.

Pools are wide, deep sections that have a slow current. They often occur after riffles and runs. Pools make great places where fish hide, rest and capture food from the surface. Pools have lots of *woody debris* and *detritus* (decaying leaves, sticks and animal material). Detritus is an important part of the food chain. Some aquatic insects eat detritus. This means that where there are aquatic insects, there's fish!

Woody debris is important because it provides places where fish and other critters hide. Try baitfishing a minnow or crayfish along the edge of woody debris. Small plugs or spinners work well when fished to imitate an injured minnow. Pools are also great places for casting a dry fly. Wait to see a rising trout. Then carefully cast just above it. Allow the fly to drift slowly toward the strike zone and...*bam!*

Now you are an expert Stream Reader. Well, not exactly. There is much more to it than just this information, but those skills will come with experience. You have the basics, so take a step back the next time you are fishing or participating in that stream study with your school class and use this information to understand how a stream flows.

