

*An accomplished angler/biologist looks at the effects of water temperature on trout, and how that temperature should modify your tactics*

# Take a Temperature for Trout

ED VAN PUT

**T**HE CATSKILLS ARE MY chosen home. I've turned down better-paying jobs in other places just to stay here. How much that has to do with my love for trout fishing may be judged by the fact that in the last ten years I've spent an average of a hundred and forty days a year fishing the Catskill streams. When not fishing, I work as a technician in fisheries management for the New York State Department of Environmental Conservation, and I'm one of those fortunate persons who spends most of his time in trout streams.

Through my experience as a fisheries technician and as an angler, I've learned the importance of water temperature as a factor in understanding trout behavior. From my observations, either many fly fishermen don't fully understand the role that water temperature may play in angling success or they simply aren't aware of its im-

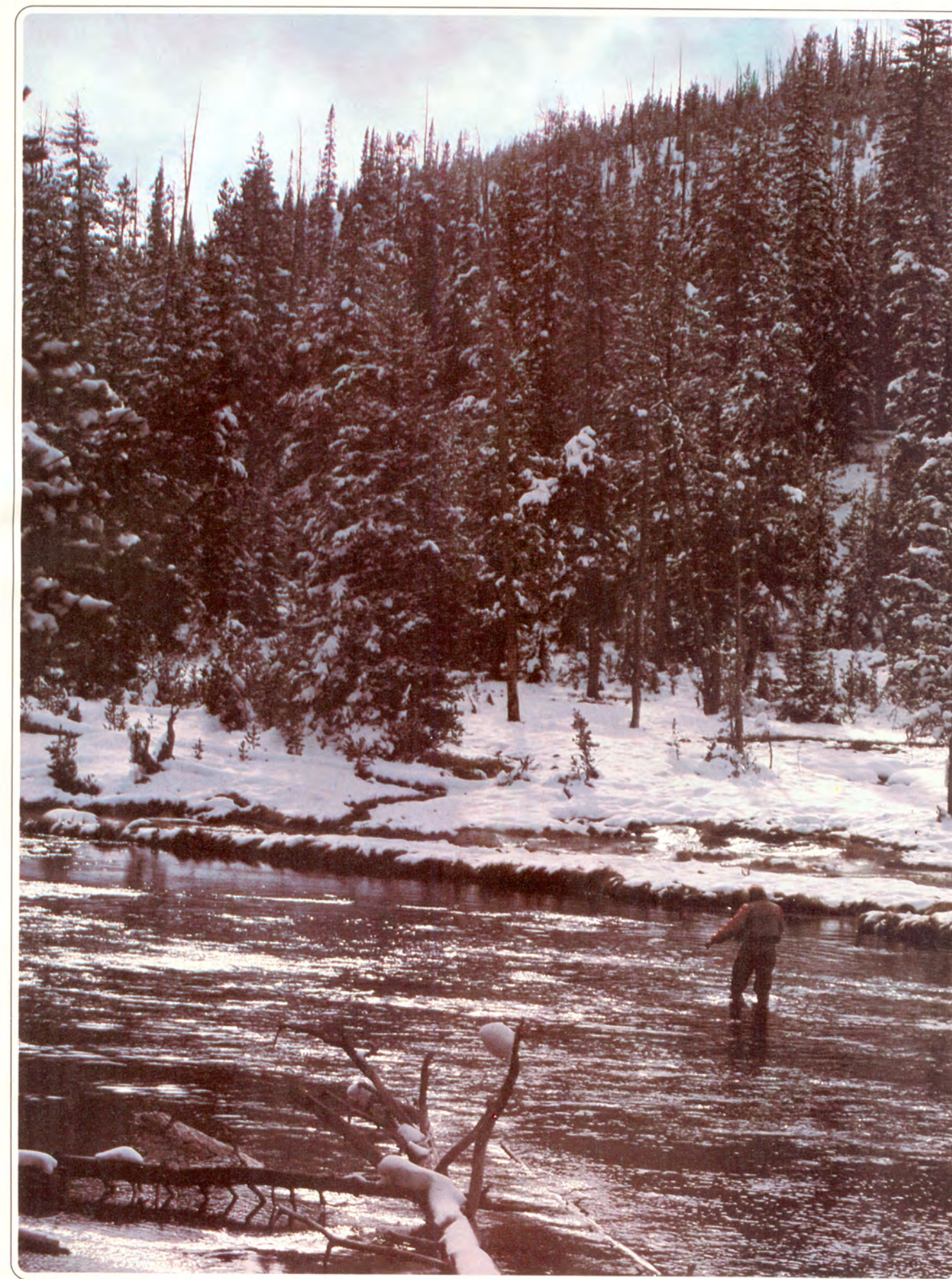
portance. Understanding the effect of water temperature on trout is vitally important in order to fully understand the behavior of the fish — not only during late-season periods of low, warm water, but throughout the course of the season, beginning even before the snowmelt runs off in April.

**TROUT ARE COLD-BLOODED** animals; their body temperature changes with the temperature of the water in which they are living. Water temperatures directly affect their growth and survival.

Many of our trout rivers are subject to extremes in temperature, from a low of 33 degrees Fahrenheit to a high at times in the mid 80's. Even such famous Catskill rivers as the Beaverkill, Esopus, Neversink and Willowemoc

---

*There's apt to be a substantial variation in stream temperature during any given day, even during the early season, and knowing when that occurs may help your fishing.*



are not immune in some years to an 80-degree Fahrenheit temperature for short periods.

Fortunately, however, temperature changes in most of our rivers do not occur rapidly. Trout survival often depends on the *rate* of temperature change, which affects the trout's ability to become acclimatized, as well as the strain and size of the fish. Trout can survive temperatures in the mid 80's, but it is generally accepted among biologists that they cannot survive them for very long periods of time. They can live at temperatures above 68 degrees only if the water is well saturated with oxygen. Temperature tolerance decreases as the oxygen content of the water decreases.

Brook trout are less tolerant of high water temperatures than browns or rainbows. The lethal limit for brookies is generally accepted to be 77 degrees, while the lethal limit for browns is usually placed at 84 degrees to 86 degrees. For rainbows it is slightly higher.

Rapid growth for all trout is generally concluded to be best achieved between 45 degrees and 66 degrees. Trout do, however, feed both above and below these temperatures.

My experiences with temperatures below 45 degrees leads me to believe that the water is never too cold to catch trout on flies. I have had exceptionally good trout fishing in early April when stream temperatures are often between 33 degrees and 45 degrees. Nymphs fished on the bottom with split-shot will produce trout, especially when flows are high and the river is discolored by melting snow or rain. If you fish with a short line, the shot gets your fly to the bottom and aids in fishing the nymph slowly. Although trout may actually gorge themselves at these temperatures, they seem unwilling to move or pursue flies, and perhaps this is the reason wet flies do not produce as well as nymphs when the water temperature is below 45 degrees.

On bright, sunny days before the snow runoff, trout can be found rising in the slower pool areas to midges. I have seen good numbers of fish rising while snow covered the ground and cake-ice was piled along the stream bank and the water temperature was 33 degrees. At these times a size 22 dark fly fished on a 6x or 7x tippet has produced good early-season dry-fly fishing for me. I have seen trout midging on the Beavercill and Willowemoc every month of the year except February.

On days when air and water temperatures hover around the freezing point, the limiting factor is more often how long a person can stand the discomfort of cold hands and feet, not whether trout can be caught.

Water temperature changes little on overcast or rainy days, while clear, sunny days will often raise the temperature as much as 10 degrees. The highest increase I ever recorded in a free-flowing river was 17 degrees between the hours of 7 A.M. and 4 P.M. Generally, the highest water temperature occurs at 4 P.M. regardless of the time of year. It usually drops one or two degrees by 7 P.M. and continues to drop with the lowest reading normally occurring near sunrise.

The important aspects of water temperature for the early-season angler to keep in mind are that low temperature doesn't prohibit feeding by trout and that the higher temperature, which may stimulate more *active*

feeding (or insect activity), will occur at about 4 P.M. and it will diminish only one or two degrees by 7 P.M. Watch for a spur to trout and insect activity on a sunny day.

Flow rather than temperature may be a more important factor in determining early-season fishing strategy — a deep nymph in fast flow after runoff or a small dry fly in slow flow before runoff. In any case, don't be misled by the erroneous belief that cold water prevents trout from feeding.

DURING THE MID- AND LATE-SEASON periods, when you may often be fishing on the above side of the "ideal" 45-degree to 66-degree temperature range, the constant use of a thermometer is required. Fishing success — or lack of it — will often be determined by a change of only a few degrees.

I can remember when very few of us fished in mid-summer when the streams became warm and low. Fish



Trout do feed when the water's cold; here's proof.  
Photos by Joseph Royer.

were just too difficult to catch. But now that we're using small flies and fine leaders, summer catches can be pretty good. Still, the key to success really isn't fine tackle, it's a thermometer.

How necessary a thermometer can be surprises many summer anglers. I've seen a lot who didn't carry thermometers at all, or if they did, they didn't really use them.

One August afternoon I stopped my car in the middle of the iron bridge at Hazel and looked up the Willowemoc River. There were more stones exposed than I had seen in years. The river appeared shrunken and parched; we needed rain, lots of it. Reduced in flow, this stretch of the stream now showed a lot of sun-baked gravel.

With the river so low, the big boulder upstream of the bridge now appeared to be much larger than I had thought. Often completely submerged in spring flows, it was the one we used as an indicator for how high or low the river was. Also, it was the one that usually held behind it the best trout in the pool.

Just downstream of the boulder was a man fishing dry flies. He fished the water carefully, covering every area that could possibly hold a trout — the pockets, the riffle, the undercut bank. Watching him cast I assumed he didn't know he was wasting his time. There were no trout in the river, at least not where he was fishing. He apparently didn't know the fish were all in spring holes or concen-



Photo by Gladstone Studios

## No-Kill Net Results

LARRY SOLOMON

IN MY EARLY YEARS OF TROUT FISHING I scooped fish from the water with a net so they would not escape my creel. Bringing home the evidence had some importance in those days.

When I became a fly fisherman, however, I began to view trout as a limited resource, and soon I was releasing the fish I caught. And with my conversion to no-kill fishing, I hung up my net. "Why bother with one if you're going to release your fish," I often told my angling companions. "You can land and release fish by hand more quickly and look more professional in the bargain." My concerns for speed in the release and for my image on the stream unfortunately overlooked the welfare of the trout, and after landing several fish by hand and returning them to the water so weak that they were swept downstream at the mercy of the current, I realized that the net is as important to the no-kill fisherman as the barbless hook.

Most fish can be brought in by hand in average water conditions, but to do so often means fighting the fish to exhaustion. I once hooked a large trout in heavy water, and after a strenuous fight I maneuvered the fish within reach. I braced myself against the current, took aim and grabbed, but the trout easily avoided my grasp and dashed away. After several more unsuccessful attempts, the fish was exhausted. I finally skittered it helplessly across the water. If I had used a net, however, I could have captured the trout on my first attempt and released a relatively lively fish.

A net helps the angler hold a trout while disengaging the fly, too. It is impossible to grasp a slimy, active trout with your bare hand without squeezing it much more than you should, and I have seen many well-meaning fishermen

lock a death grip on a fish while trying to remove a hook. A netted trout, however, can be held in the water, where it is less apt to struggle. Tuck your rod under your arm, gently grasp net and fish underwater and carefully work the fly out. Barbless hooks, of course, make the operation easier and less traumatic for the trout.

Using a net requires little talent, but all too often anglers refuse to maneuver correctly so that the net can be employed quickly. Last year while fishing on the Beavercill I passed an angler playing what was obviously a big fish. I nodded and continued on my way upstream to check out a favorite pool, but finding the water higher than I liked, I returned downstream. The trip took close to 20 minutes, and when I met that fortunate fisherman again, I was surprised to see him in the same spot fighting the same fish. He yelled to me that he couldn't bring the fish back upstream, and I asked him — a bit annoyed by then — if I could show him the proper way to land his catch. When he agreed, I took his rod and had his 17-inch trout in my net in a shade over a minute.

I did nothing spectacular to land the fish; I just used common sense. While holding the trout in position, I walked downstream and reeled in line. When I came alongside the fish, I turned it and maneuvered downstream so that I was below the fish. With the help of the current I was able to bring the fish easily into my net. And you should use the same tactic. Just remember that when you get below the trout, don't stab at the fish with the net, but rather hold the net in the water and ease the fish over it; then lift. It is a greater feat to land a trout quickly and in good condition than it is to fight it until exhaustion — and a net can be your best tool.

trated off tributary mouths where water temperatures were cool enough to provide them with relief from the stress of the 78-degree river temperature. Over the past few days air temperatures had increased rapidly and the water temperatures had followed. But he'd come to fish, and by golly, he *was* fishing—right where he had probably caught trout in May or June.

As I watched, I wondered how long he would fish. Would he blame it on the leader and reduce tippet size? Go to smaller flies? Switch to a nymph? Would he perhaps try a bucktail and put it behind the giant boulder? None of it would be of any use; there were no trout there. He should have taken the water temperature; in August you must take water temperatures.

Because of my interest in fisheries science and trout fishing, I have kept accurate daily records of my fishing experiences. For years I have recorded water temperature as well as catch, type of flies hatching and time of day. I measure all large trout and, at times, take scale samples for aging and determining whether the fish was of wild or hatchery origin. On the Delaware River, I measure all trout and have taken scale samples to study growth rates of the river's browns and rainbows.

The growth rates of trout depend to a large extent on temperature. Digestion proceeds very slowly at low temperatures, and as temperatures rise, digestive enzymes work more rapidly.

On our "crowded Eastern waters," I manage to catch an average of 67 trout each season over 16 inches, of which an average of 20 are over 18 inches. My secret? Fish the more inaccessible areas of the larger, lower river sections, kill no trout in the places I fish (I have often recaught trout I have marked, sometimes as soon as the next day), and develop a thorough knowledge of water temperatures and how they relate to trout feeding activity, particularly temperatures of 66 degrees or higher.

On most rivers, larger trout are found in the lower river environments, which may even be sections that are considered to be marginal trout waters, or areas that trout share with other species. Food supplies there are more abundant and varied than in the upstream sections and, although there is more competition from other fish, year-round water temperatures favor the trout.

On the rivers I fish, I have learned what methods of fly-fishing work best at different water temperatures. My favorite water temperature at which to fish is 66 degrees. At that temperature, even without a hatch, I can usually move fish. They may come to a dry, a nymph, or they may be coaxed into chasing a wet fly or streamer. When there is a hatch, the 66-degree temperature can produce the type of day we all remember, because it is the temperature at which trout feed most avidly.

I find that trout are not as active between 68 degrees and 69 degrees unless there is some fly activity. At 70 degrees to 72 degrees a hatch or some flies on the water is practically a must. It is more difficult to tease trout into coming up for a dry fly by "fishing the water" at these temperatures, or to take them on nymphs or wet flies. Temperatures between 72 degrees and 74 degrees

definitely require a hatch or spinner fall to produce good fishing. I have done well at these temperatures, particularly in the evenings on spinner falls, but only when there were flies on the surface. Although I have caught brown trout as well as rainbows between 72 degrees and 74 degrees, it seems to be the limit for good brown-trout feeding activity. Rainbows, on the other hand, still feed well at those temperatures.

I have caught rainbows in water as warm as 80 degrees, but I no longer fish water that is above 75 degrees. Returning trout caught at temperatures above 80 degrees may be returning a dead or dying fish—the activity of struggling on the end of a line in warm water is likely to be too much for the fish.

When the water temperature rises above 75 degrees, trout will usually concentrate in spring holes or off tributary mouths. They do so because they are in distress, either from insufficient oxygen or high water temperatures. Trout are very vulnerable at these times, and I know of no quicker way to deplete a stream or river of its resources than by angling for them when this condition occurs. It offers no real sport—it's just taking advantage of their misery. For every one that is returned and dies, many more are caught and kept at this time of great vulnerability.

I have seen as many as 200 trout concentrated off a cooler tributary dwindle to less than 50 in a few days. The area around the tributary mouth was littered with the intestines and heads of many large fish, the majority between 14 and 20 inches—mostly four- and five-year-old trout—that were eliminated in less than a week. By anglers of questionable sportsmanship? I really don't know what term to use, because the majority of people I see fishing tributary mouths I do not see at other times on the rivers. They show up only when the trout are easy targets, like jackals gathering to take advantage of a stricken prey.

These trout really need protection. State agencies close forests when they become dry and the danger of fire threatens the resource. Our rivers and streams should receive the same consideration and protection for those short, hot periods when their resources are in similar danger.

IN SUMMER FISHING you will find temperatures that are near the limit of trout-feeding activity. Take water temperatures and take them at a reasonable distance from the edge of the stream. It is not necessary to get in the middle of the stream or to get the thermometer on the bottom, just make sure you are in moving water. Protect the thermometer from direct sun by shading the area with your body and leave it in the water when taking the reading.

Remember, as is true throughout the season, the warmest temperature will usually be about 4 P.M., and the river will often be one or two degrees cooler at 7 P.M. and dropping. That one- or two-degree change, and knowing that it should occur, may be the key to turning your summer trip to the stream into a successful one. And knowing that the warmest water temperature will occur at 4 P.M. may help your chances of early-season success.

# FLY FISHERMAN

