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## To Study Russia's Rainbow Trout, Catch Them First

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C. J. Chivers/The New York Times

*A 19.23-pound male steelhead, with a slightly hooked jaw, measured just under three feet long.*

UTKHOLOK RIVER BIOLOGICAL STATION, Russia —

The flat-bottomed skiff slid through the Utkholok's nearly circular turns, racing inside a slot the river had cut into the tundra.

Dr. Jack Stanford eased off the throttle. The boat glided onto a gravel bar. "Look," he said, pointing to the far bank, where the current swirled against undercut peat. "Classic steelhead water."

Stanford lifted his two-handed Spey rod and stepped into the stream, stripping line as he went.

We had come to western Kamchatka in the Russian wilderness, five days and two helicopter trips from Moscow, to tour watersheds the regional government plans to designate as salmon reserves. But now we were to commit a little science.

This science had occupied a few hours each day on another river, the Kol, a two-hour helicopter ride to the south.

There, on a flow that breaks into side channels that rush through stands of alder and willow, Stanford, an ecologist who directs the Flathead Lake Biological Station in Montana, had introduced me to Sasha Maltsev, a doctoral candidate at Moscow State University.

Maltsev is part of an ambitious study of Russia's rainbow trout, and he needed fish for his sample. His instructions were simple. We had to catch them.

This was tough duty, catching wild rainbow trout — hard-striking, fast-running, high-jumping, brilliantly colored rainbow trout. But we were up to it if science called.

The Kol rainbows had struck on fly rods and spinning gear, slamming streamers and spinners before bursting downstream.

One afternoon, a group of us caught 16, a task complicated by the sea-run char and four- to eight-pound coho salmon crowding the river. These fish often attacked lures before the trout could.

Still, we managed to catch some of what Maltsev sought. As we subdued them in the vodka-clear shallows, Maltsev and his project supervisor, Dr. Kirill Kuzishchin, would rush forward. They measured each fish, scraped off scale samples, clipped a piece of fin for DNA analysis, tagged the fish and let them go.

Russian rainbow trout are really no different from the American variety, except Russian scientists are more attuned to their richly varied ecological niches and life choices, while most Americans have caught too many stocked rainbow trout (or rubber trout) hailing from too many hatcheries.

In Kamchatka, wild trout (or real trout) are abundant, fierce and incredibly adaptable, their genes undiluted by hatcheries.

After years of studying these fish, Russian biologists have established a surprising fact. A river's stock of resident rainbow trout and its stock of sea-run steelheads are not just different forms of the same species. They are members of the same population.

In 2004, Maltsev and other scientists observed them spawning together, small-river trout on redds with heavy, sea-run fish. DNA analysis confirms rainbow trout can form one complex population, from mountain headwaters to the high seas.

From each batch of fish of identical parentage, some trout will opt to live only in a freshwater river, others will choose a brackish estuary, and still others will journey to the open North Pacific for one to five years.

In the Kol, a majority of the population remain as residents. Feeding on salmon carcasses, salmon eggs and juvenile salmon that fill the river, they have ample food and side-channel habitats beneath a canopy of trees. Most of these fish, if they survive, become adults in the 18- to 24-inch range; a few go to sea and come back much larger.

Now we were on the Utkholok, where fish live differently. This river cuts its course through bare tundra, with few side channels or forests for cover. Here, with less forage and fewer hiding places, the studies show, more rainbows slip into the sea, where they become large and powerful oceanic hunters.

Each fall some of them return, a run of Kamchatka's platinum-sided thugs.

Maltsev's peers on the Utkholok needed to sample these returning fish, too. Being civic minded, Stanford and I volunteered.

As rain pelted our parkas near the undercut bank, we each caught a fish in the 28- to 30-inch range, weighing about 10 pounds. The data and tissue were collected, the tags inserted and the fish set free.

Then I missed another. That fish slashed at a lure with a boil the width of a Hula-Hoop. Now that is a trout, I thought.

Minutes later a fish, perhaps the same fish, struck solidly. My nine-foot graphite rod bent to the handle and laid almost flat as the fish ran to the far bank. The reel whirred. The fish began to jump, making white splashes in the rain. Its tail looked like a gray dustpan. This steelhead was big.

I went downstream to gain line. After several minutes I eased the chrome slab into a few inches of water, amazed. Stanford and Audrey Thompson, one of his students from Montana, began to take samples and data.

The fish, a male with a slightly hooked jaw, measured just under three feet long and had nearly a 20-inch girth. According to a formula, it weighed 19.23 pounds.

That steelhead was probably the largest fully wild trout I will ever see. Never mind that. We let it go. It is now known as Tag No. 2808, part of a study that, fish by fish, can tell us what trout really are.