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### **A Bug's new life**

By Lance Frazier

Transplant aims to solve case of missing salmonfly

**BLACKSMITH FORK RIVER** -- It may be a case for Mulder and Scully: What happened to the salmonflies on the Logan River?

The giant salmonflies, beloved by fly fishers and once common on the Logan River, for some reason disappeared in the 1960s. A few miles away, they are still common on the Blacksmith Fork River, which is a tributary of the Logan. Mark Vinson, head of the Utah State University/ Bureau of Land Management BugLab, recently launched an X Files-style investigation into the matter that has yet to conclude to his satisfaction.



So far he hasn't turned up data to support any of his working theories -- the die-off was caused by a chemical spill, or by herbicides used to eradicate sagebrush in the '60s, or by the snow- and ice-melting chemicals used on Highway 89, or by the spray used to kill roadside weeds in the summer. The fact that salmonflies have never recovered, Vinson says, suggests a continual source of pollution or something else that prevents their re-establishment. Salmonflies are very sensitive to herbicides and pesticides, but if that's the cause, he wonders, why aren't there salmonflies in the tributaries?

"The problem with both of these ideas is that we do not find any salmonflies in tributary streams to the Logan that are not adjacent to the highway, such as the Right Hand Fork of the Logan and Temple Fork," Vinson noted. "If these chemicals were killing them in the Logan, I would think there would still be populations in these tributaries.

"Most bugs travel really well, so it doesn't make sense that they wouldn't recolonize," added Vinson, clearly irked by the unscientific nature of the non-recovery. "We've never found any (culprit), and we don't know why. It drives us nuts."

In 1927, entomologist James Needham studied the area and wrote that "Pteronarcys californica (one of two salmonfly types in the area, the other being Pteronarcella badia) abounds in the clear waters of Logan River below 6,000 feet (elevation)." Although reports of salmonflies on the Logan still filter in occasionally, the most recent confirmed sighting was in 1966. Some observers attribute the discrepancy between the two rivers to

differences in slope, runoff conditions or shade (the Logan receives more), but none of that accounts for the fact that the insects were once prolific on the Logan and now seem to be extinct.

According to local fly fisher Tim King, the two rivers have "the same kind of pools and riffles" that provide homes to salmonflies, also called "rock rollers." And other types of stoneflies -- renowned as good indicators of water quality -- do appear on the Logan, making it all the more peculiar that one and only one bug would vanish.

"There is no record of any Rotenoning or poisoning on the Logan River," said Vinson, who began delving into the case of the missing salmonflies about 10 years ago. "It's a mystery."

A few months ago Vinson decided to put aside the "why" and attempt to resolve the issue by transferring salmonflies from the Blacksmith Fork to the Logan River, in what is probably the first-ever insect transplant. Last Saturday, with the blessing of the Division of Wildlife Resources, Vinson relocated 1,000-plus salmonflies that were captured by a phalanx of 30 Cache Anglers volunteers in waders. Over the next four years, seven more releases are planned, and anglers and scientists alike will be monitoring the results with great interest.

Vinson acknowledged that he has no idea how the insects will fare, although in a 2001 experiment several salmonflies survived for months in special traps placed in the Logan River. Fly fishers are keen on the project because salmonflies are some of the biggest bugs around and are very popular with trout. During the spring salmonfly hatch, anglers march in lockstep up the Blacksmith Fork River, pursuing the hatching insects and the fish that eagerly devour them.

"We want to create a large enough population in one area (on the Logan) that they can reproduce and move upriver," said Matt Klingler, president of Cache Anglers, noting that the volunteers collected bugs of all age classes to transplant. "Our goal is to repopulate the Logan River."

The salmonflies could have an impact on the Logan as a major food source -- Vinson ranked them "pretty high because they're so abundant and so big" -- which is probably why anglers from as far away as Salt Lake City drove up to participate in the project. But the long-distance award

went to Paul Wright of Hudson, Wisc., a member of Trout Unlimited who happened to be visiting his son in Logan and wanted to be a part of the first insect relocation project he had ever heard of.

"As long as I was out here, I wanted to take this in," Wright said.

Kurt Finlayson of Wellsville, an avid angler and photographer, was also drawn by the novelty of the project.

"I've never heard of anybody doing this," Finlayson said. "It's one of those things where you think, 'Why hasn't anybody done this before?'"

Phase II will occur in April, when large salmonflies start to emerge on the Blacksmith Fork. Vinson said that for every large bug taken to the Logan, "there should be 100 in the river." His best guess is that it will take two or three years to develop a self-sustaining population.

In the meantime, his "quest" will continue. Vinson is particularly confounded that salmonflies haven't moved upstream into the Logan from the confluence of the two rivers.

"Nymphs should be drifting down into the Logan River and I would think that some of the adults would have flown up the Logan River during this time," Vinson said. "This lends credence to a one-time, broadscale kill and because they are such poor flyers they have not yet made it over to the Logan. It does truly baffle me though why there were so abundant and why they are not there now."

As Mulder might say, the truth is out there.