

# More than a viral sensation, the Salmon Cannon could bring the species back to the Upper Columbia after 90 years

[Eli Francovich](#) Aug. 16, 2019 at 8:06 am Updated Aug. 19, 2019 at 1:15 pm

By

*The Spokesman-Review*

Last weekend, a 2014 video of a salmon being shot through a thin, flexible tube went viral.

Mememes appeared imagining what the fish were thinking as they passed through the Salmon Cannon, as the salmon-propelling tube is known. On "The Late Show," Stephen Colbert wondered if the tube's inventors considered naming the device the Bass Blaster. The New Yorker wrote, non-ironically, about the "nihilistic euphoria of the fish tube."

But, as internet hot flashes do, the excitement died down, leaving a far more interesting — and important — story behind.

The Salmon Cannon, born in the apple fields of Eastern Washington, is a key component of the Colville Confederated Tribes' plans to reintroduce salmon to the Upper Columbia River and, eventually, the Spokane River.

This system helps native fish pass over dams in seconds rather than day  
[pic.twitter.com/aAmhHArjPg](https://pic.twitter.com/aAmhHArjPg)

— Dr. Kash Sirinanda (@kashthefuturist) [August 8, 2019](#)

The principle is simple: The tube, which is a proprietary plastic mix and very smooth on the inside, molds to the body of each fish that swims into it. Misters, placed on the outside of the tube, further lubricate the interior with water and allow the fish to breathe. Then, an air blower pressurizes the space from below, pushing the salmon up at speeds that can reach 20 mph, much like a pneumatic bank tube.

“From the fish’s perspective, it’s swim in, slide and glide,” said Vincent Bryan III, CEO of Bellevue-based Whooshh Innovations, which makes the device.

The system doesn’t hurt the fish, according to multiple studies. In fact, some research indicates that the system saves the salmon so much energy that they are more likely to survive the long swim back to their spawning grounds.

While Bryan grew up in the Seattle area and studied law, his family owns orchard land in Eastern Washington. During a sabbatical from a job at Adobe, he got more involved in the family business and started to wonder if there was a more “efficient” and mechanized way to pick apples.

To find out, he quit Adobe and started a company that invented machinery that could quickly and gently pick apples from trees. But in 2011, he got distracted from his original mission after seeing a helicopter and being told it was carrying salmon over an otherwise impassable dam.

That, he thought at the time, must be expensive. And inefficient.

He looked at some of equipment he’d designed to transport apples and, in particular, at a tube filled with cushioning material and thought, Why not

fish?

To test his suspicion that the technology might translate, he went to a fish market in Seattle, bought live tilapia and fed them into a tube originally designed for apples.

"The tilapia seemed happy," he said.

Like that, Whooshh Innovations was born.

Bryan saw that the technology could help solve one of the thornier barriers to restoring salmon in the Columbia River and to boosting other struggling salmon populations: dams.

Dams, even those with fish ladders, decimate salmon populations, as the fish make long upstream journeys to the spawning beds in which they were born in order to reproduce.

The Salmon Cannon hopes to offer fish a detour, by transporting them up and over the dam through a tube.

But, as some pointed out after the technology's surge of online popularity, the technology only addresses a single symptom of larger problems facing the species.

"Salmon cannons have their purpose to get over some dams that don't have fish ladders," said Sam Mace, the Inland Northwest director of Save Our Wild Salmon, in an email. "But they aren't a solution on dams like the lower Snake, that have fish ladders and where the larger problem is the smolts having to get downstream, dealing both with the dams themselves and the hot water conditions, slow migration, and predator problems created by reservoirs."

Bryan doesn't believe that wholesale dam removal is a viable path forward, because "we also need the clean energy that those dams produce." But he doesn't dismiss the other problems caused by dams. Instead, he said, the technology developed by Whooshh could help address those problems, namely predation and heat stress.

Whooshh's salmon technology could sort fish to reduce the predator population in reservoirs, giving salmon some respite: The fish first swim into a large enclosed box, passing briefly through a pocket of air where their photos are taken. A computer then determines what type of fish it is, whether it has any visible wounds and how big it is.

If, for instance, a predatory and invasive Northern Pike swims into the machine, it could be diverted to a "grinder," Bryan said. Or, if a hatchery-raised salmon appeared, it could be diverted back downstream. Those decisions would be up to the fishery managers, Bryan said.

As for heat stress, preliminary studies have shown that fish using the salmon cannon are able to travel faster and farther upstream before the summer heat makes portions of the Columbia impassable.

Earlier this month, the Colville Confederated Tribes released 30 salmon into the Columbia River above Chief Joseph Dam. That's the first time salmon have been in that stretch of river since the dam was built.

Now, a Whooshh Salmon Cannon is on a barge at Brewster, Washington, waiting for final approval from the U.S. Army Corps of Engineers to travel upstream to Chief Joseph to conduct live-river tests. There is already one installed at the Cle Elum hatchery, transporting fish from the hatchery to Cle Elum Lake.

If approved by the Corps of Engineers, the system could become an

important tool in the Colville Tribes' effort to restore salmon to their native waters in the Upper Columbia.

The Whooshh system costs between \$2 million and \$4 million, depending on where it's installed.

"This could serve as another viable way that we can move fish," said John Sirois, a fisheries coordinator for the Upper Columbia United Tribes. "We're all about having another avenue to help the fish and help the salmon."

### ***Eli Francovich***

By

*Seattle Times staff reporter*

Two men wanted in a [deadly rush-hour mass shooting in downtown Seattle](#) were arrested Saturday morning in Las Vegas, believed to have fled to an "associate" there after being identified by Seattle police as suspects in the high-profile crime, according to the U.S. Marshals Service.

The Jan. 22 shooting near busy Third Avenue and Pine Street left one woman dead and injured seven other people, including a 9-year-old boy, and it set off the latest round of public debate about safety in Seattle.

Marquise Tolbert and William Tolliver, both 24, were arrested "without incident" Saturday as they left the Rio hotel in Las Vegas, said Deputy U.S. Marshal Beatrice Pharr.



*This combination of undated photos released... (Seattle Police Department via AP) **More***

It was not immediately clear Saturday when Tolbert and Tolliver would be returned to Seattle.

In a news conference Saturday evening, Seattle Police Chief Carmen Best offered few details about the arrest.

"Personally, I'm glad they are in custody ... We know that after the mass shooting and the homicide, there was a lot of fear," Best said.



Seattle Police Chief Carmen Best... (Scott Greenstone / The Seattle Times) **More**

Officials including the U.S. Marshals believe the pair may have been in Las Vegas since Jan. 26, Pharr said.

Tolbert and Tolliver [were identified by Seattle police as suspects](#) the day after the shooting. [Both have been arrested multiple times](#), according to court records. Following the shooting, Best said one of the men had been arrested about 25 times and the other, who appears from court records to be Tolbert, had been arrested by Seattle police at least 50 times.

After the shooting, Best said officers recovered more than [20 shell casings from three different caliber weapons](#). A third suspect, Jamel Jackson, 21, was injured in the shooting and located by police at Harborview Medical

Center afterward, police said. Jackson was [charged with unlawful possession of a firearm](#), though police said he was not the aggressor in the fight.

Following the shooting, Mayor Jenny Durkan [said the city would deploy more police patrols](#) and a mobile precinct to the area near Westlake Park, the latest in a series of similar initiatives in recent years. Last year, [violent crime declined](#) in Seattle, with fewer murders, aggravated assaults and robberies. Reports of shootings and gunfire [increased slightly](#).

The woman killed in the shooting, Tanya Jackson, lived in a nearby Plymouth Housing building and [was remembered for the joy she brought others](#).

By Saturday evening, most people injured in the shooting had been released from the hospital, according to a hospital spokeswoman. A 55-year-old woman remained in intensive care at Harborview Medical Center.

*Staff reporter Scott Greenstone contributed to this report.*

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