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What is the 'salmon cannon' and how do the fish feel about it?

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6-8 minutes

A video showing a cannon shooting fish over a dam went viral – but how does it work? CEO and inventor of cannon has answers



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▲ *The Whooshh Passage Portal. Photograph: Handout*

Earlier this week, a video shot through the Twitter feed fray with the velocity of a fish hurtling through a pneumatic tube.

The short video (set to house music, strangely) is a compilation of clips showing variations of the fish-shooting

technology that Washington-based company Whooshh first developed five years ago. Not only has the video given the internet an ideal subject of absurdist fascination to dethrone last week's [30-50 feral hogs](#), it's also raised a lot of questions, like, "Wait, what?", and "How does the fish feel about this?" and, "Can they potentially do this with humans?" (I can't be the only person who was wondering this.)



Cheddar (@cheddar)

This salmon cannon transports the fish between bodies of water. (Via [@CheddarGadgets](https://t.co/2eFQceFgzv)) <https://t.co/2eFQceFgzv>
pic.twitter.com/AHK0QJMCKf

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For answers, I got on the phone with Vince Bryan III, CEO of Whooshh Innovations and inventor of the Salmon Canon (purposely spelled with only one “n” to distinguish the eco-friendly invention from a murderous weapon). His company’s name is derived from the sound fish make as they fly over the

high dams that otherwise may block their upstream migratory routes, preventing them from spawning ([declining salmon stocks](#) are an issue of critical importance in the Pacific northwest).

So, how does the Whooshh Passage Portal work?

The Whooshh Passage Portal is a system that you put into a river that automates the entire process of getting a fish over a dam. In those early videos five years ago you would see people hand-feeding the fish in; today the fish swim into the system on their own. Inside the tubes is a kind of an airlock where we make a small pressure differential to create a force so the fish moves through the tube. And that tube is irrigated, it's misted on the inside, so the fish is able to breathe, and it's a frictionless environment.

From the fish's perspective it's a completely smooth ride and it actually feels to them like they're in the water. And that's why when they come out the exit they just swim away. They swim in, they slide, they glide, and they swim off. There's no shock to their system.

Where has the system been implemented?

The complete Whooshh Passage Portal system is in the Columbia River right now and it's being moved up to Chief Joseph Dam in the next week or so. That will be the first operational WPP outside of our test environment, but all of the components have already been tested and are being used all over the place. The WPP is just a matter of how we've packaged it all together. We also have suggested it for use in

British Columbia, at the Fraser River rockslide.

How many fish have gone through the cannon?

I don't have an exact number, but many, many millions. We've been operating a version of the system in Norway for three or four years now, and transporting between 5,000 and 10,000 fish a day. They've been using the traditional Salmon Canon in Washington for five years now, and those are a hand-feed system. But they do about 15,000 fish a year.

Is your goal to have your technology integrated into every dam if possible, and what would the costs of implementation be?

We would like to see the Whooshh system everywhere on every dam. In the United States, for example, there are 85,000 dams. And just if you did 11 systems a day, you'd have fish passage on every one of those dams in 20 years.

Do you have any plans to make a human-sized cannon?

Only to the extent that we'll move sturgeon at some point. Large, 200-plus pound sturgeon, and that will require us to make a larger tube. And at that point we've got a long list of volunteers who have said that they would like to be the first, and if somebody wants to do it, they're welcome to try.

Interview has been edited and condensed for length and clarity.

America faces an epic choice...

... in the coming year, and the results will define the country

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