These giant, prehistoric salmon had tusk-like teeth

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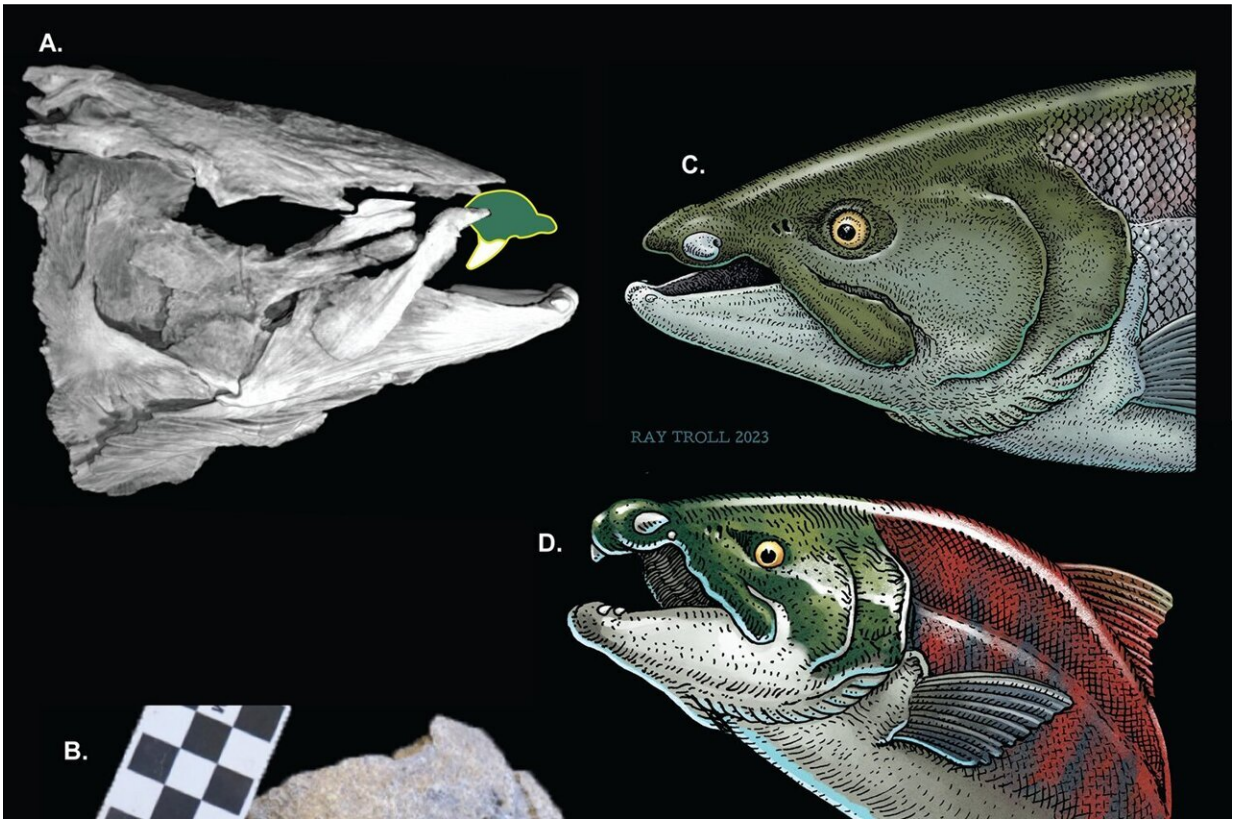


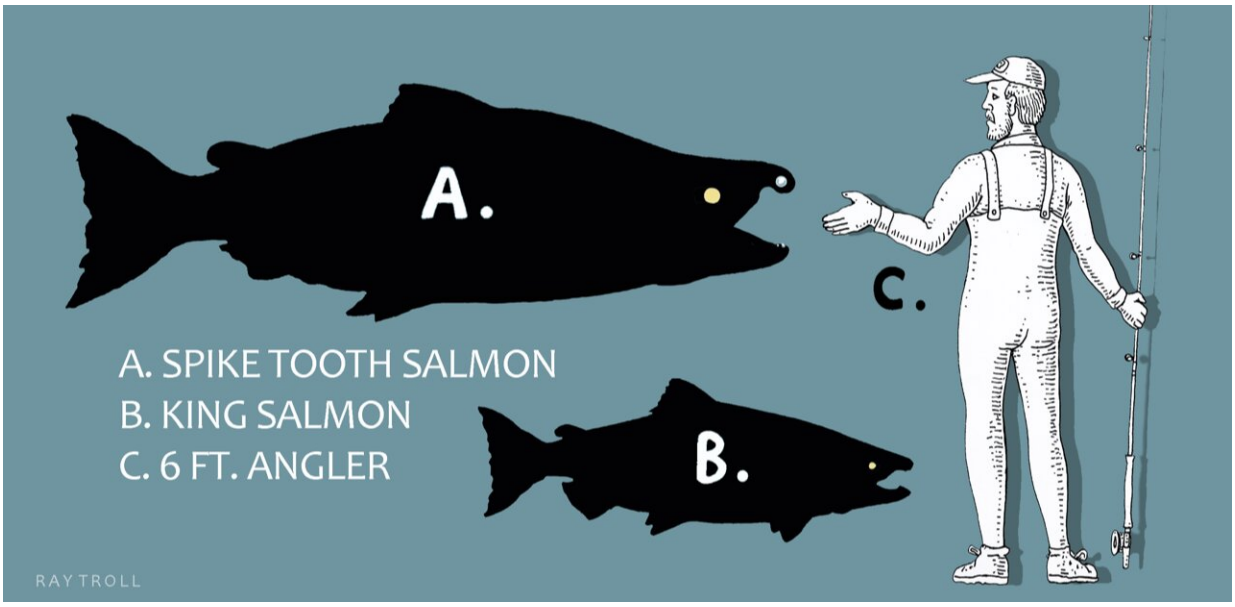
Oncorhynchus rastrosus. (A) CT model of Holotype, UO F-26799, skull in right lateral view with a stylized drawing of the originally proposed "sabertoothed" position of the isolated premaxilla; (B) UO_A in anterior view of skull, prior to complete preparation and CT scan; (C) Artist's rendering skull of male iconic fish with accurate spike-tooth configuration; (D) Artist's rendering of complete female iconic fish with accurate spike-tooth configuration. Scale bar blocks = 1 cm each. Credit: *PLOS ONE* (2024). DOI: 10.1371/journal.pone.0300252

Oncorhynchus rastrosus, a giant species of salmon that lived in the North American Pacific Northwest a few million years ago, sported a pair of front teeth that projected out from the sides of its mouth like tusks, according to a study published April 24 in the open-access journal *PLOS ONE* by Kerin Claeson from the Philadelphia College of Osteopathic Medicine, U.S., and colleagues.

O. rastrosus, first described in the 1970s, has been estimated to reach up to 2.7 meters (8.9 feet) long, making it the largest member of the Salmonidae family ever discovered. Initially, researchers thought its oversized front teeth pointed backward into the mouth like fangs, in large part because fossils of the teeth were found apart from the rest of the skull. This led to the common name "saber-toothed salmon."

But through new CT scans and analysis of various O. rastrosus fossils collected over the years, researchers have now been able to confirm that the teeth actually pointed sideways out of the fish's mouth, similar to those of a warthog. As a result, the authors say, the species should be renamed the "spike-toothed salmon."

While it's unclear exactly what these teeth may have been used for, the researchers believe they were likely used for fighting—either against other spiked-toothed salmon or as a defense against predators—or as a tool for digging out nests. It's also possible the teeth were used for multiple purposes, the authors note. But the teeth likely weren't used for catching prey, since O. rastrosus is believed to have been a filter-feeder that dined on plankton.



Comparative size of the Spike-Tooth Salmon to the largest living salmon and a 6ft. fisherman. Credit: Ray Troll, CC-BY 4.0 (creativecommons.org/licenses/by/4.0/)

Kerin Claeson, lead author and professor of anatomy at Philadelphia College of Osteopathic Medicine, adds, "We have known for decades that these extinct salmon from Central Oregon were the largest to ever live.

"Discoveries like ours show they probably weren't gentle giants. These massive spikes at the tip of their snouts would have been useful to defend against predators, compete against other salmon, and ultimately build the nests where they would incubate their eggs."

Edward Davis, associate professor of earth sciences at the University of Oregon and director of Condon Collection at the UO's Museum of Natural and Cultural History, adds, "I'm delighted that we have been able to put a new face on the giant spike-tooth salmon, bringing knowledge

from the field in Oregon to the world."

Brian Sidlauskas, professor and curator of fishes at Oregon State University, adds, "We also stress that females and males alike possessed the enormous, tusk-like teeth. Therefore, the sexes were equally fearsome."

More information: From sabers to spikes: A newfangled reconstruction of the ancient, giant, sexually dimorphic Pacific salmon, Oncorhynchus rastrosus (Salmoninae: Salmonini), *PLOS ONE* (2024). DOI: 10.1371/journal.pone.0300252

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