

OREGON CHAPTER AMERICAN FISHERIES SOCIETY
NATIVE FISH COMMITTEE
2022 NONGAME NATIVE FISH WORKSHOP FEATURING
SABRETOOTH (SPIKE-TOOTH) SALMON
WORKSHOP SUMMARY

James Capurso, Native Fish Committee Chair

On 7-8 September 2022, 18 fisheries biologists and paleontologists gathered near Madras, Oregon to study a species from the paleontological records, known for its extraordinary size and protruding spiked teeth, the Sabretooth Salmon or Spike-tooth Salmon (*Oncorhynchus rastrosus*). The workshop consisted of an afternoon of presentations followed by a morning of digging for specimens in a nearby gravel pit. Portland General Electric (PGE) volunteered its Trout Creek Ranch north of Madras for presentations, dinner, and camping. The Oregon Chapter of the American Fisheries Society sponsored dinner from Rusty Swine Catering the first night. The Vibbert Family allowed us access to their quarry to dig for the salmon specimens.

The interdisciplinary nature of this Nongame Native Fish Workshop provided fertile ground for interaction and idea exchange between fisheries biologists and paleontologists. Originally planned for September 2020, it was postponed two years due to the pandemic. This workshop is considered to be one of the most informational Nongame Native Fish Workshops over the 9-year series.

The workshop participants enjoyed 4 presentations on September 7th in the barn located on the PGE Trout Creek Ranch. The first one, by Dr. Edward Davis, a paleontologist from University of Oregon, shared the early history of collecting specimens, publications, CT scans, phylogeny, and the steps to excavate responsibly. Although Dr. Brian Sidlauskas from Oregon State University couldn't attend in person, he contributed a pre-recorded video presentation featuring the skeletal characteristics of the species, where they best fit phylogenetically, and delved deeper into the fish's characteristics, including its likely dependence upon filter feeding for nourishment, the orientation of its spikes, and what the spikes may have been used for. Then, Greg Carr, an amateur paleontologist with the North America Research Group, described what we think we know about the species, where their remains have been observed, a history of the collection of specimens, the evolution of our understanding regarding its tooth orientation (from sabretooth to spike-tooth), 3D scanning and printing of skulls, and how larger and smaller varieties of what appears to be the same species have been observed. Lastly, Alaskan Artist Ray Troll contributed a whimsical and informative prerecorded presentation including the evolution of our understanding of the species' physical characteristics.

The next morning was spent digging for specimens in a nearby quarry where the first specimen was found. After the group excavated for a few hours, two specimens were uncovered. One appeared to be a large and one appeared to be a small variety of the species. This was likely the driest fieldwork the fisheries biologists in the group experienced in their careers, as they chipped away at the sediment wall in the hot sun in search of the species. The elevation of the site high above the valley floor far below was striking, considering it used to be the bed of an ancient river. Although an ancient fish, contemporary fisheries knowledge was used to locate the large specimen deep in the sediment

deposits. At the sampling location, deteriorating wood riddled the sediments, indicating an ancient wood accumulation. That would likely have served as cover or caught the carcasses of the spawned-out salmon as they floated downstream. By focusing upon excavating near the wood, the salmon was uncovered.

Everyone left the workshop enriched by the lessons from the past. The interdisciplinary interaction added a special aspect to the workshop as the paleontologists and fisheries biologists shared their experience and views enriching collective understanding of the species.



PGE Trout Creek Ranch, where we presented Sabretooth (Spike-tooth) Salmon slideshows and discussed the species. We also enjoyed dinner and spent the night on the ranch.



Presentations and discussions occurred in the barn on the PGE Trout Creek Ranch.



Dr. Edward Davis (U of O Paleontologist) describes how the spike-like (rather than sabretooth-like) “tooth” projected from the adult salmon.



A presentation in the PGE Trout Creek Ranch barn.



Greg Carr presents in the barn.



Scott Turo, Mike Riehle, and Rich Madden inspect the Sabretooth(Spike-tooth) Salmon bone displays.



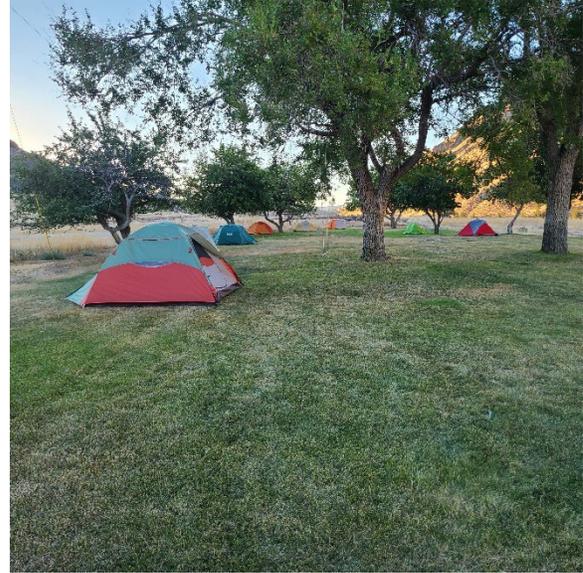
Sabretooth (Spike-tooth) Salmon vertebrae



Sabretooth (Spike-tooth) Salmon fins.



Lateral-pointing "tooth" from a specimen.



A tent city forming on the PGE Trout Creek Ranch as workshop participants set up camp.



Sabretooth (Spike-tooth) Salmon skull.



A coyote shows interest in the workshop.



Workshop participants gathering outside the barn for refreshments.



Gloria Carr with her father's paleontology research vehicle.



Sunset on the PGE Trout Creek Ranch.



Photo of the surrounding valley taken from the quarry where the specimens were found, indicating how high in elevation the river valley was millions of years ago.



Greg Carr from North America Research Group describes previous digs at the quarry prior to initiating our dig.



Amateur paleontologist Greg Carr describes ancient sediments and where previous specimens were found.



Workshop participants listen to Greg Carr.



The hillside where we spent the morning digging for Sabretooth (Spike-tooth) Salmon.



Jim Capurso excavating the hillside in search of a specimen.



Michele Weaver using a cordless jack hammer to excavate while another Jack (Williamson) looks on.



Sabretooth (Spike-tooth) Salmon bone fragments.



The height of the ancient river sediments.



Greg Carr at a site.



Jim Capurso points to where he uncovered a Sabretooth (Spike-Tooth) vertebrae and skull.



Sabretooth (Spike-tooth) Salmon bones encased in sediment.



The vertebrae and skull uncovered by Capurso.



Sabretooth (Spike-tooth) Salmon bones encased in sediment.



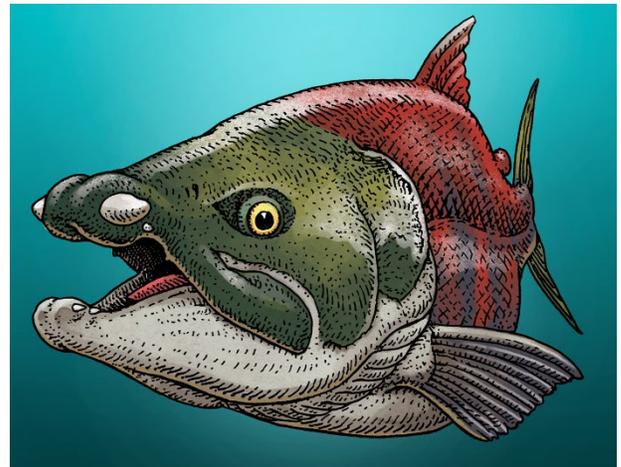
Jerimiah Bonifer, Denny Lassuy, and Hayden Bonifer sampling for salmon.



1990 Ray Troll pastel.



2022 Oregon Chapter AFS Nongame Native Workshop participants (Rich Madden is photographer).



Latest spike-tooth version by Ray Troll.