

Rubber debris litters miles of Puyallup River after artificial turf was used in dam project without permit

August 31 2020, by Lynda V. Mapes, The Seattle Times



Credit: Unsplash/CC0 Public Domain

In black waves, drifts and bands, crumbs of rubber are polluting miles of the Puyallup River after a spill at a dam project last month.

Rubber debris already is likely more than 40 miles downriver in Puget Sound. The pollution is the result of unpermitted use of thousands of yards of artificial turf by the dam's owners while reconstructing parts of the dam.

The Puyallup Tribe was first alerted to the spill by a social media post put up July 31 by Derek Van Giesen, a former employee of Electron Hydro, an owner of the Electron Hydropower Project. He walked off the job over the installation of the turf liner and a large fish kill at the dam that took place the same day of the spill, which occurred overnight on July 29.

Van Giesen said the turf came from a pile stored on the property of a neighboring rock quarry. The pile is at least one story high and as long as a football field.

The company did not inform regulators of the pollution discharge until Aug. 4, according to a consultant's report on the spill prepared for Electron Hydro. A stop-work order was imposed on the company's construction project Aug. 7 by Pierce County and the U.S. Army Corps of Engineers.

From the stop order: "The use of astro-turf in a [river system](#) where it can break down and discharge potential toxins into the water is not considered a suitable material."

The question now is how to clean up the mess, just weeks before adult chinook salmon listed for protection under the federal Endangered Species Act are expected to arrive on their homeward journey.

According to the consultant's report, the company, as part of its work on a bypass channel at the dam, placed 2,409 square yards of FieldTurf on the channel between July 20 and 27. The turf was intended to function as

an underlayment for a plastic liner put on top of it. The company then diverted the river into the bypass channel to create a dry area to continue ongoing work at its dam.

The night of July 29, the diverted river—well known for its rock-chucking high flows—ripped pieces of the liner and turf loose, sending hunks of artificial turf and a torrent of loose black crumb rubber downriver.

The consultant, Shane Cherry of Shane Cherry Consulting of Fort Myers, Florida, estimated that at least 617 square yards of the artificial turf was ruptured by the river; about 1,792 square yards remain in place under the liner.

At least 4 to 6 cubic yards of crumb rubber—each piece about the size of a fat coffee ground—was released to the river, in the pristine upper reaches of the Puyallup, about 6 miles from the boundary with Mount Rainier National Park.

The consultant estimated the rate of travel in the water at 2 mph. The rubber probably reached Orting within nine hours, and Tacoma and Commencement Bay within 20 hours. The river would have deposited crumb rubber all along the way, a distance of some 40 miles, in channel margins, in deep pools, in coves and river bends, and continued redistributing it ever since.

On a visit to the river Thursday with The Seattle Times, Sylvia Miller, vice chairwoman of the Puyallup Tribal council, said she was sick at heart because of the spill.

"I feel anger, so much anger," Miller said. "It hurts to see how much damage they are doing to our lands and waters, everyone's lands and waters."

Everywhere he looked for it along the river, Russ Ladley, resource protection manager for the Puyallup Tribe, saw crumbs of black rubber. Immediately downstream of the dam, it lay in streaks of black on the beach. Fourteen miles down river, there it was again, in black nubby necklaces around rocks, in bands along the shore, in heaps on the river's sandy bank.

Lisa Anderson, tribal attorney, shook her head and grimaced at the mess. The company should not be permitted to resume its work on its project and must instead clean up the river, Anderson said.

Chris Spens, director of regulatory and environmental affairs for Tollhouse Energy Company in Bellingham, which owns the dam with Electron Hydro LLC, said in an email to The Seattle Times that the company is cooperating with the Corps, the Washington Department of Fish and Wildlife (WDFW), Pierce County and the state Department of Ecology to clean up the spill and do restoration and mitigation work.

The dam, formerly owned by Puget Sound Energy, is 116 years old and produces electricity for about 20,000 homes. Reconstruction at the dam is intended, along with screens and other equipment, to prevent fish and sediment from entering the flume, used to deliver water for the project.

"Electron is committed to providing clean energy and restoring Puyallup River fisheries," Spens wrote, and the company will deal with the spill before continuing work on the dam, he added.

Van Giesen in his social media post showed the placement of the artificial turf in a video in which he kicked drifts of black crumb rubber with his shoe to show the volume of rubber debris. "This is not sand," he said as he took video.

"Millions of tiny rubber beads ... all washed down the river and are

polluting my lifelong fishing holes. What is on video here is just a small portion of the spill ...

"All the rubber is actually inside the astro turf ... and spills out when moved."

Van Giesen said in an interview he put up the post because as a lifelong fisherman who grew up along the Puyallup, he was disgusted by what he saw. "I just quit. I knew it was not the right place for me. I don't know how you clean it up, the damage is done and will probably continue past when I am on my deathbed," he said.

He said he knew the spill would happen. "Even I know the water table is right underneath the liner, and I'm just an average Joe," he said.

Before the river tore hunks of the turf away, walking on the liner "was like walking on a waterbed," VanGiesen said.

This was not the first trouble at Electron Dam.

Fish and Wildlife reported a fish kill on the river the same day, as Electron Hydro dewatered a stretch of the river during routine maintenance at its dam, causing what the department described as "a large fish kill, resulting in the loss of ESA-listed species, including Chinook, and bull trout, along with coho, rainbow trout, cutthroat trout, and sculpin."

Electron Hydro crews had neither the proper equipment nor used proper techniques during the dewatering procedure, resulting in fish being killed by high temperatures and lack of oxygen, according to the on-scene report written by Tara Livingood-Schott, a WDFW biologist. She was on hand to assist with fish sampling and counting.

The work became dangerous for the crew, too, as two of them sank in mud up to their waists, she reported.

Canada geese and eagles feasted on stranded fish as all attention was shifted from rescuing the fish in the dewatering channel to rescuing the workers. "The situation was becoming increasingly urgent to free the two, as they were sinking slowly by the minute," she wrote.

"It took around 45 minutes to free the individuals from the mud and during this time no fish recoveries took place as flows continued to drop, stranding more and more fish."

The total number of fish lost was unknown, she reported, "but my best educated guess would be in the thousands," including unauthorized lethal take of ESA-listed fall chinook, winter steelhead and bull trout in all life stages.

For Bill Sterud, chairman of the Puyallup Tribe, the rubber spill is personally painful.

"To me, my church is the river. It is the sound. It is the mountain. It is the forest. And when I see this degrading take place it affects me internally. It hurts."

To him this latest event is nothing new in the history of a dam the tribe never wanted.

"It will always be a fish killer. It should ultimately be taken down. We are going to do our best at the tribe to make that happen. That is my goal and my hope of what we should strive for. It's a new era," he said. "Fish are important. Clean water is important ... we have one mother Earth and it is being degraded as we speak."

The Puyallup originates in glaciers along the slopes of Mount Rainier in the Cascades. It flows about 65 miles to Commencement Bay and forms the third largest tributary to Puget Sound.

The river flows through the reservation of the Puyallup Tribe, which has fished and lived along its waters since time immemorial. The river is home to eight ocean-migrating fish populations, including chinook, coho, chum, pink and sockeye salmon, steelhead trout, bull trout and sea-run cutthroat trout.

Historically the river supported as many as 42,000 chinook. The run is greatly diminished today to a little more than 1,000 [fish](#) and was listed for protection in 1999 under the ESA.

Chinook from the river are critical to endangered southern resident killer whales, which primarily feed on chinook.

The Electron dam, about 42 miles southeast of Seattle in Pierce County, is a 10-foot-high wooden dam, about 200 feet long, that diverts water into a 10-mile-long wooden flume conveying water to the dam's powerhouse.

Fish regularly are entrapped and killed at the dam, long a problem known to regulators.

Replacement of the old dam with new equipment is intended to address the problems with a dam, identified in a 2005 watershed analysis as "the most serious single threat to Chinook salmon in the watershed area," according a letter written by federal regulators back when the dam was owned by Puget Sound Energy.

PSE sold the dam to Electron in 2014, but still sells electricity from the project.

©2020 The Seattle Times

Distributed by Tribune Content Agency, LLC.

Citation: Rubber debris litters miles of Puyallup River after artificial turf was used in dam project without permit (2020, August 31) retrieved 26 April 2024 from <https://phys.org/news/2020-08-rubber-debris-litters-miles-puyallup.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.