Lamprey larvae studied for clues to decline

(AP) – Lampreys have survived for 350 million years.

They've adapted to the coming and going of ice ages, continental drift and predators that predate the dinosaurs. Yet, researchers attribute an "alarming drop" in a West Coast population of the ancient creature to a comparably recent development: Us.

Dams, cities and agriculture have all taken a toll, researchers believe.

"The freshwater habitat where they spawn and rear has been changed and degraded with urbanization, agriculture and various land-use practices," said Howard Schaller, project leader of the Columbia River fisheries office for the U.S. Fish and Wildlife Service in Vancouver.

Experts believe the jawless eel-like fish is an important building block in the marine-riverine food web.

Sea lions, for example, historically sated themselves on the high oil content of the lamprey's tissue rather than devouring many endangered salmon to get the same nutritional value.

Immense numbers of lamprey once nourished the entire food web, from bugs to bears, with nutrients from the ocean.

That alone should be sufficient reason to conserve lamprey, said Bob Heinith, hydro program coordinator for the Columbia Intertribal Fish Commission. Lamprey may be the less attractive cousin to the Northwest's iconic salmon on the glamour scale, but Heinith said their importance can't be underestimated.

"They're the neglected species," Heinith said, "but probably the foundation for everything."

On a recent day at Willamette Park in Portland, Schaller joined fellow Fish and Wildlife Service researchers Greg Silver and Brian Davis.

The trio intended to do some fishing.

While American Indian tribal members plucked adult lamprey far upriver at Willamette Falls, Schaller's team attempted the trickier task of finding lamprey larvae – known as ammocoetes (pronounced am-o-seats) – ensconced in the river bottom.

Previous studies have mainly involved researchers wading in tiny streams, teasing ammocoetes out of the muddy stream bottoms with backpack-mounted electrofishing gear.

Over the past year, researchers have been using an industrial-sized electrofisher lowered from a motorboat to find ammocoetes in the much broader and deeper Columbia and Willamette rivers.

"This is the first time anybody has found ammocoetes in main stem tributaries," Schaller said.

Researchers want to know whether the lamprey larvae tend to cluster in certain areas or whether they seem to be distributed more randomly.

They determine the age by measuring their length and sorting out oceangoing Pacific lamprey from western brook lamprey that spend their lives within the river.

It's not easy to find larvae, each barely the size of a sewing needle, in a river as big and broad as the Willamette.

Using a probabilistic sampling system, researchers have divvied the river's lower 27 miles below the waterfall in Oregon City into some 30,000 squares measuring 30 by 30 meters each. The program selects sample squares on a random basis, then re-sorts them to ensure they're spread across a wide area.

Alarmed by the trend, tribal groups are pushing for major improvements at eight major dams along the Columbia and lower Snake rivers.

Adult lamprey counted at dams have dwindled in recent years.

Yet federal authorities have declined petitions to protect them under the Endangered Species Act partly because so little is known about them. The juvenile sampling surveys on the Willamette and Columbia are intended to see whether lamprey larvae make use of heavily industrialized sections of the Columbia River basin.

"Whether they're still living to maturity, we can't say," Schaller said.

On this day, scientists sampled the Willamette near downtown Portland.

The researchers embarked on a motorboat equipped with a microwave-size "electrofisher" known as a bell.

Mounted to a mechanical hoist, the bell includes two stainless steel plates capable of delivering a small jolt into the muddy river bottom. Silver described the minute-long jolt as an irritant that will goose the tiny ammocoetes out of the mud and into a 4-inch-diameter suction pipe attached to the bell.

Researcher Silver, glancing at a GPS device, piloted the boat to the first square on his list directly under the Morrison Bridge. Davis began to lower the anchor.

"It's 40 feet deep here," Silver said, as the boat drifted slightly. "Now, it's 45 feet."

"We're running out of line here," Davis shouted.

Silver made a slight adjustment, moving the boat away from a deep spot near one of the bridge abutments. Satisfied with the location, Davis set the anchor and Schaller began unspooling the bell 27 feet straight down to the bottom.

A small jolt, about 7 volts, jiggled the mud just enough to tease out any ammocoetes that happened to reside in the area of river bottom covered by the bell.

For two minutes, the suction hose spewed water and debris through a filter box affixed to the outside edge of the boat. There were plenty of tiny sticks, but no lamprey.

"This kind of sampling requires a lot of patience," Schaller said.

Fifteen minutes later, the crew repeated the drill in a 35-foot-deep square located roughly midway between the Hawthorne and Marquam bridges.

Davis spotted it first.

"Got one!"

A wriggling ammocoete, the only one captured in a half-dozen samples witnessed by reporters, slithered halfway through the tiny metal grating of the filter box before Davis cupped it with his hands.

After dipping it in an anesthetic, the researchers clipped a fin for laboratory testing, measured it at 56 millimeters and identified it as a resident western brook lamprey. After giving it time to wake up in a bucket of river water, they turned it loose.

Pacific lamprey populations have diminished across the region.

Although dams are believed to be a major impediment to lamprey in the Columbia River basin – about half of adult lamprey don't pass the fish ladders designed for high-energy salmon and steelhead – their numbers have also fallen in coastal rivers with fewer dams.

Schaller hypothesized that the lamprey suffer from the cumulative effect of mankind's imprint on the natural landscape.

Because lamprey spend years filter-feeding in the muddy river bottom as larvae, they may be especially vulnerable to pollution.

"The problem now, is we have anthropogenic impacts on such a wide range across their distribution that, at least what we're observing in the lower 48, is what appears to be an alarming drop in their numbers," Schaller said.

The numbers have bounced around on the Columbia River, from 379,000 counted at Bonneville Dam in 1969, to 19,000 in 2000, to 117,027 in 2003. However, scientists believe the general trend is downward.

Last year's count of 14,500 was the lowest ever, and this year is lagging behind even that.

Alarmed by the trend, tribal groups are pushing for major improvements at eight major dams along the Columbia and lower Snake rivers.

They have also suggested transporting lamprey to artificially seed upstream tributaries.

Heinith, with the Columbia River Intertribal Fish Commission, said the tribes are even exploring the possibility of rescuing lamprey by raising them in hatcheries. "I definitely think it's a crisis," Heinith said.

Tribal Council agenda items

The following are items set for Tribal Council consideration:

Wednesday, Aug. 25
9 a.m. to noon: 2010 budget session with Ray Potter and Michelle Stacona.
1:30-3 p.m.: Warm Springs Forest Products Industries annual audit. Ray Potter, Lou Torgeson.
3-4 p.m.: Telco update with Jeff Anspach.
4-4:30 p.m. Business.

Thursday, August 27:
9 a.m. to noon: Tribal attorney's update.
1401 Process, Port of Ogan, Arlington, BIA restructure, Pelton, allotment issue, fish accords update.

Friday, August 28:
University of Oregon President Richard LaRiviere.

Saturday, August 29:
Fishing at Whiskey Dicks, Richard LaRiviere, 11 a.m. to 2 p.m.

Monday, August 31:
11 a.m. to noon: CRITFC executive director, Paul Lumley.

(Agenda items are subject to change by Tribal Council.)

To reach the Spilyay Tymoo, please call 553-2307, or 553-2210.

The next deadline to submit items for publication in the Spilyay is Friday, Sept. 4. Thank you!

State preparing for swine flu season

(AP) – As many as two out of five Oregonians are expected to come down with the flu this fall and winter, prompting the state to prepare for the possibility of an epidemic that would close schools and threaten the economy, officials said Friday.

One of the top concerns is a possible outbreak of the H1N1 flu virus, commonly called swine flu, which has been blamed for nearly 500 deaths nationally since the start of the last flu season, including 11 in Oregon.

Gov. Ted Kulongoski opened a statewide summit on the flu threat last in Salem with a plea to Oregonians to be ready to take care of themselves at home to avoid straining limited health care resources during a major outbreak.

"Families and communities have to develop plans to be able to take care of themselves," Kulongoski said. "If you expect the government to be there for every single family, it's not possible."

He also said the state is urging companies and small business owners to encourage employees to stay home if they come down with the flu to prevent its spread.

"If you have 40 percent of the work force of the state at some time in the next six to eight months coming down with the flu, you're going to substantially impact our productivity and our ability to recover from the current economic crisis, so this is very, very serious," Kulongoski said.

But the governor made clear that help will be available from state and federal agencies which will respond at whatever level necessary to battle an outbreak or an epidemic, including assistance from the Oregon National Guard.

Health officials say infections from swine flu, like the seasonal flu, can range from mild to severe. Symptoms are a high fever, cough, sore throat, chills, body aches and fatigue.

Need help with a legal problem?

Legal Aid Services of Oregon provides free assistance to low-income Oregonians in many civil cases. Speak with an attorney during drop-in hours 1 to 4 p.m. on the first Monday of the month at the Family Resources Center in Warm Springs. Or call us at 385-6944 Monday through Wednesday between 10 a.m. and 2 p.m.