

# Discovery of new bacteria complicates salmon poisoning

CORVALLIS — Researchers at Oregon State University have identified for the first time another bacterium that can cause symptoms similar to “salmon poisoning” in dogs — and may complicate the efforts of Pacific Northwest pet owners to keep their dogs protected and healthy.

The Pacific Northwest, from northern California to central Washington, is the only region of the world in which dogs face this potentially deadly health threat. It's caused by a complicated life cycle that includes a common freshwater snail that harbors a fluke worm, and the fluke, in turn, carries the bacterium *Neorickettsia helminthoeca*.

The bacterium is the actual cause of salmon poisoning.

The underlying problem is not new. Dogs that died after eating uncooked, infected salmon were first noted in the Astoria Journal in 1814, not long after Lewis and Clark vis-

ited the region.

The conventional wisdom, however, has been that dogs are usually immune to salmon poisoning after they have once been infected, treated with antibiotics and recovered — giving pet owners at least some assurance that it's a problem they no longer need be concerned about.

The new discovery makes it clear the issue is not that simple.

In the infectious process that leads to salmon poisoning, the fluke is released from snails, which then infect salmon and other freshwater fishes. The life cycle is completed when a mammal eats an infected fish — in this case, dogs get sick from eating raw or undercooked salmon. The possible occurrence of “salmon poisoning” is actually dictated by the geographic distribution of the snail.

Another bacterium called “SF agent,” however, has been

found for the first time in a salmonid fish anywhere in the world, researchers report in a recent study in *Veterinary Parasitology*.

The fluke host for this bacterium is *Stellanchasmus falcatius*.

“SF agent can infect dogs that eat salmon or trout, and it can cause a mild fever in dogs and other symptoms that can resemble salmon poisoning,” said Michael Kent, a professor of microbiology in the OSU College of Science and College of Veterinary Medicine, and co-author of the study. “It can also be treated with antibiotics, but may not offer immunity to dogs that could be later exposed to the actual salmon poisoning bacterium.”

“A pet owner might believe their dog is protected, when it isn't.”

The larval stages of the worm that carries *Neorickettsia helminthoeca* were first associated with the disease in 1911,

and in 1950 the actual bacterium was confirmed as the cause of salmon poisoning. It's in the same bacterial family as SF agent — meaning pet owners must now understand their dogs may face two related *Neorickettsia* pathogens — but one causes only a mild illness, while the other can be deadly.

Veterinary doctors, Kent said, routinely have treated animals based on their clinical signs, because the eggs of the fluke may be hard to find in dog feces, and the bacterium is difficult to culture from dog blood.

Left untreated, dogs with salmon poisoning can die in a week to 10 days, often from severe hemorrhaging and internal ruptures. The ultimate fatality rate can approach 90 percent of untreated cases.

The bottom line, he said, is that pet owners should not make any assumptions about whether or not their dogs may have immunity to salmon poi-

soning. Kent said he has received several reports from local veterinarians documenting dogs contracting salmon poisoning more than once.

With the new awareness that different bacteria can cause similar initial symptoms, pet owners should know that dogs displaying such symptoms may or may not have a serious health problem.

The fluke worm, but not the bacterium, can also infect humans. Humans do not contract salmon poisoning, but may develop a relatively mild gastrointestinal illness. Either freezing or cooking infected fish will kill the worms.

This research was supported by the National Institutes of Health and done in collaboration with researchers from the University of North Dakota, Georgia Southern University, and the Woodburn Veterinary Clinic in Woodburn, Ore.

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## Eclipse from 1B

oregonstateparks.org, and 8 a.m. by phone at 1-800-452-5687.

Campgrounds run by the US Forest Service will start taking reservations six months in advance, in February 2017.

## State from 1B

year, it will also be a chance to retain the individual 4A crown she claimed last year.

Joining Siuslaw from the Far West in the team competition will be North Bend, which won the district title at Tugman State Park on Oct. 28 with 34 points.

Siuslaw scored 41 points for

The eclipse will begin at 9 a.m. and end at 11:30 a.m. on Aug. 21, 2017.

The 60-mile wide path of totality — when the moon completely blocks the sun — will last for about two minutes starting at 10:15 a.m. on the coast between Newport and Lincoln City.

The path of totality then sweeps through the state and on to Idaho, then runs across the United States toward South Carolina.

For more information about the eclipse or camping reservations, visit [www.OregonStateParks2017Eclipse](http://www.OregonStateParks2017Eclipse).

## Fishing from 1B

Fish are beginning to enter the mainstem. Casting spinners, drifting bait or using a bobber and jig can be effective.

### SALMON RIVER: Chinook

The Salmon River and bay is open for Chinook salmon. Fishing is slow. Fish are throughout the bay and river. Trolling herring in the lower bay is an effective technique. Eggs and bobber can be productive in the upper bay and

second-place and the final spot for a trip to today's state meet.

For the Viking boys, it was a mere three points that allowed Marshfield to edge out Siuslaw for second place, 50 to 53.

North Bend won the Far West team title with 41 points, qualifying the Bulldogs, along with the Pirates, for today's state meet in the team division.

However, the Viking boys will

still be represented thanks to senior Jack Pickell, who ran a personal best (17 minutes, 11 seconds) at district to finish fourth and qualify individually for state.

The varsity girls race will start at 11:15 a.m., followed by the boys race at 11:50 a.m.

Results will be available after each race at [www.osaa.org/activities/bxc](http://www.osaa.org/activities/bxc).

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Trolling herring in the lower bay is an effective technique. Eggs and bobber or drifting eggs can be productive in the upper bay and river as the season progresses. Consult the regulations for changes in deadline locations through the season.

Steelhead fishing is slow. The majority of the summer steelhead are in the upper Siletz gorge. Casting spinners, drifting bait or using a bobber and jig can be effective. For cutthroat trout, casting small spinners, spoons or fly fishing streamers or dry flies can be very effective.

### YAQUINA RIVER: Chinook

The Yaquina River and bay is open for Chinook salmon. Fishing is slow. Fish are throughout the bay and river to the angling deadlines. Trolling herring in the lower bay is an effective technique. Eggs and bobber can be productive in the upper bay and river as the season progresses.

For cutthroat trout casting small spinners, spoons or fly fishing streamers or dry flies can be very effective.

### COOS COUNTY LAKES/PONDS: Trout

Rainbow trout were stocked in Upper Empire, Bradley, Saunders, Powers, and Butterfield lakes last week. Due to extremely low water levels, Lower Empire Lake was not stocked. Trout that were destined for Lower Empire Lake were stocked into Upper Empire and Butterfield lakes. Currently fishing for trout has been decent in the deeper lakes like Eel Lake. Anglers are having success slowly trolling wedding rings.

### TENMILE BASIN: Trout, bass, yellow perch, coho

Trout angling in the streams of the Tenmile Basin are now closed until May 22, 2017. Trout fishing in Tenmile Lakes is open all year.

There is no wild coho fishery in Tenmile Lakes this fall. Largemouth bass fishing has been good over the past month.



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