

Scent research could help salmon find their way home

Effort to stop interbreeding

By JES BURNS
Oregon Public Broadcasting

Apparently, salmon don't like the smell of watercress. The aroma of shrimp doesn't pique their interest either. And the fragrance, eu de steelhead? A definite no-go.

"The fish did not like it at all. We tried. They did not like it," said Oregon State University researcher Maryam Kamran. "They're very picky."

It turns out, this could be helpful information to know when you're trying to figure out how to keep salmon raised in hatcheries from interbreeding with wild fish — a phenomenon called "straying."

It's a problem that occurs at salmon hatcheries everywhere in the West. But it's particularly concerning on southern Oregon's Elk River, where efforts are underway to preserve the small population of wild native Chinook salmon.

Things get a little hectic around 9 p.m., when a salmon hits the entanglement net stretched across a cold and windy stretch of the Elk River



Jes Burns/Oregon Public Broadcasting

The state Department of Fish and Wildlife's Austin Huff inserts a radio tag into the stomach of an adult Chinook salmon. The agency is tracking where the fish are moving once they enter the Elk River.

near Gold Beach. The floats on the choppy surface begin to shake and bob as the fish struggles to get free.

"We've got a fish!" yelled Jenn Ambrose, a fisheries technician with the Oregon Department of Fish and Wildlife.

Two of Ambrose's colleagues on a salmon-tagging team sprint into the water.

"Even after doing this for five years, you still get that

adrenaline," Ambrose said from the gravel bank.

Using a headlamp to see in the dark, they successfully free the salmon and bring it over to a live well on the riverside.

It's a female fall Chinook, still vivid silver from its time in the ocean. Like all Pacific salmon, it's used a mix of magnetic and olfactory — or odor — information as a map to get back to this river where it was born and make the next

generation of Chinook in the Elk River.

Team leader Austin Huff checks to see if its fin is clipped, indicating whether it was born wild or at the Elk River Hatchery about 12 miles upstream.

"There's no mark. It's a wild fish," he said.

He then opens the mouth of the salmon and smoothly inserts a radio tracking tag into the fish's stomach.

"It's a relatively noninvasive, you know, better than surgery," Huff said. "As they're hitting the river system, their esophagus is actually closing up. They're finished eating for their life in anticipation of their spawning. And because of that they will keep the tag within their stomach cavity and carry it all the way upriver."

The team is tracking the movements of wild and hatchery Chinook salmon to see where they travel and spawn within the Elk River.

"The idea is to keep the wild fish wild and hatchery fish in the hatchery," Huff said.

But in this river, there's a good chance this wild female Chinook will end up mating with a hatchery-raised fish. Too good of a chance.

The Elk River Hatchery was built back in the late 1960s to generate more salmon for fishermen — both commercial and recreational. The effect the hatchery would have on the native run of fish on the river wasn't known or even a consideration at the time.

And it turns out, there are miles of fantastic spawning grounds downstream of the hatchery — something the captive-reared fish immediately figured out.

The first year the hatchery fish came back, the best available fish counts from the state showed they outnumbered the wild fish on the spawning grounds 2 to 1. Five years later, that ratio was 4 to 1.

The numbers fluctuate from year to year, sometimes widely, but the percent of hatchery salmon on spawning grounds used by wild salmon hit 80 percent as recently as 2002.

"We know that (hatchery) fish, when they come back and reproduce, they produce fewer surviving offspring than wild-origin fish," said David Noakes, of the Oregon Hatchery Research Center.

The state considers the interbreeding wild and hatch-

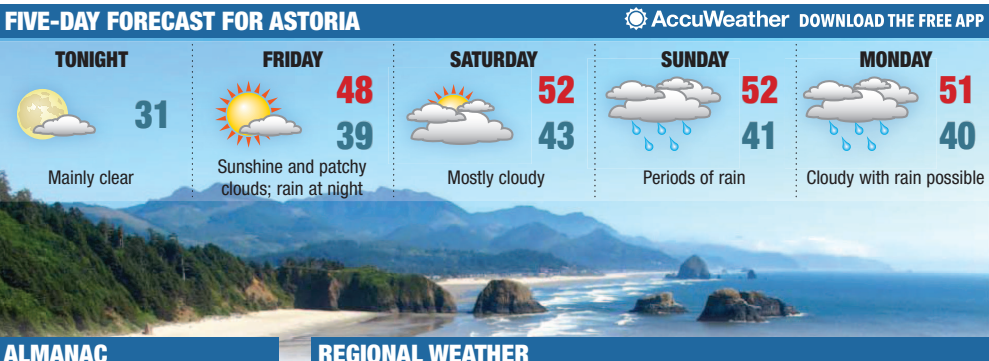
ery fish a significant threat to the native fish on the Elk River.

"What's changed is our priorities and outlook. We're collectively paying more attention to conservation of native runs of fish than we did," said Shannon Richardson, with the Department of Fish and Wildlife's Coastal Chinook Research and Monitoring Program.

In the state's most recent management plan, Elk River Chinook salmon were considered "nonviable," in part because of the high number of strays from the hatchery. The state immediately cut the number of salmon the hatchery could release. And it gave the Elk River Hatchery a 2021 deadline to significantly cut the stray rate, or face further cuts.

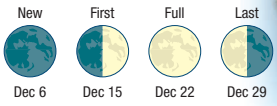
And less fish for fishermen to catch could be a hit for the coastal economy on the southern Oregon Coast, which relies heavily on fishing and tourism.

Steps taken in the past few years on the river have already started bringing down the average stray rate to about 42 percent. But the state's target is 30 percent. And that's still a pretty big gap to cross.



ALMANAC	
Astoria through Wednesday.	
Temperatures	
High/low	46°/31°
Normal high/low	50°/37°
Record high	59° in 1908
Record low	22° in 2013
Precipitation	
Wednesday	0.00"
Month to date	0.32"
Normal month to date	1.77"
Year to date	53.71"
Normal year to date	59.14"

SUN AND MOON	
Sunset tonight	4:30 p.m.
Sunrise Friday	7:44 a.m.
Moonrise today	6:52 a.m.
Moonset today	4:32 p.m.



UNDER THE SKY	
Tonight's Sky: New moon (11:20 p.m.)	

TOMORROW'S TIDES	
Astoria / Port Docks	
Time	High
1:25 a.m.	8.1 ft.
12:44 p.m.	9.7 ft.
Time	Low
6:54 a.m.	2.8 ft.
7:47 p.m.	-0.7 ft.

NATIONAL CITIES	
City	Today
Atlanta	51 36 pc 52 39 pc
Boston	42 31 s 40 19 s
Chicago	30 16 pc 26 17 s
Denver	33 19 pc 38 22 pc
Des Moines	25 11 pc 26 14 s
Detroit	36 24 sf 33 22 c
El Paso	65 45 pc 55 44 f
Fairbanks	19 15 c 30 21 c
Honolulu	82 71 s 81 71 sh
Indianapolis	35 18 sn 32 17 s
Kansas City	32 18 c 33 21 pc
Las Vegas	51 44 sh 58 40 pc
Los Angeles	61 50 r 68 50 s
Memphis	46 37 c 43 37 r
Miami	74 64 s 78 69 pc
Nashville	68 34 pc 43 32 c
New Orleans	63 54 pc 68 59 c
New York	40 32 s 38 26 s
Oklahoma City	45 27 c 35 33 i
Philadelphia	40 31 s 39 23 s
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Price holds her final ‘salonical’

The Daily Astorian

Astoria City Councilor Cindy Price will hold a quarterly constituent meeting from 6 to 7:30 p.m. on Monday at the Kala Gallery, 1017 Marine Drive.

The "Last Salonical" is an opportunity to

celebrate participation in local democracy, and exchange ideas and information about ongoing and planned city projects.

There will be complimentary snacks and beverages. All are welcome to attend.

Price's four-year term expires at the end of the year.

Sarasue B. Berger Walla Walla, Washington Dec. 21, 1940 — April 6, 2018

On April 6, 2018, our beloved mother and grandmother "Nattie" died peacefully at home. She was born in Colorado, and later settled with her family in Hillsboro, Oregon.

She is a graduate of Hillsboro High School, and served as worthy adviser for Rainbow Girls, while her future husband, Gary, served as master counselor of DeMolay. They met on a blind date, and he knew the moment he set eyes on her she would be his wife. They were married for 53 years at the time of his death.

She was a devoted homemaker and business partner with her husband, owning the Cannon Beach Bakery and Geri's Seafood and

Chicken. She loved gardening, square dancing, painting, rodeos and playing pinochle with her friends at the Walla Walla Senior Center.

In memoriam, donations in her name may be sent to Walla Walla Community Hospice.

She was preceded in death by her brother, Jerry Davis, of Hillsboro, Oregon, and her husband, Gary, in 2013. She is survived by her daughters, Trina Berger, of Walla Walla, Washington; and Edie Paden, of Walla Walla, Washington; grandson, Austin Paden, of Boise, Idaho; and granddaughter, Jordan Schilling, of Milton Freewater, Oregon.

ON THE RECORD

DUI

• At 11:32 p.m. Wednesday, Sean Thomas Rogers, 41, of Astoria, was arrested by Warrenton police on U.S. Highway 101 and Harbor Drive and charged with driving under the influence of intoxicants. His blood alcohol content was 0.15 percent.

DEATH

Dec. 5, 2018

ABSHER, Samuel Everett, 82, of Gearhart, died in Portland. Caldwell's Funeral & Cremation Arrangement Center of Seaside is in charge of the arrangements.

BIRTH

Nov. 26, 2018

WATTERS, Andrea and Edward, of Cathlamet, Washington, a boy, Colton Ried Watters, born at Columbia Memorial Hospital in Astoria. Grandparents are Gary and Terrie Howell of Cathlamet and Albert and Mary Watters of Hoquiam, Wash.

LOTTERIES

OREGON
Wednesday's Pick 4:
1 p.m.: 3-1-7-6
4 p.m.: 6-8-0-3
7 p.m.: 0-9-6-0
10 p.m.: 1-1-2-0
Wednesday's Lucky Lines: 02-05-12-13-FREE-19-23-26-30
Estimated jackpot: \$28,000
Wednesday's Megabucks: 02-12-19-24-29-32

Estimated jackpot: \$4.8 million
Wednesday's Powerball: 09-11-36-37-38, Powerball: 11, Power Play: 5
Estimated jackpot: \$200 million

WASHINGTON
Wednesday's Daily Game: 4-2-0

Wednesday's Hit 5: 12-21-22-32-35
Estimated jackpot: \$220,000
Wednesday's Keno: 01-02-05-09-13-18-19-28-31-38-39-41-45-55-60-61-62-63-68-75
Wednesday's Lotto: 02-12-18-24-28-46
Estimated jackpot: \$1.2 million
Wednesday's Match 4: 07-10-13-20

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The Daily Astorian publishes paid obituaries. The obituary can include a small photo and, for veterans, a flag symbol at no charge. The deadline for all obituaries is 10 a.m. the business day prior.

Obituaries may be edited for spelling, proper punctuation and style. Death notices and upcoming services will be published at no charge. Notices must be submitted by 9 a.m. the day of publication.

Obituaries and notices may be submitted online at www.dailyastorian.com/obituaryform, by email at ewilson@dailyastorian.com, placed via the funeral home or in person at The Daily Astorian office, 949 Exchange St. in Astoria. For more information, call 503-325-3211, ext. 257.

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