### APPENDIX H

## ENVIRONMENT



https://www.dailyastorian.com/news/new-home-sites-ready-in-seaside/article\_0e6b6bc1-7c79-5f5d-bc45-9728bef178ef.html

#### **New home sites ready in Seaside**

CRBJ Jul 31, 2006

Seaside is set to see some new hillside homes with ocean views. Haze Weed, development manager for the Vista Ridge subdivision, recently announced that 24 of the planned 34 lots are ready for construction. The site is on the east side of Forest Drive.

Haze Weed, project development manager for Vista Ridge LLC, said the site is designed around nature.

"The lots are in a forested setting, and nearby are two salmon spawning creeks and a heron rookery. For people who love nature, this is a perfect setting," she said.

Weed was also noted the site is above the tsunami zone.

For more information call (503) 325-2797, or email hweed@charter.net.



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SCIENCE & ENVIRONMENT

# Hot salmon: Heat wave brings concern over river-water temperatures



By Courtney Flatt (Northwest News Network)

June 27, 2021 9:03 a.m.

As the mercury climbs this weekend, water temperatures are also expected to increase. Warmer waters can spell bad news for salmon, especially if the temperatures stay warm for long periods of time.

For salmon, temps above 68 degrees Fahrenheit can be dangerously warm. The fish will often take refuge in cooler areas, like tributaries.

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"As we see river temperatures warm, fish might have less access to those types of habitats that they would be seeking out. That's the risk, is that everything is warming up, and they're not going to find those nice, cool places where they can hang out and do their thing," said Alison Colotelo, a fisheries biologist at Pacific Northwest National Laboratory.



Sockeye salmon like these are among the salmon species in peril, as outlined in the 2021 State of Salmon in Watersheds report.

Aaron Kunz

Snake River sockeye have already started migrating back from the ocean to their spawning grounds. Claire McGrath, with the federal NOAA Fisheries, says salmon should be reaching the mouth of the Snake in the next few days.

This past week, dam managers began to release cool water from behind Idaho's <u>Dworshak Dam</u>. That water eventually flows into the Snake River and should provide some relief.

Trouble is, that cool water won't last forever.

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"Depending on what the volume of water released from Dworshak is, there's only so



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She says, in an average year, that works well to cool waters when it's needed.

"The concern, of course, is that we have this pretty sustained heat wave right now. Temperatures in Lewiston, Idaho, are forecast above 100 degrees for close to two weeks," McGrath said. "Those very extreme temperatures, it's almost getting beyond our ability to control the temperature (behind dams) and maintain our temperature criterion of (68 degrees Fahrenheit)."

McGrath says water temperatures are "very reactive" to air temperatures, especially as water flow levels are lower in the Snake River. She says there's concern that this year could be similar to disastrous water temperatures and low flows that happened in 2015. The good news: This year, the Lower Columbia River is in better shape than it was six years ago.

In 2015, extremely warm water combined with low stream flows. The Snake River sockeye run that year was supposed to break records. Instead, nearly 99 percent of the run died before it reached Idaho's Sawtooth Valley.

Improvements were also made to the system after 2015 to help temperatures at fish ladders. Idaho Fish and Game can also trap and haul sockeye captured at Lower Granite Dam to the Sawtooth Hatchery, when it deems the water is too warm.

NOAA Fisheries is also paying attention to sockeye in Washington's Okanagan basin, which faced a large die-off in 2015.

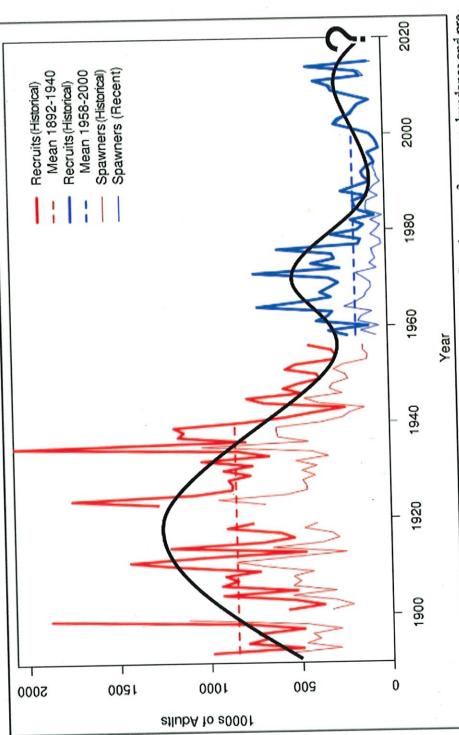
Many researchers viewed 2015 as a foreshadowing of what climate change could have in store for salmon.

"Understanding how do we manage our river systems in a way that's effective, to get fish to where they need to be to be successful in spawning is going to continue to be important," Colotelo said.

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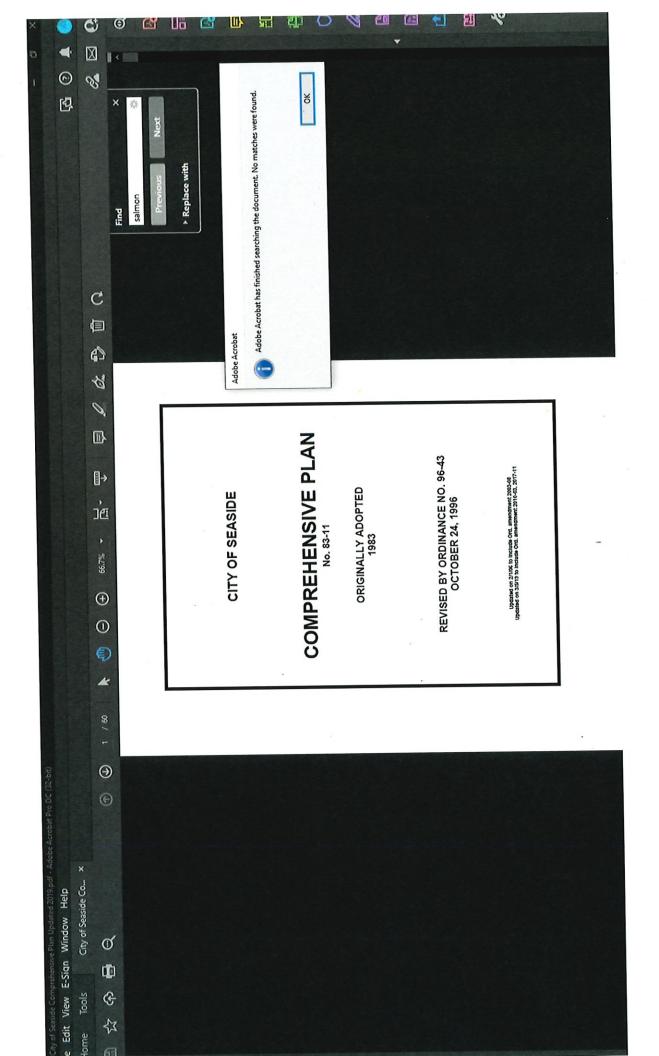
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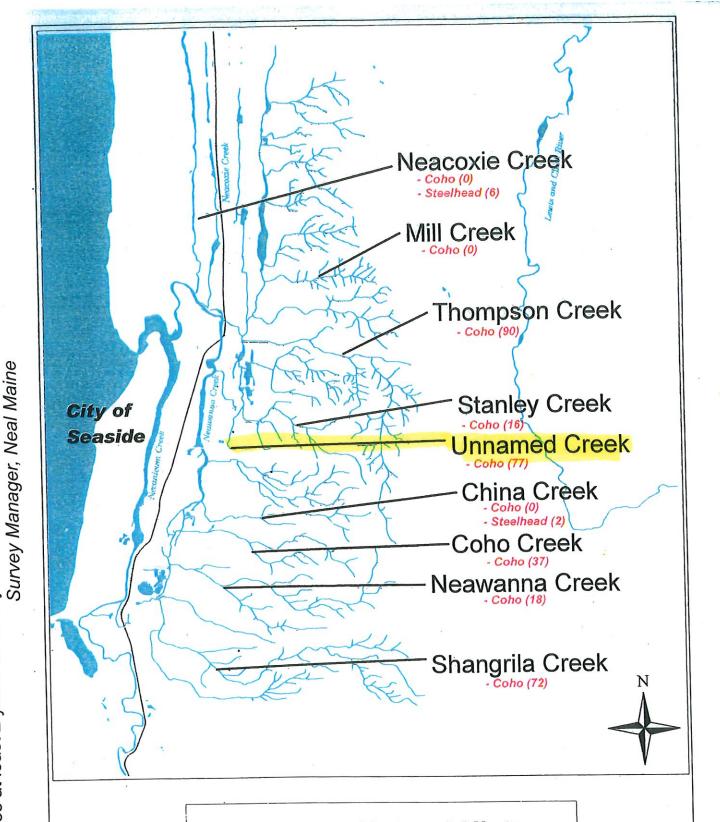
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harvest recruits. Horizontal dotted lines are the geometric mean recruits for 1892–1940 and 1960–2009. Analysis based Figure 2-1.9 Comparison of historical (1892–1956) and recent (1958–2015) estimates of spawner abundance and preon data from Cleaver 1951, Mullen 1981a, and Mullen 1981b; recent data from Wainwright et al. 2008 and ODFW 2016. Dark line is one interpretation of the long-term trend.

have varied greatly but peak abundance in several years (2011 and 2014) has been higher than at According to the 2012 BRT report, <sup>10</sup> all-time low returns in the 1970s and 1990s were around development run sizes. Since the mid-1990s, Oregon Coast coho spawner escapement levels 20,000 coho salmon spawners, which could be as low as one percent of some of the pre-





### Neawanna Natural History Adult Salmon Surveys Dec. 2001- Jan. 2002

Field Surveys Completed by Volunteers from the Citizen Science Project. The project is funded by Oregon Watershed Enhancement Board and USFWS Coastal Wetland Grant Program.

Map produced with help from CREST (2/4/02) for North Coast Lands Conservancy under contract from the City of Seaside