

Wild Salmon in a Warming World

Sue Mauger

Cook Inletkeeper

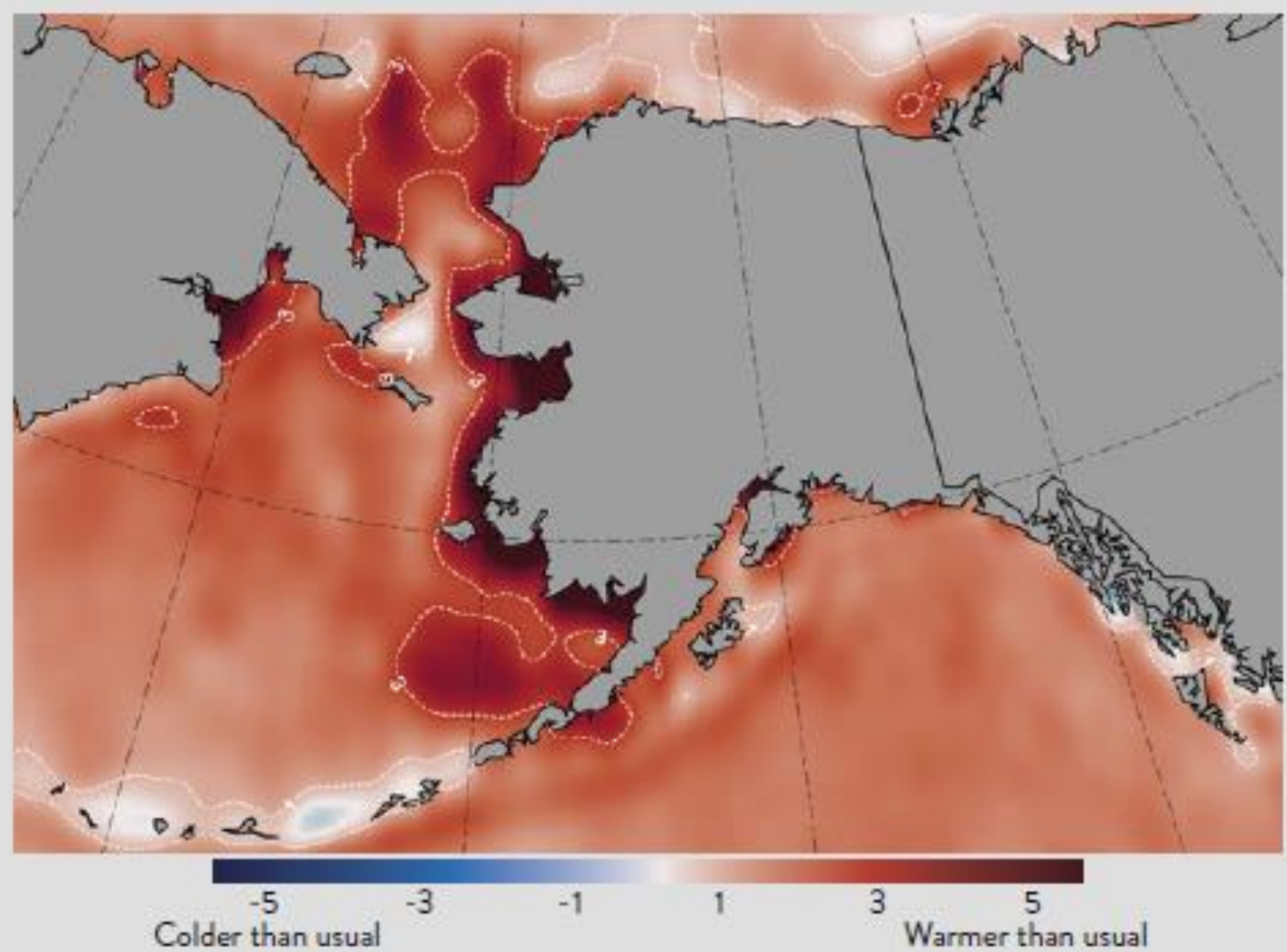


KATLIN VADLA 2016

WARM SURFACE WATERS

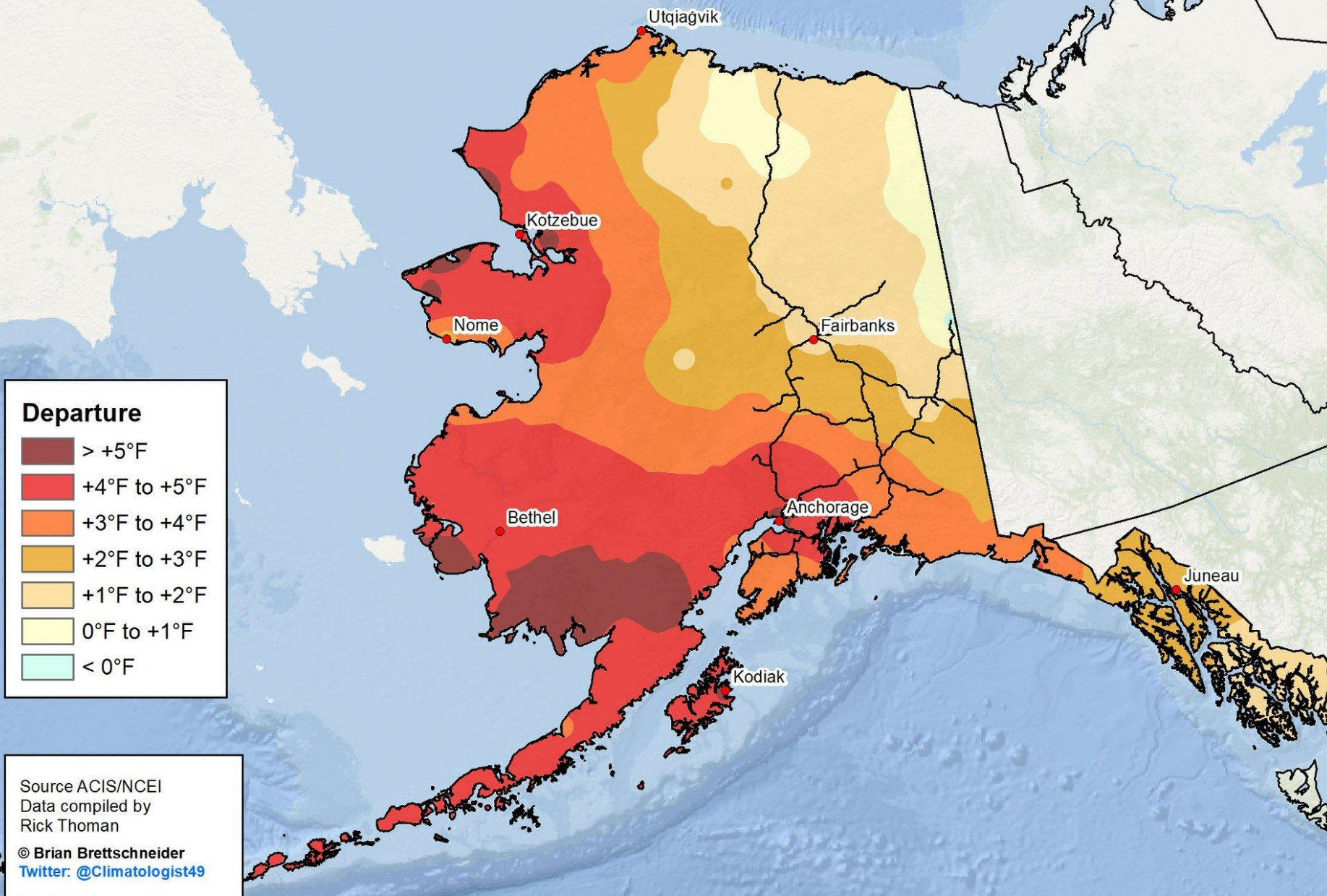
Summer sea surface temperatures in Alaska waters have been much warmer (colored red below) than average (colored white) during 2014–2018, especially along the west coast, where the surface waters were 4–11°F warmer than average in the summer of 2019.

25



Data source:
NOAA/NCEI

Summer 2019 Temperature Departure from Normal



Departure

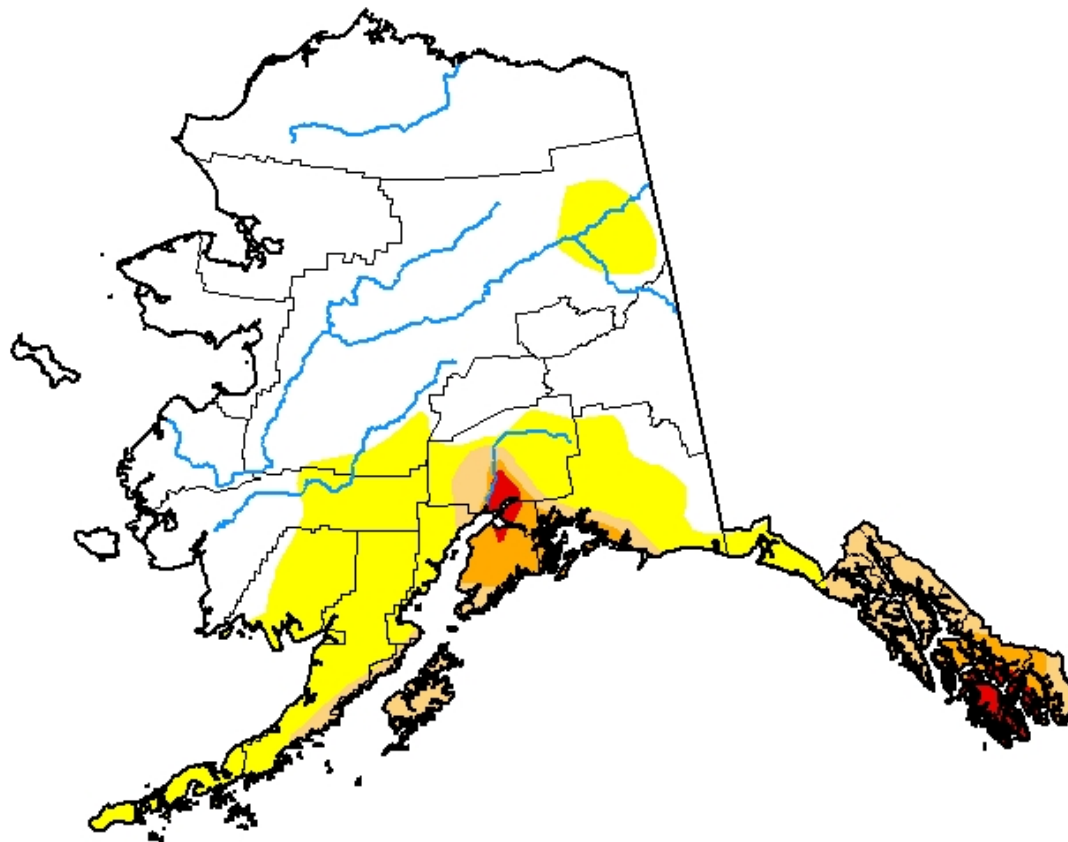
- > +5°F
- +4°F to +5°F
- +3°F to +4°F
- +2°F to +3°F
- +1°F to +2°F
- 0°F to +1°F
- < 0°F

Source ACIS/NCEI
Data compiled by
Rick Thoman

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Twitter: @Climatologist49

U.S. Drought Monitor Alaska

August 20, 2019
(Released Thursday, Aug. 22, 2019)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	66.67	33.33	11.19	4.58	1.32	0.00
Last Week <i>08-13-2019</i>	69.37	30.63	9.63	3.77	0.88	0.00
3 Months Ago <i>05-21-2019</i>	94.17	5.83	2.78	1.65	0.88	0.00
Start of Calendar Year <i>01-01-2019</i>	94.17	5.83	2.35	1.02	0.00	0.00
Start of Water Year <i>09-25-2018</i>	95.65	4.35	2.34	2.06	0.00	0.00
One Year Ago <i>08-21-2018</i>	95.65	4.35	2.34	0.00	0.00	0.00

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Jessica Blunden
NCEI/NOAA

<https://www.drought.gov/drought/states/alaska>



droughtmonitor.unl.edu



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Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image IBCAO

Google Earth



Photo credit: Stephanie Quinn-Davidson



Photo credit: Stephanie Quinn-Davidson

DESHKA RIVER

07/08/2019

5:00 pm AK TIME

Water Temp = 27.1 °C (80.8 °F)

Air Temp = 31.0 °C (87.8 °F)

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Image IBCAO

Google Earth

Deshka River 2019

— Chinook count — average daily water temperature

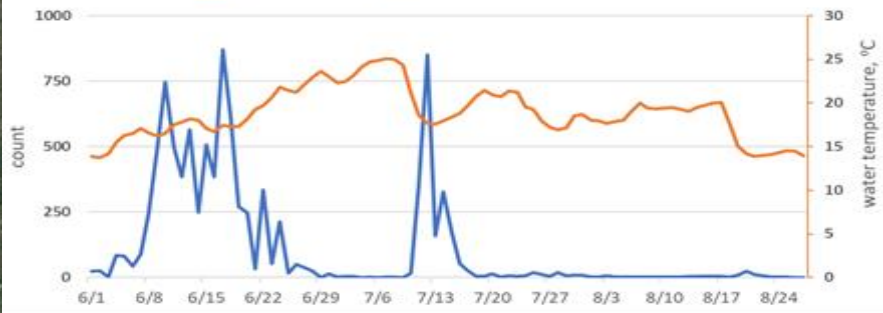
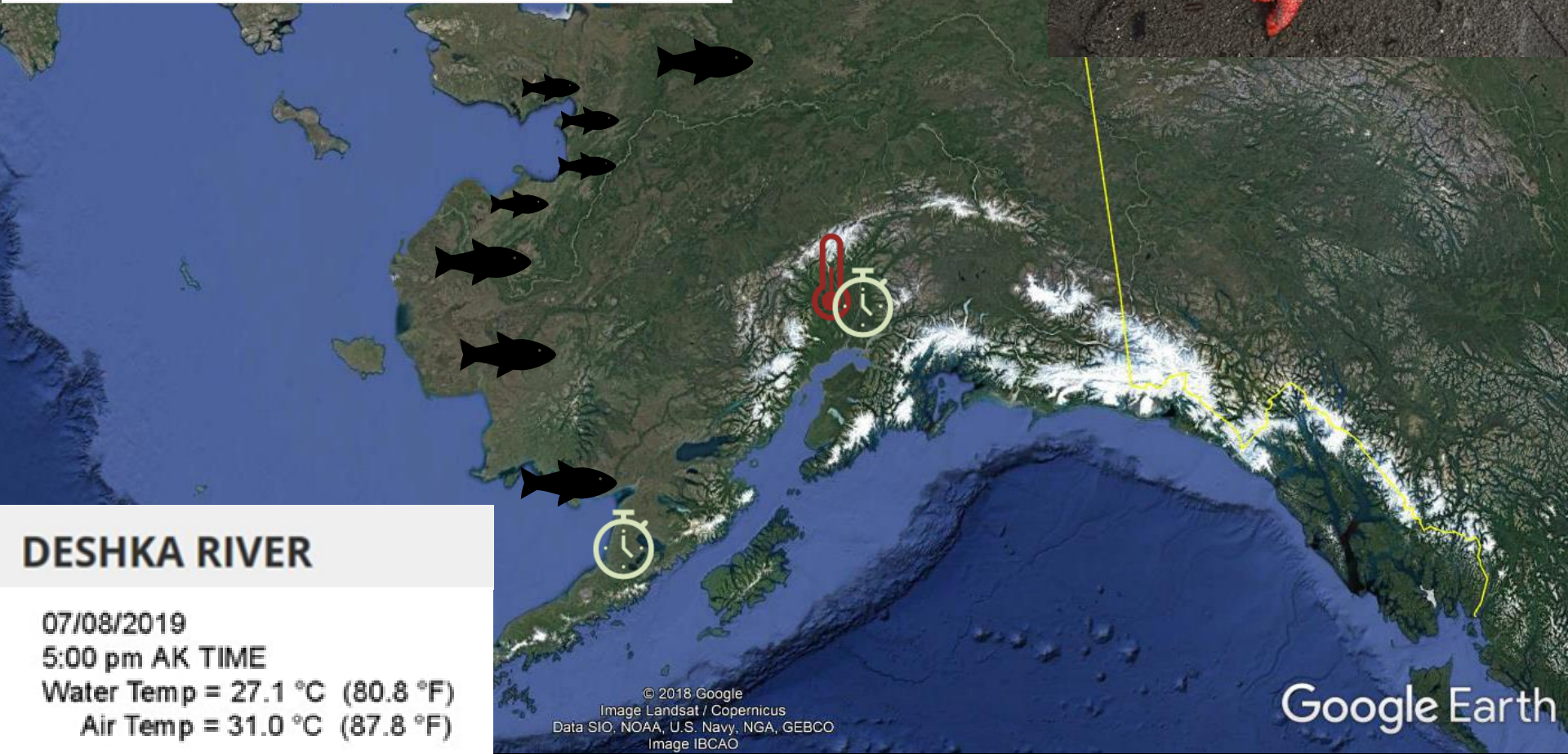


Photo credit: Stephanie Quinn-Davidson



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Deshka River 2019

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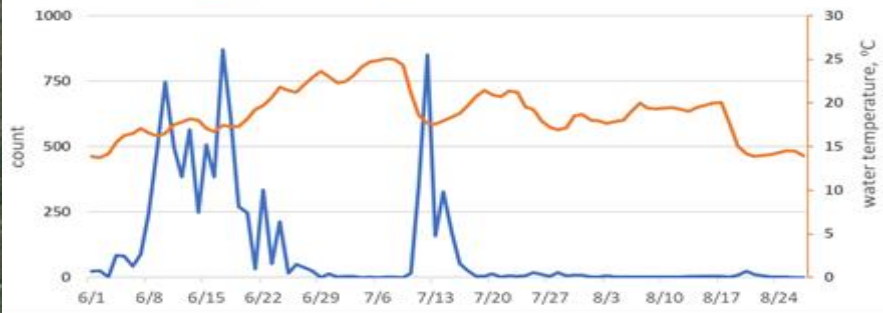
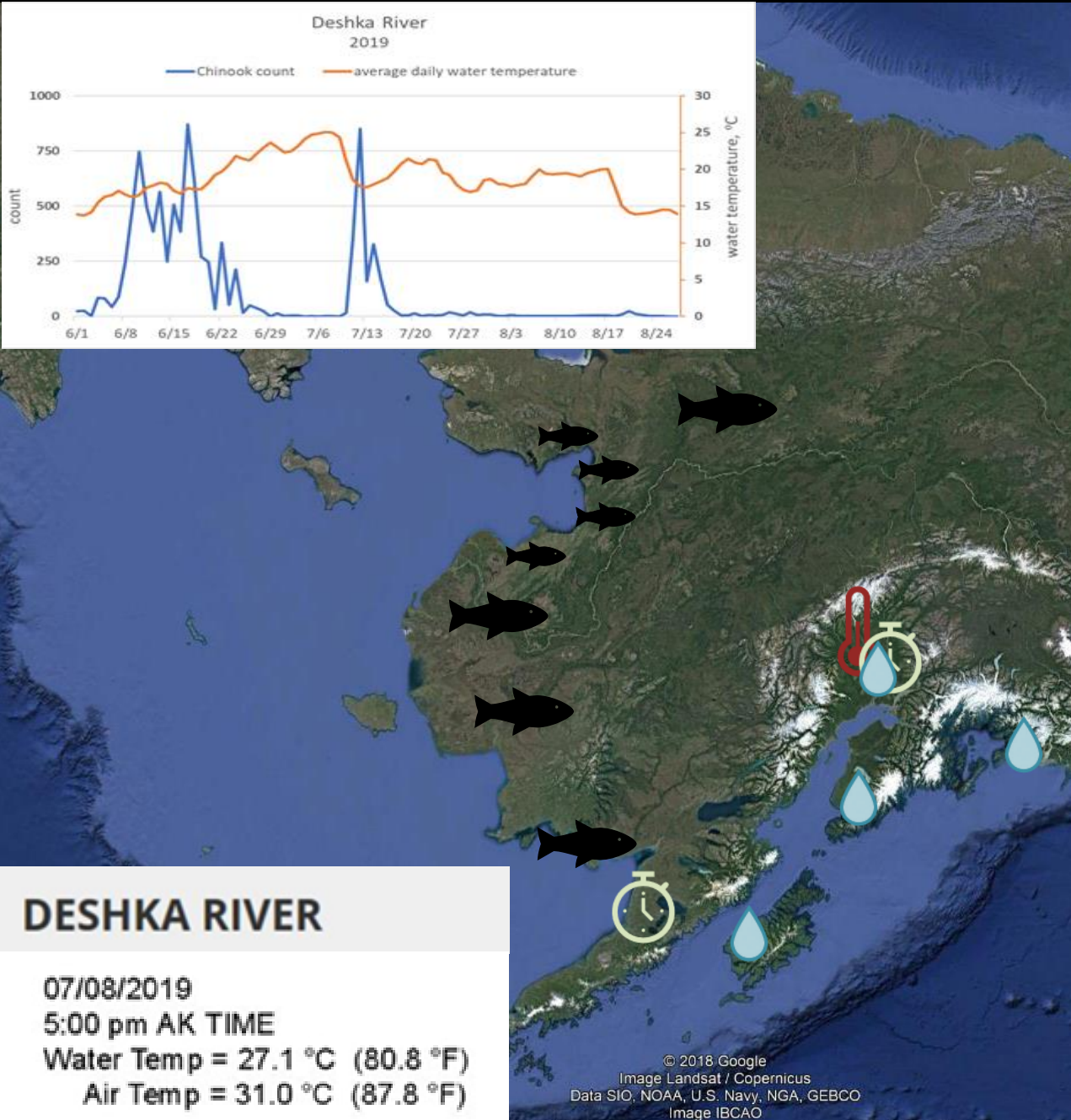


Photo credit: Stephanie Quinn-Davidson



Photo credit: LEO Network/Michael Opheim



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Google Earth



Summer of 2019

Warm and low freshwater conditions led to both physiological and behavioral responses by adults of all 5 species of wild Alaska salmon around the state and impacted commercial, sport and subsistence fishermen. Impacts to egg and juvenile life stages are unknown.

Stream Temperature Monitoring Network for Cook Inlet Salmon Streams

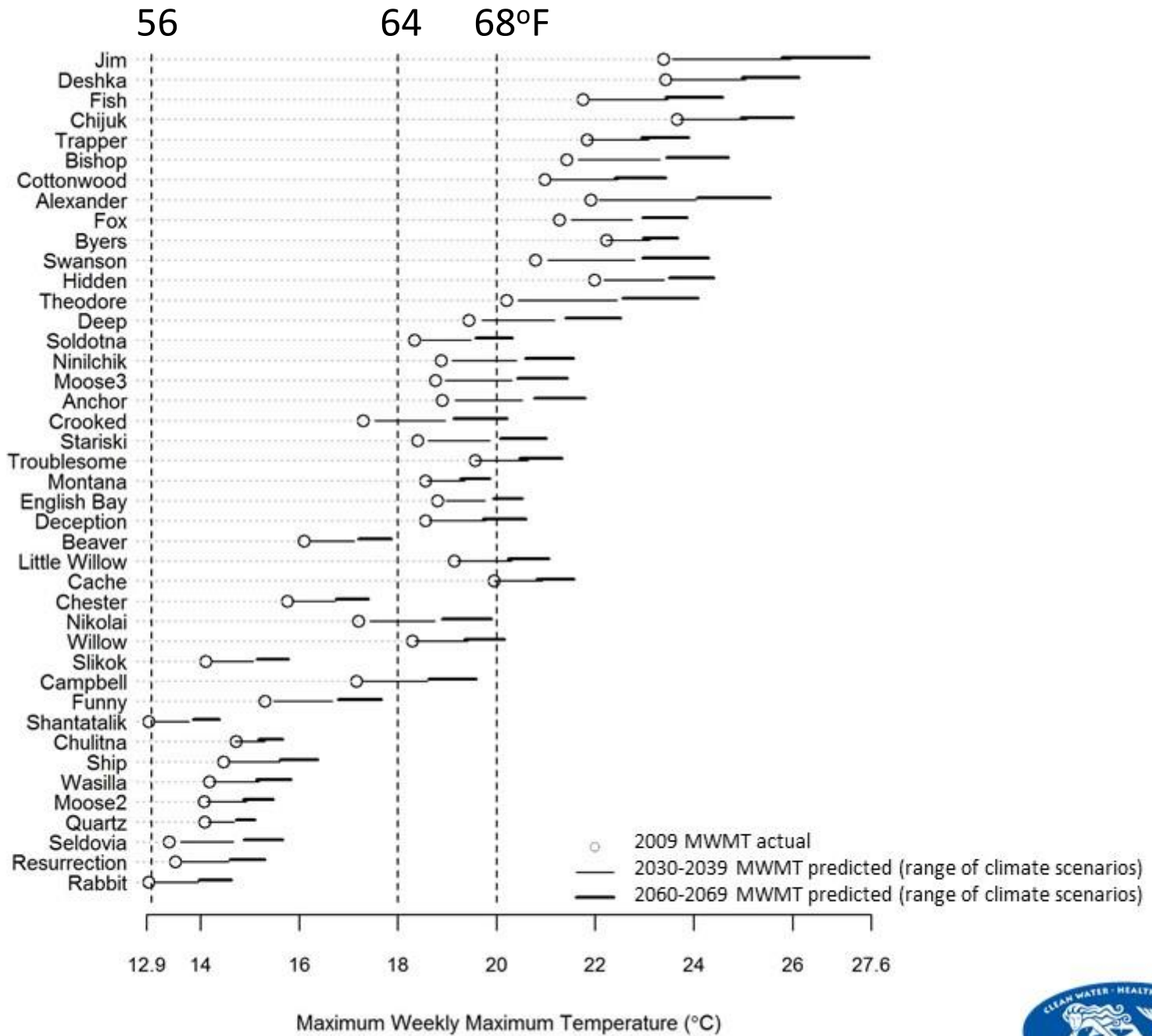




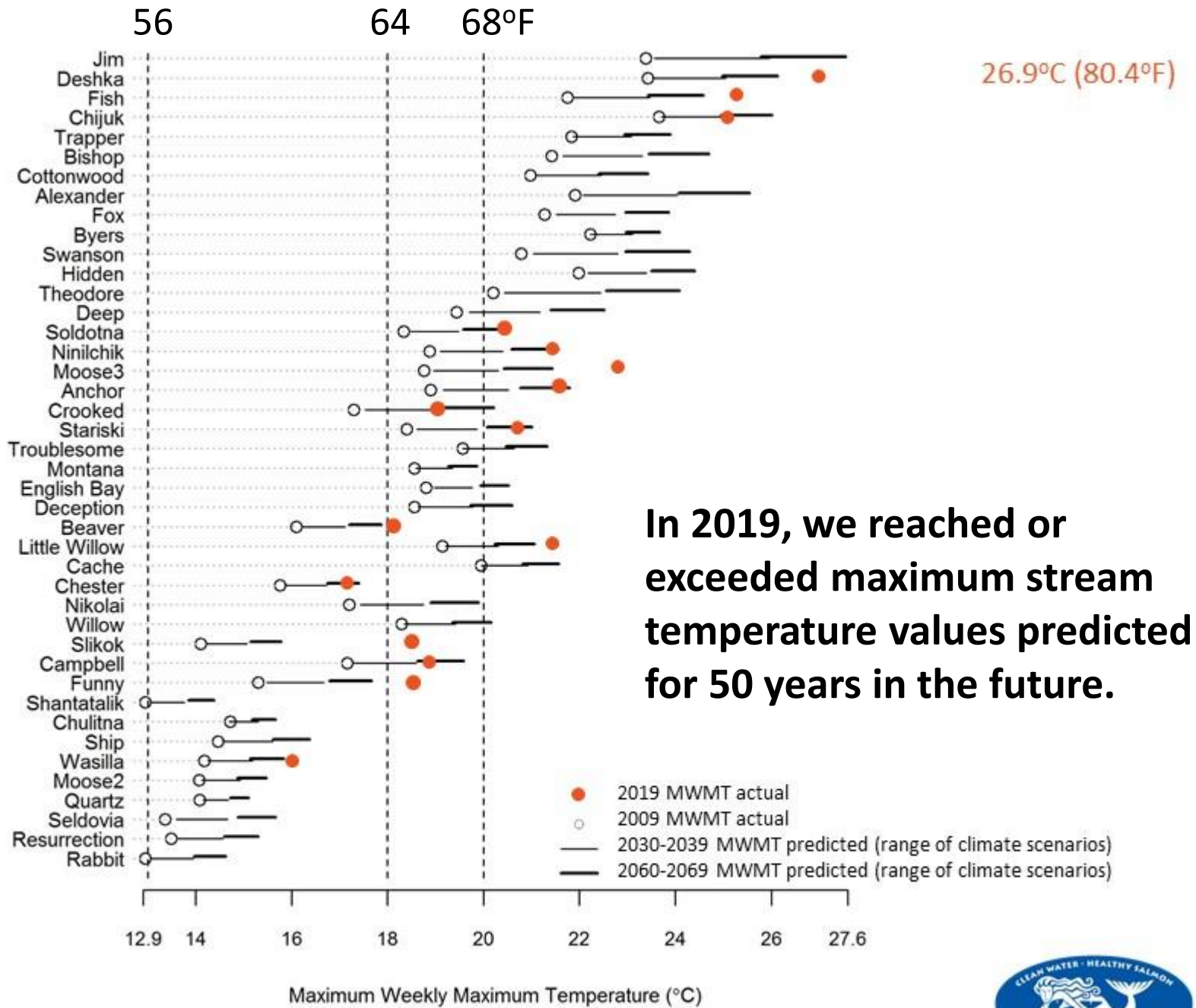
Average summer temperatures have increased by 0.5°F per decade since 1980 in non-glacial stream of Cook Inlet.

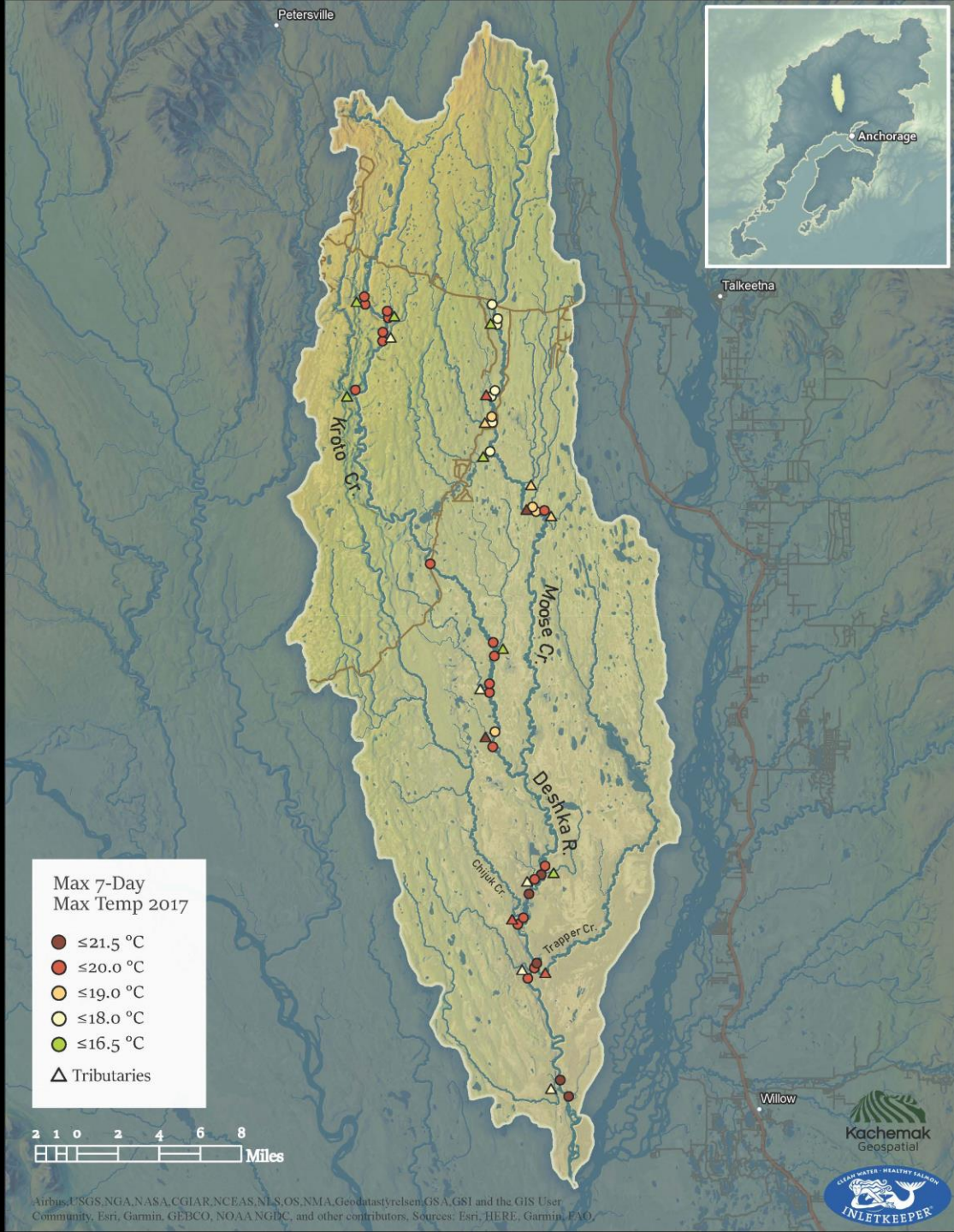
Schoen, E., R. Shaftel, C. Cunningham, L. Jones, S. Mauger, D. Rinella, and A. St. Saviour. 2018. Freshwater drivers of Chinook salmon in Cook Inlet, Alaska. Prepared for the Pacific Marine States Fisheries Commission. Alaska Center for Conservation Science, Anchorage, AK.

non-glacial Cook Inlet streams

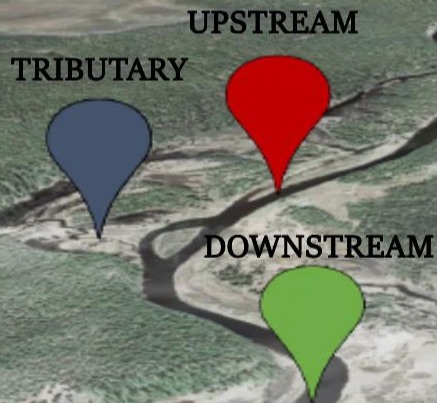


non-glacial Cook Inlet streams





Cluster 6, Deshka River



Climatic conditions are foundational to the quality and quantity of salmon habitat in the Mat-Su Basin.

Climate change can no longer be considered an emerging threat.

“Building/ensuring resilience to our rapidly changing climate” should be captured in the core purpose and envisioned future of the Mat-Su Basin Salmon Habitat Partnership

