

# MATANUSKA-SUSITNA BOROUGH

350 E Dahlia Ave., Palmer, Alaska 99645

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# FISH AND WILDLIFE COMMISSION

## Supplemental Handout – TABLE OF CONTENTS

### Regular Meeting

05/19/2022

- 1 = Presentation: Science to Conservation Outcomes, Cold Water Refugia. Sue Mauger & Jessica Speed
- 19 = Version 3, Draft Water Reservation Questions for June 2

Planning and Land Use Department - Planning Division

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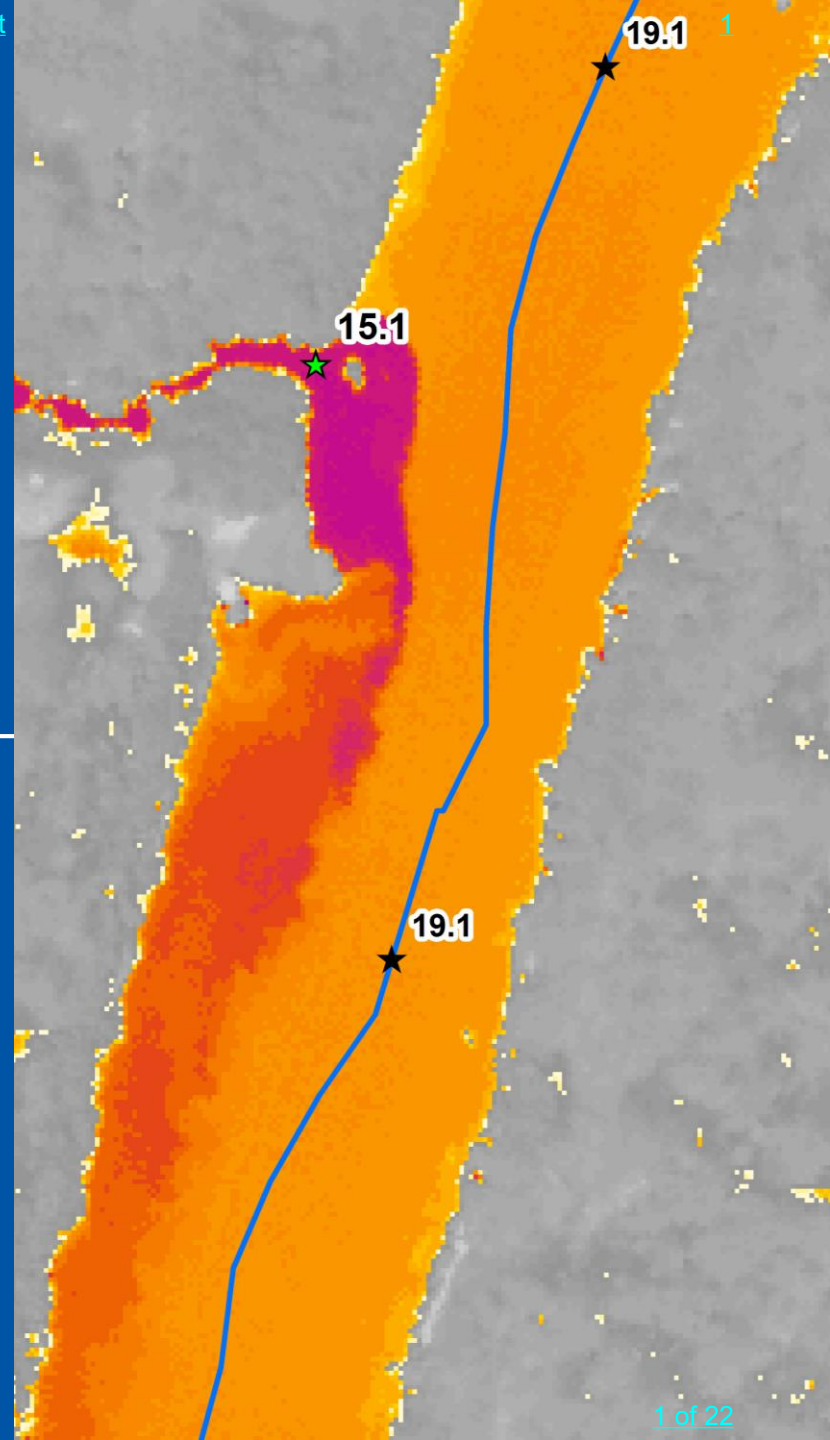


# Science to Conservation Outcomes: Cold Water Refugia

Jessica Speed  
Mat-Su Basin Salmon  
Habitat Partnership



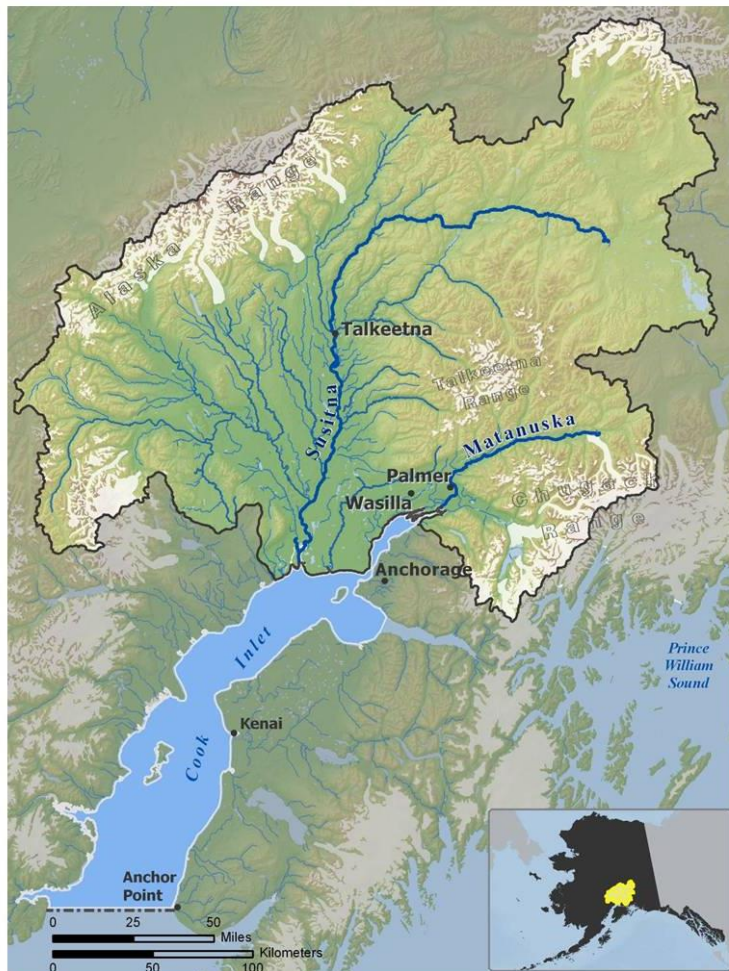
Sue Mauger  
Cook Inletkeeper



# Mat-Su salmon

PARTNERSHIP

## Working for thriving fish, healthy habitats, and vibrant communities in the Mat-Su Basin



## WHO WE ARE

Alaska Department of Commerce, Community and Economic Development • Alaska Department of Environmental Conservation • Alaska Department of Fish and Game • Alaska Department of Natural Resources • Alaska Department of Transportation & Public Facilities • Alaska Center for the Environment • Alaska Outdoor Council • Alaska Pacific University • Alaska Railroad Corporation • Alaska Salmon Alliance • Alaska Trails • AlaskaChem Engineering • Alaskans for Palmer Hay Flats • Aquatic Restoration & Research Institute • Bureau of Land Management • Butte Area Residents Civic Organization • Chickaloon Village Traditional Council • City of Palmer • ConocoPhillips Alaska, Inc • Cook Inlet Aquaculture Association • Cook Inletkeeper • Eklutna Tribal Conservation District • Environmental Protection Agency • Envision Mat-Su • Fishtale River Guides • Glacier Ridge Properties • Great Land Trust • HDR Alaska, Inc • Innovative Funding • Knik River Watershed Group • Knik Tribal Conservation District • Matanuska River Watershed Coalition • Matanuska-Susitna Borough • Mat-Su Anglers • Mat-Su Conservation Services • Mat-Su Trails & Parks Foundation • Montana Creek Campground • National Marine Fisheries Service • National Park Service • Native Village of Eklutna • Natural Resources Conservation Service • Palmer Soil and Water Conservation District • Pioneer Reserve • Pound Studio • SAGA • Sierra Club • Susitna River Coalition • Sustainable Design Group • The Conservation Fund • The Nature Conservancy • The Wildlifers • Three Parameters Plus, Inc • Trout Unlimited • Turkey Red • Tyonek Tribal Conservation District • United Cook Inlet Drift Association(UCIDA) • United Fishermen of Alaska • Upper Susitna Soil & Water Conservation District • U.S. Army Corps of Engineers • U.S. Fish and Wildlife Service • U.S. Geological Survey • U.S. Forest Service • Wasilla Soil and Water Conservation District

# Conserving Salmon Habitat in the Mat-Su Basin



## The Strategic Action Plan of the Mat-Su Basin Salmon Habitat Partnership 2013 Update



### **Addendum to the 2013 Partnership Strategic Action Plan - June 2019**

*\*Organizational Priorities Updated June 2021*

#### **ORGANIZATIONAL PRIORITIES (2021-2022)**

- 1) Encourage the development and dissemination of relevant science-based information.**
  - The Science and Data Committee will focus on providing technical expertise within and outside the partnership, including identifying and filling data gaps, inform and establish best practices, and interpreting research on Basin habitat impacts.
  - Identify and implement strategy to improve dissemination of relevant science-based information.

#### Conservation Strategies #3. Climate Change

Objective 3.1: Comprehensive Baseline and Monitoring for Stream Temperatures.

By 2021, comprehensive baseline and monitoring program for stream temperatures exists to track regional changes while thermal heterogeneity of salmon habitat and the impacts on salmon are assessed within priority Mat-Su Basin watersheds. Data should meet minimum data collection standards for Alaska, site information should be posted on the Alaska Online Aquatic Temperature Site (AK OATS) and temperature data should be available to the public by request or archived online.

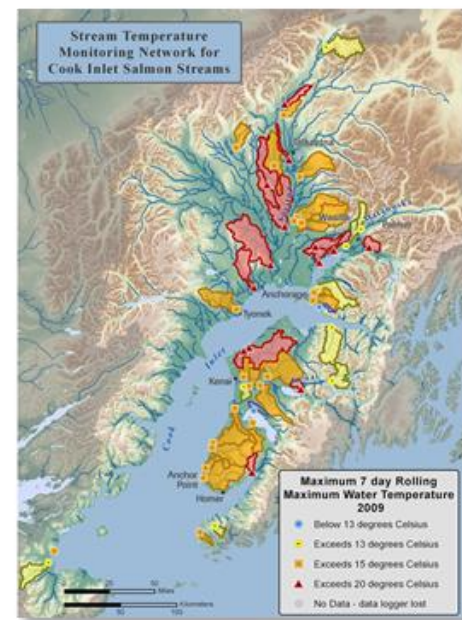
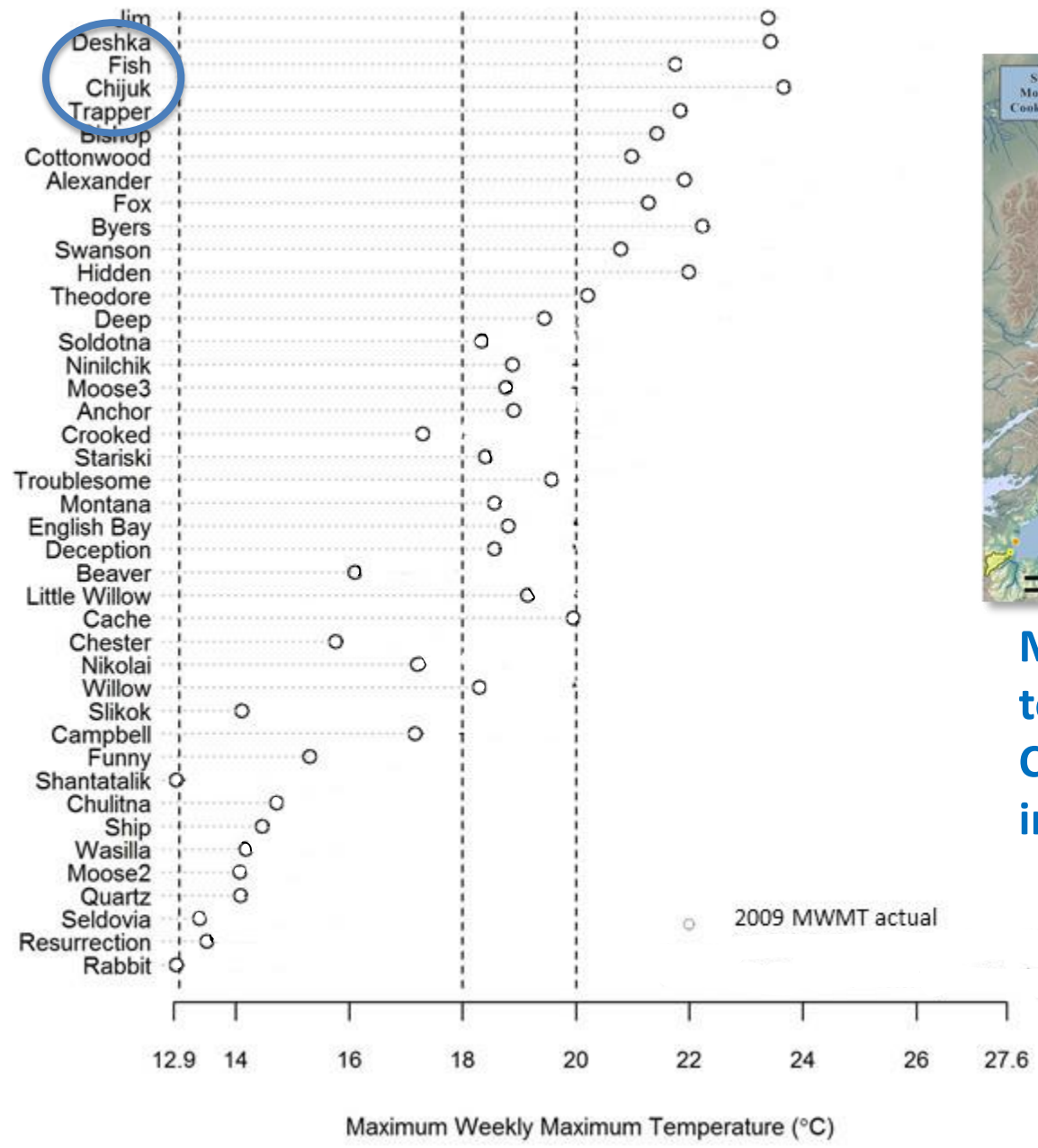
Objective 3.2: Integrate Climate Change into Priorities.

By 2023, integrate climate change vulnerability into habitat conservation strategies and prioritizations.

## Science Takeaways (2008 – present)

- 1. The Deshka and Big Lake systems are some of the warmest watersheds in the Mat-Su Basin and are likely to get warmer.**
- 2. The Mat-Su Basin has some of the warmest watersheds in the state based on available data.**
- 3. In 2019, warm stream temperatures blocked adult migration and had negative effects on juvenile growth in the Deshka.**
- 4. We have identified cold-water refugia in the Deshka and Big Lake basin which may be critical habitat for salmon in warming watersheds.**

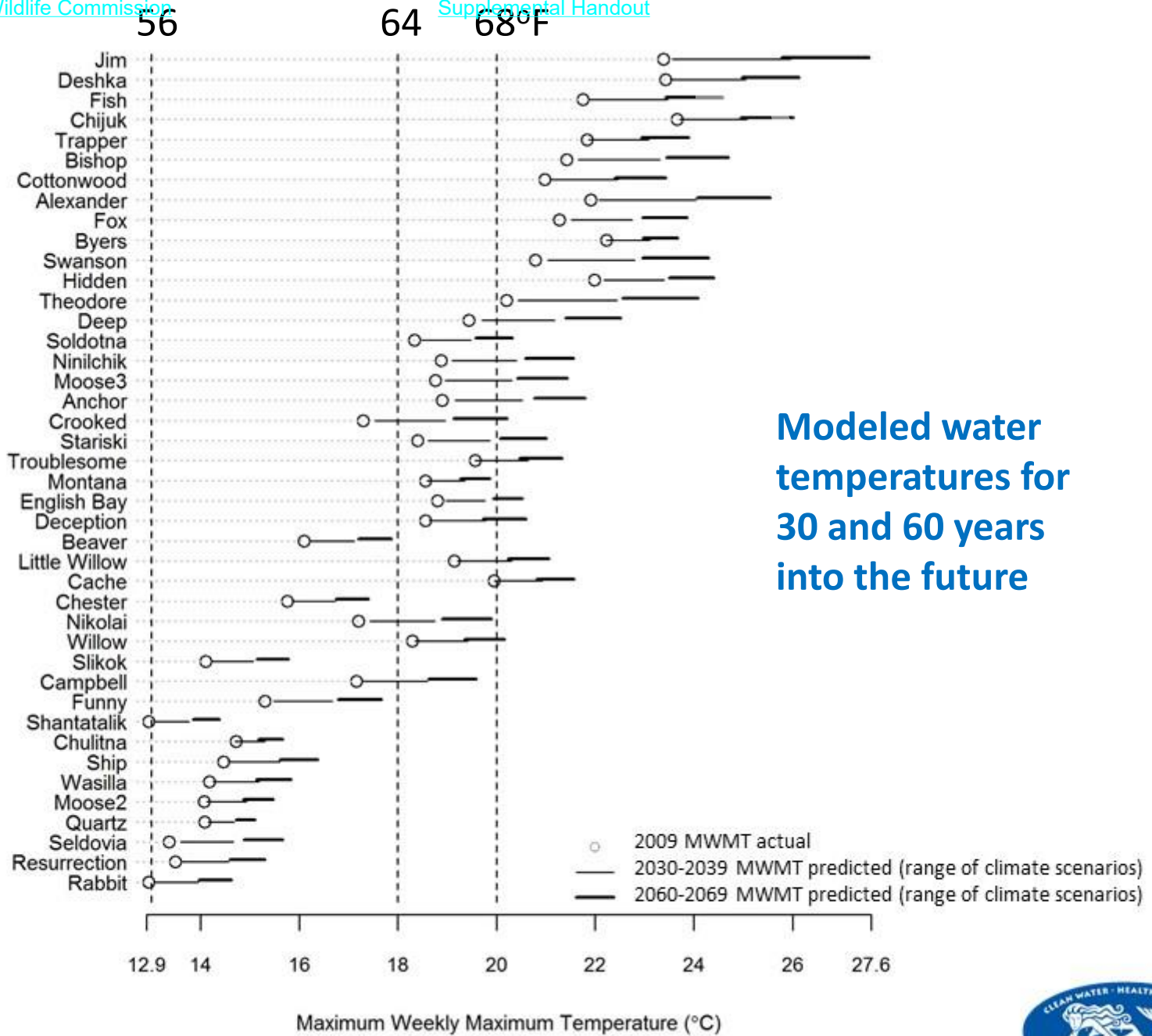
non-glacial Cook Inlet streams



Measured water temperatures in Cook Inlet streams in 2009



non-glacial Cook Inlet streams

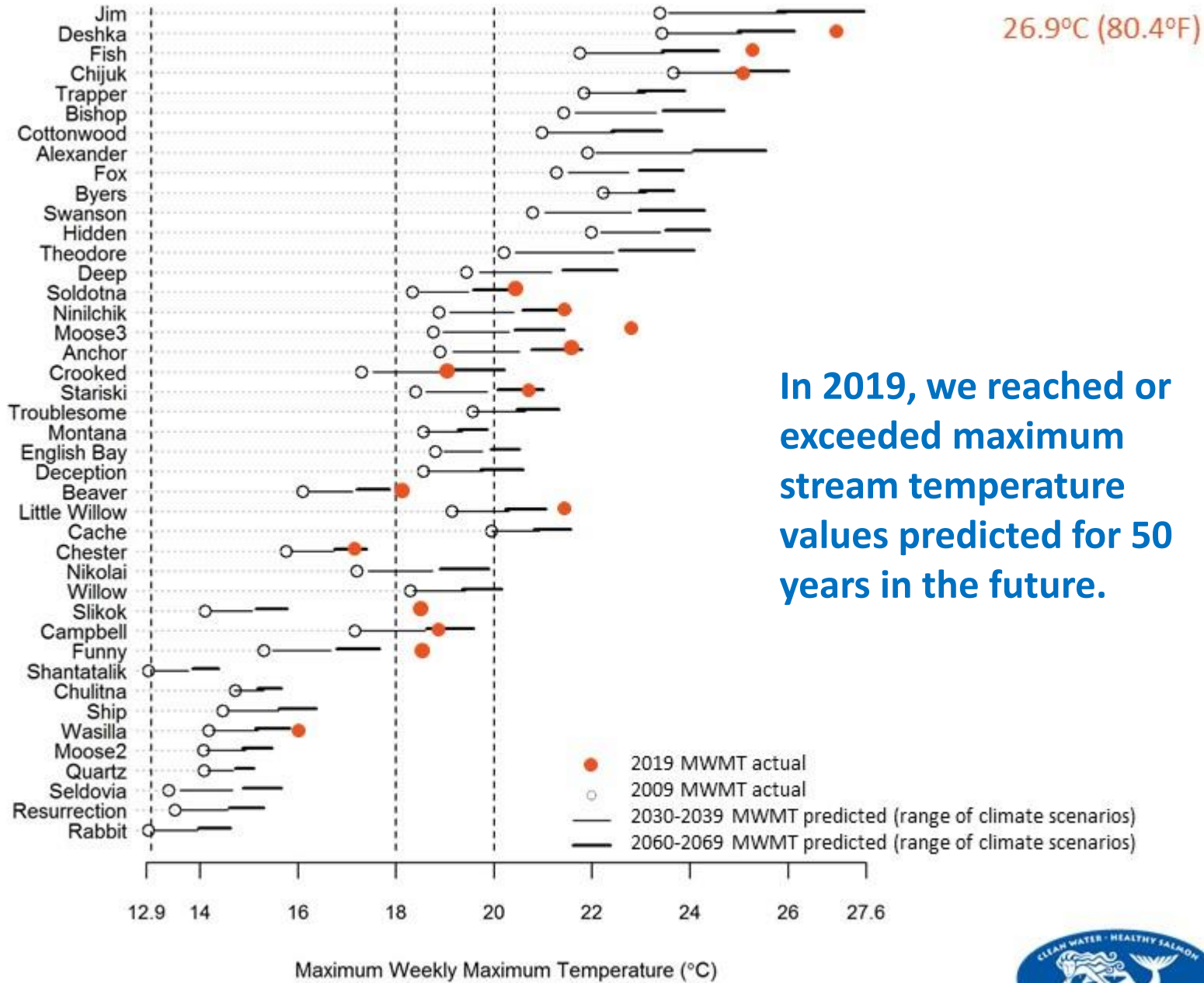


Modeled water temperatures for 30 and 60 years into the future



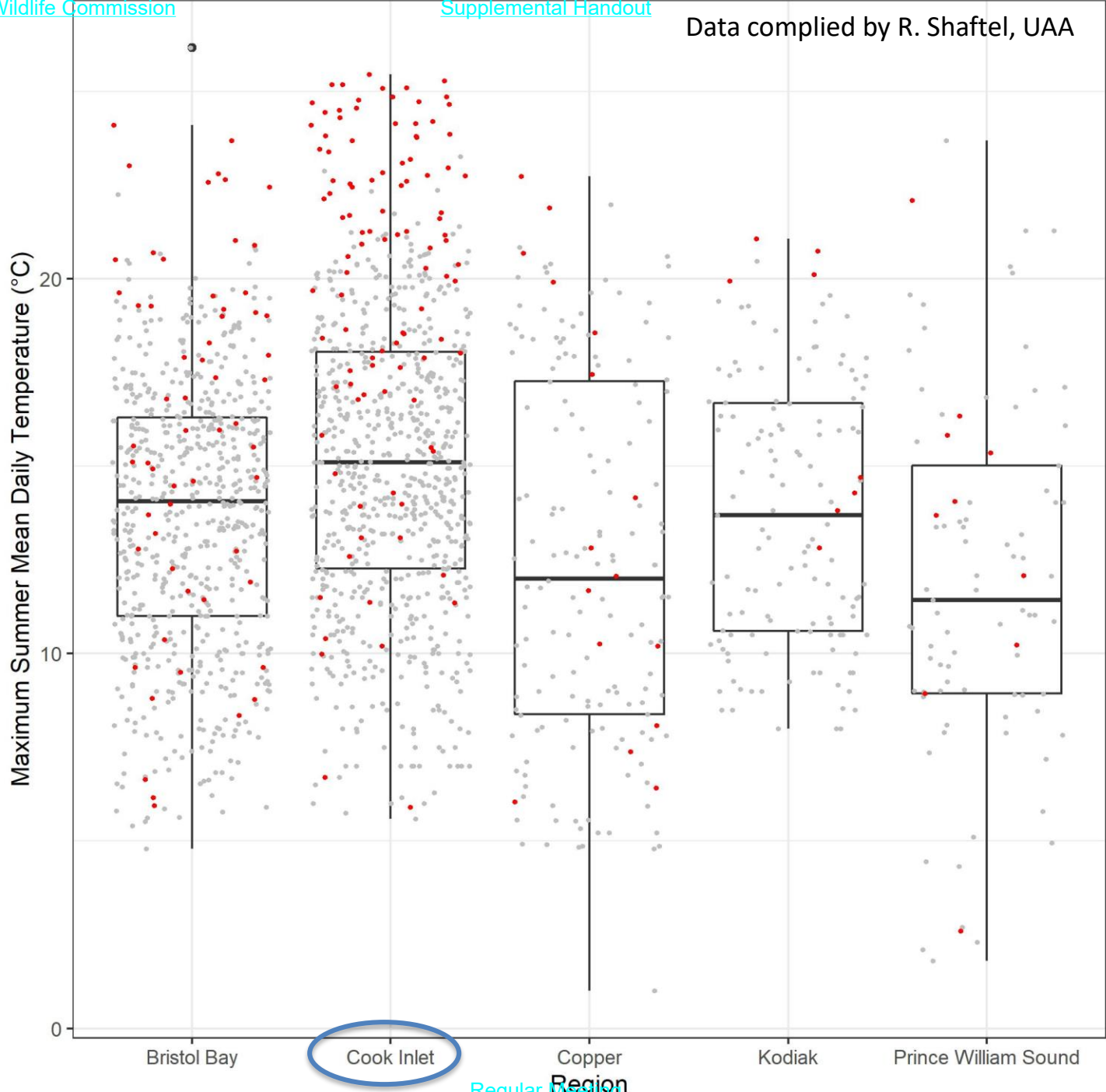


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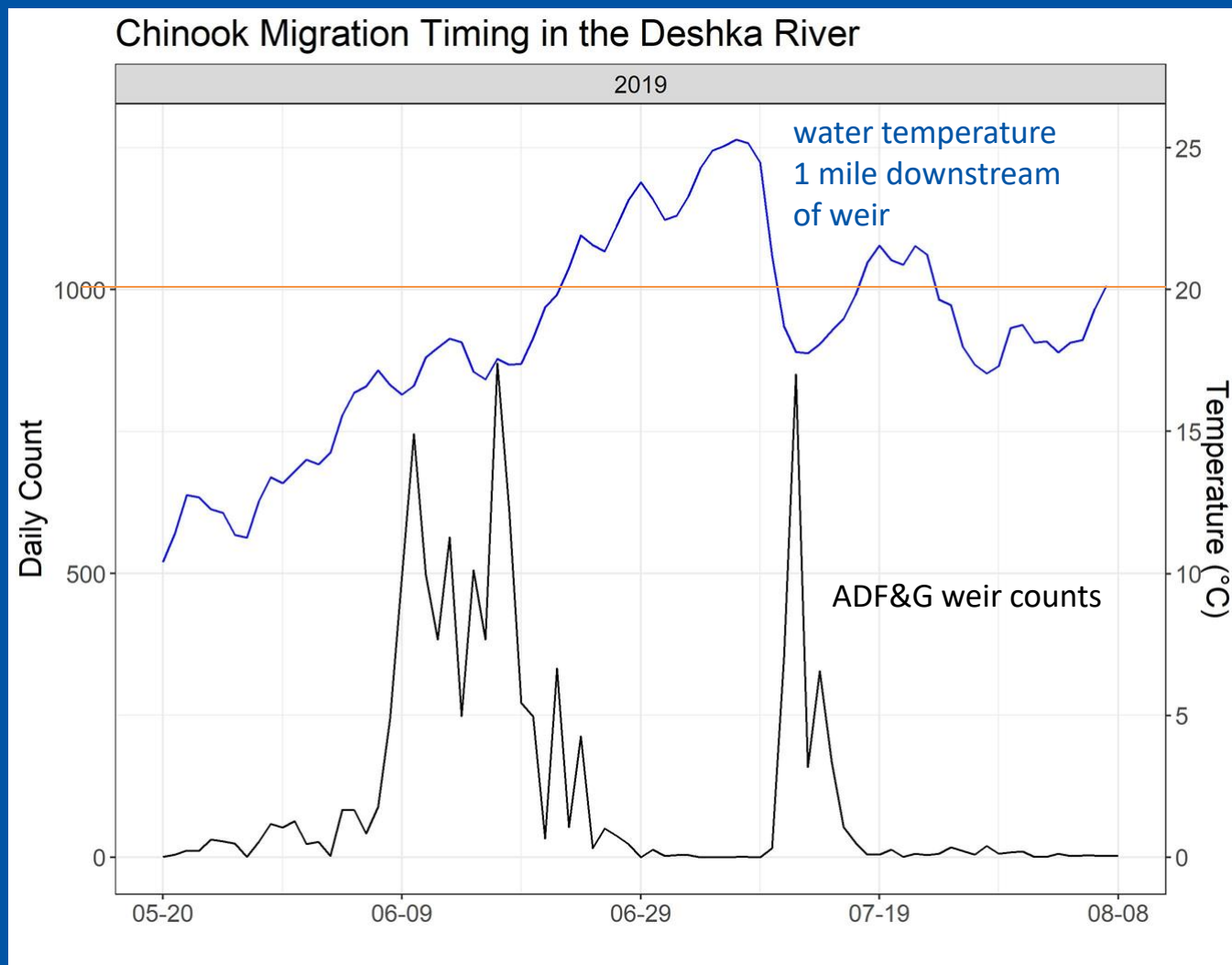


Mauger, S., R. Shaftel, J. C. Leppi, and D. J. Rinella. 2017. Summer temperature regimes in southcentral Alaska streams: watershed drivers of variation and potential implications for Pacific salmon. Canadian Journal of Fisheries and Aquatic Sciences 74:702-715

Data compiled by R. Shaftel, UAA

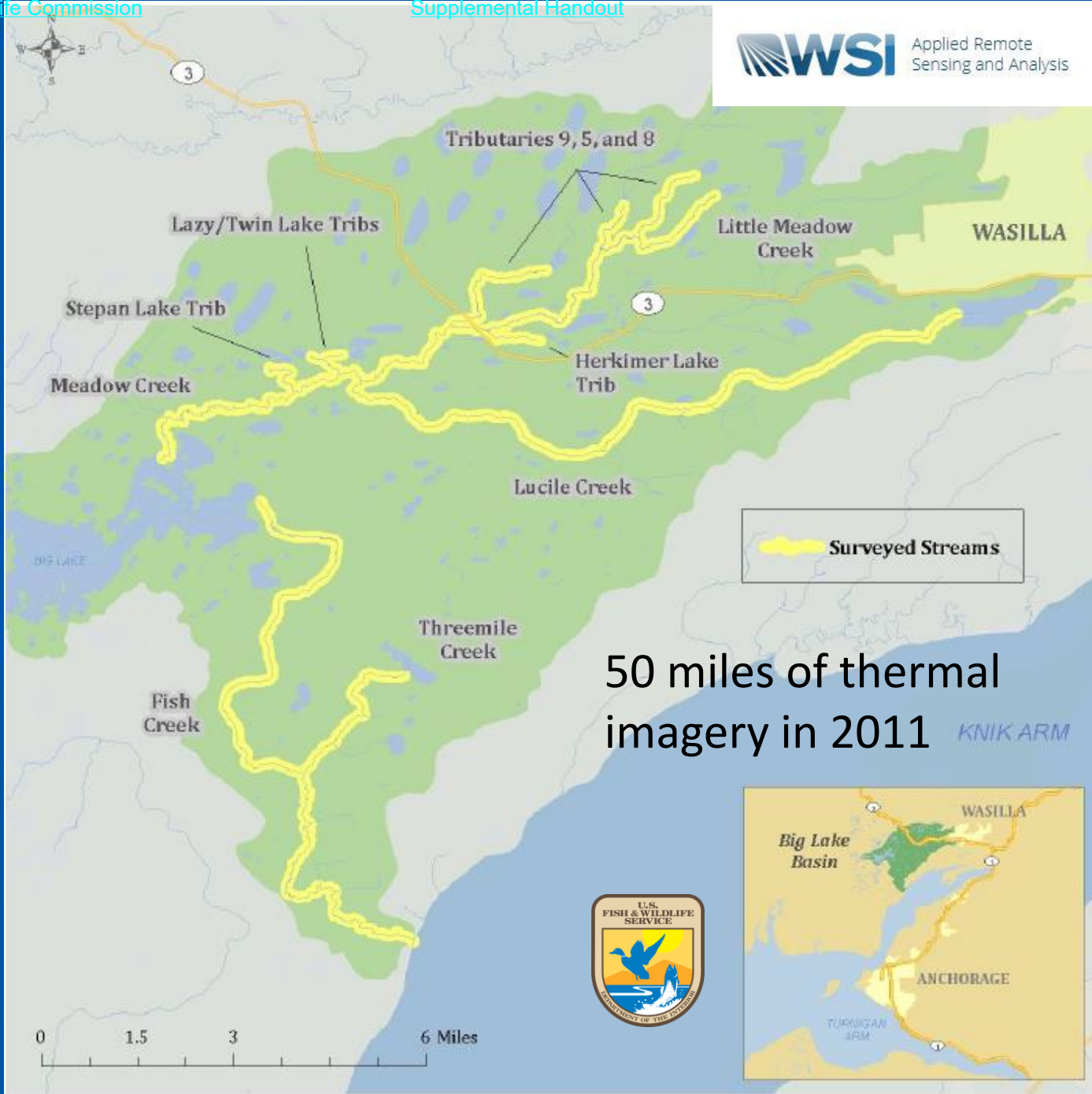


**In 2019, warm stream temperatures blocked adult migration and had negative effects on juvenile growth in the Deshka.**



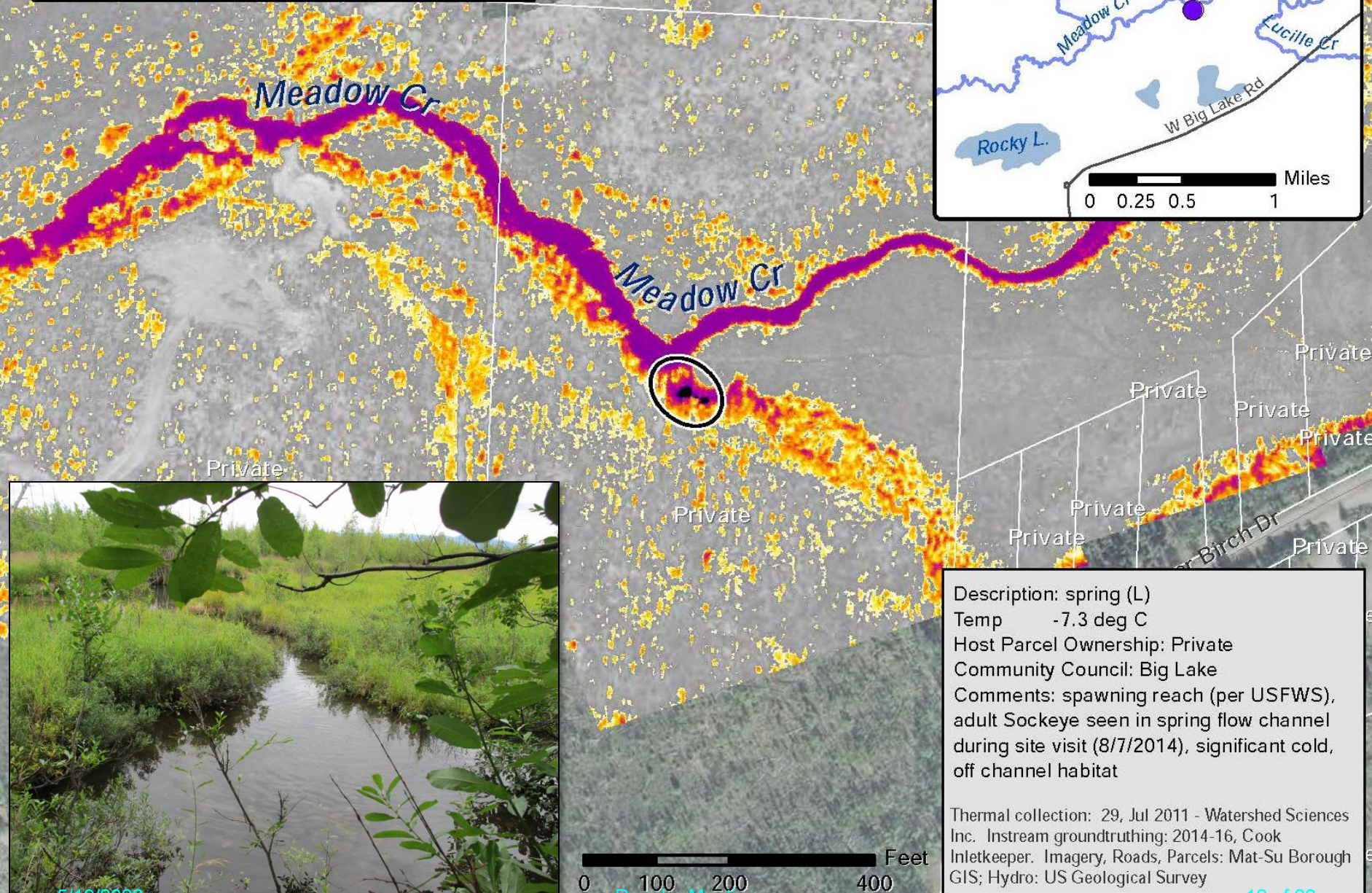
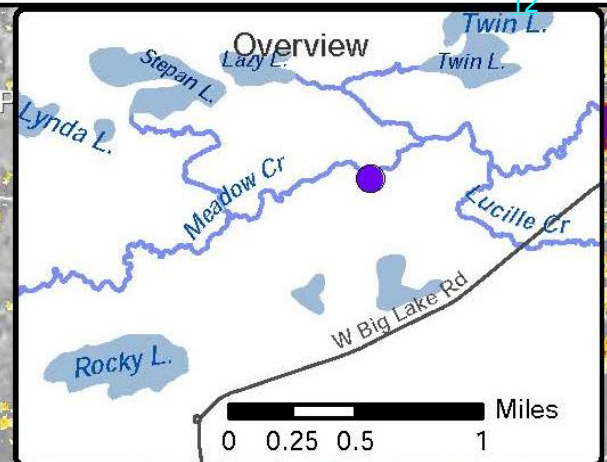
## Science Takeaways (2008 – present)

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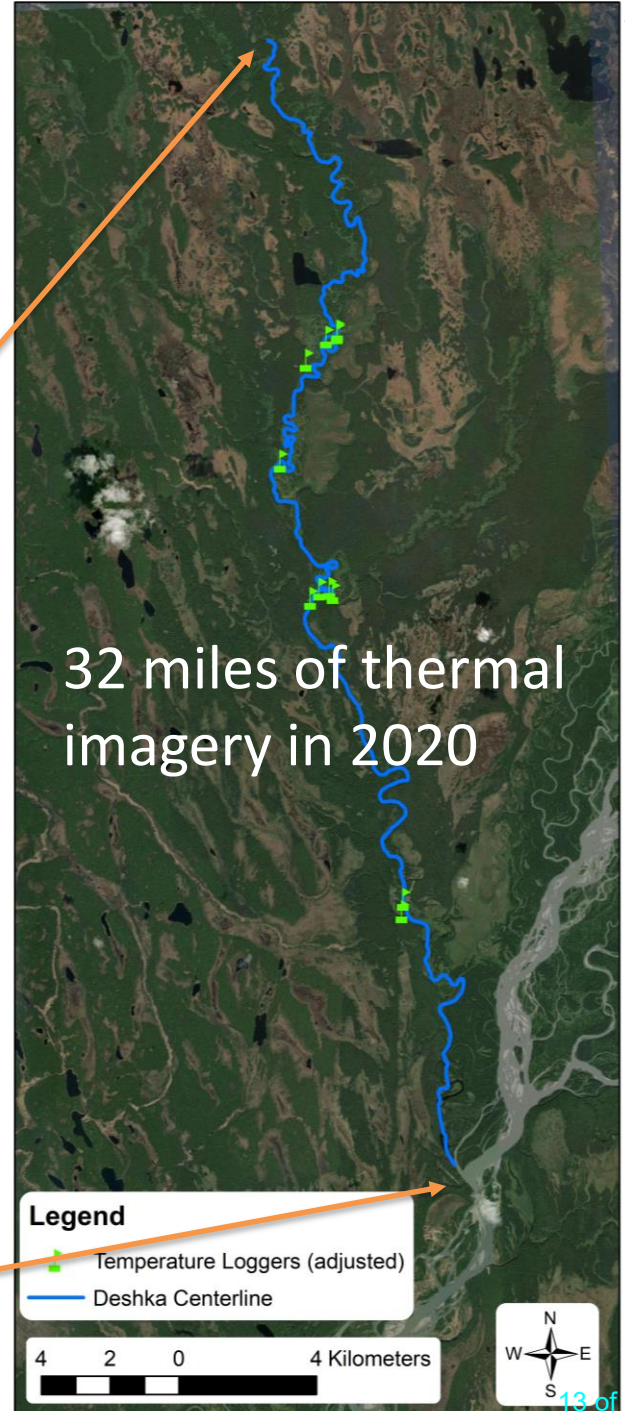
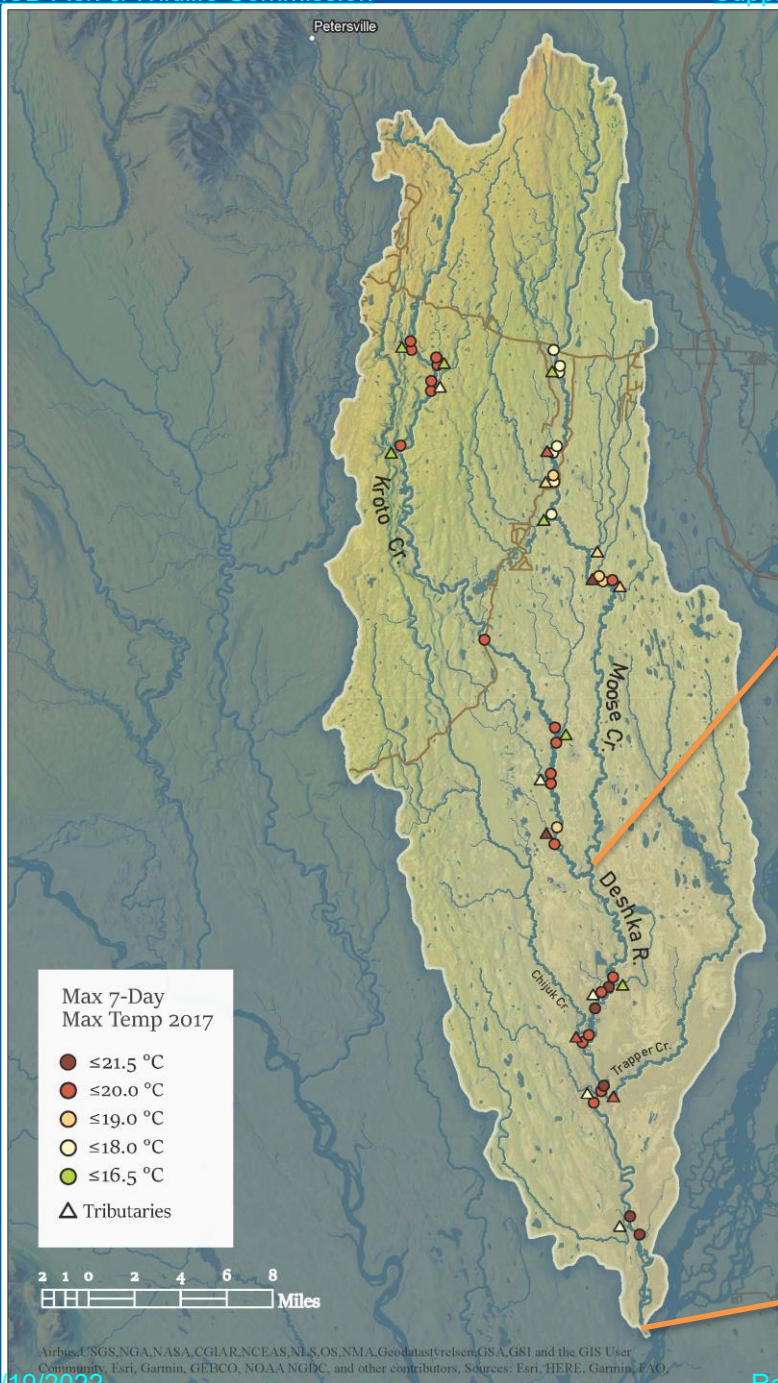
50 miles of thermal imagery in 2011 *KNIK ARM*

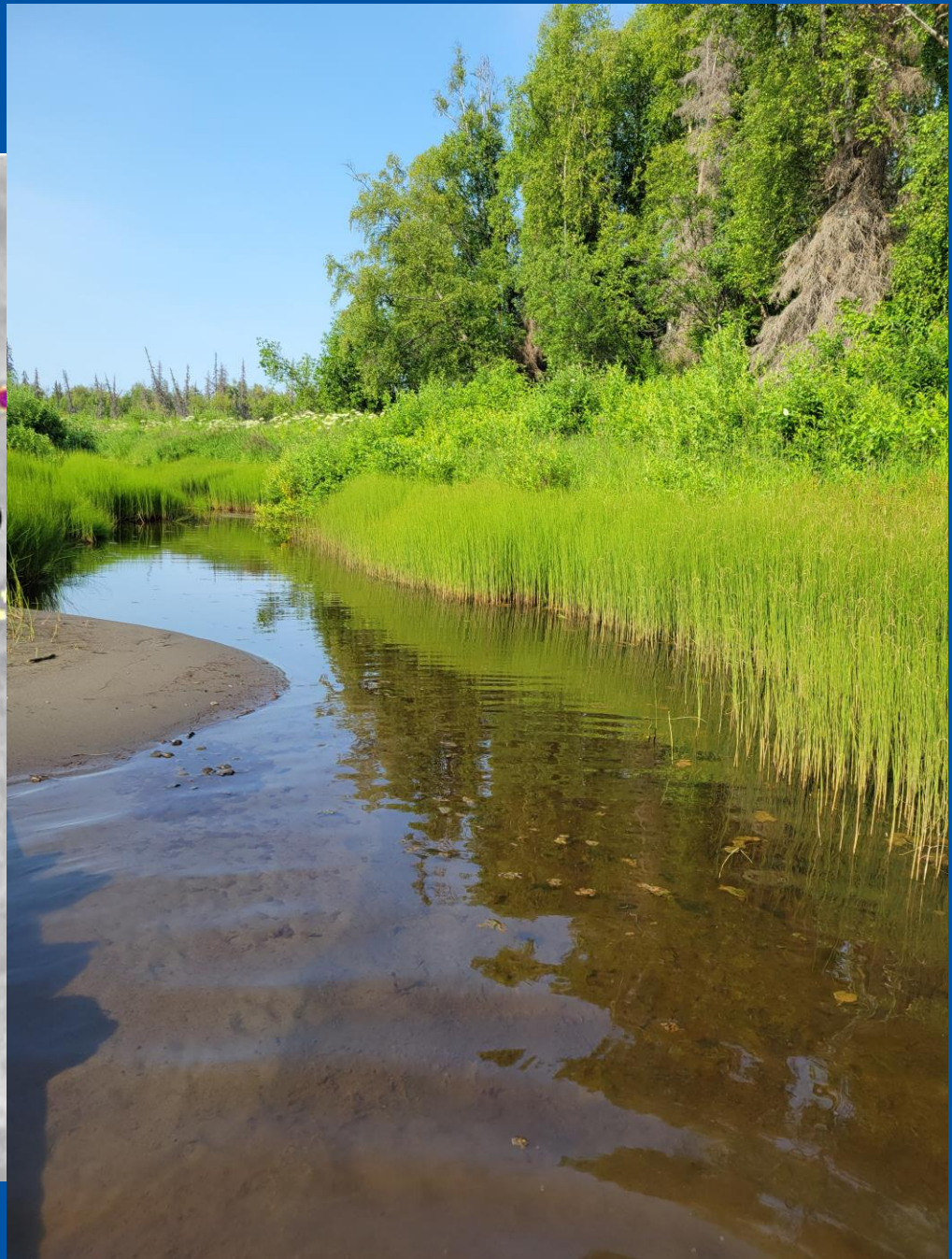
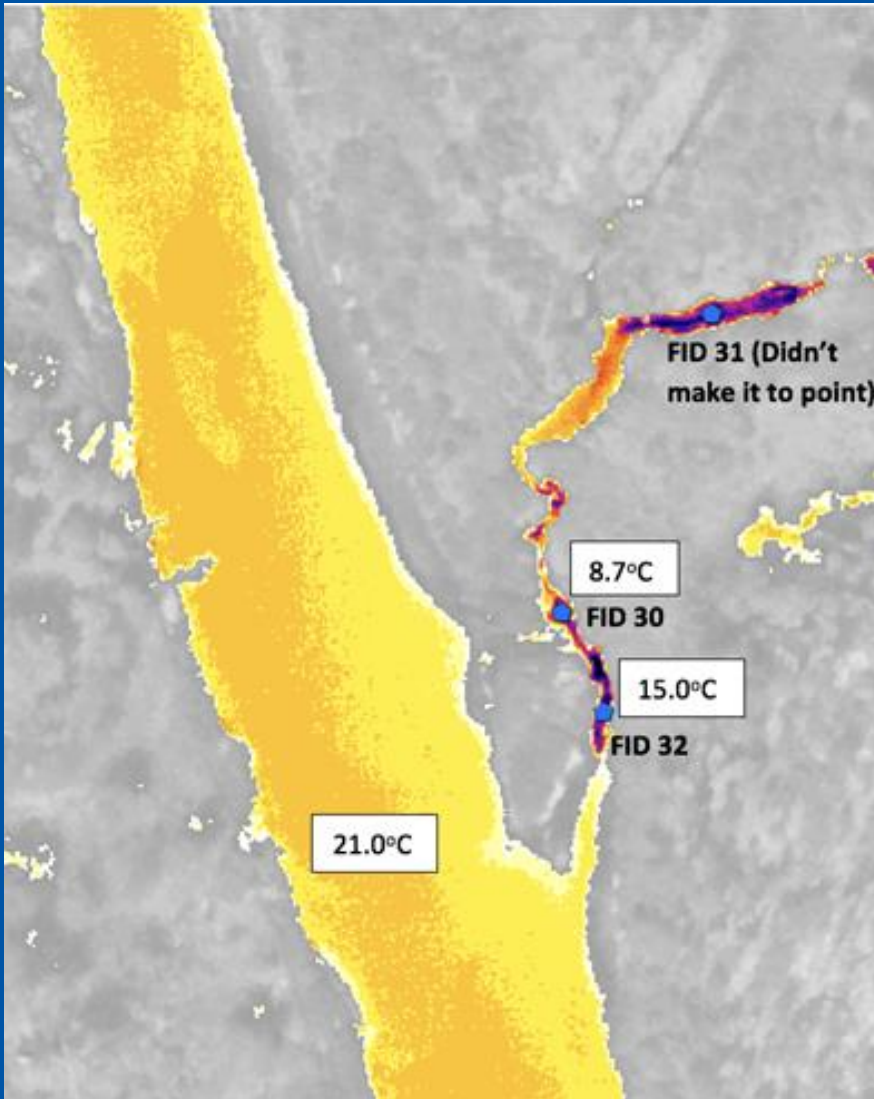
# Meadow Creek 16



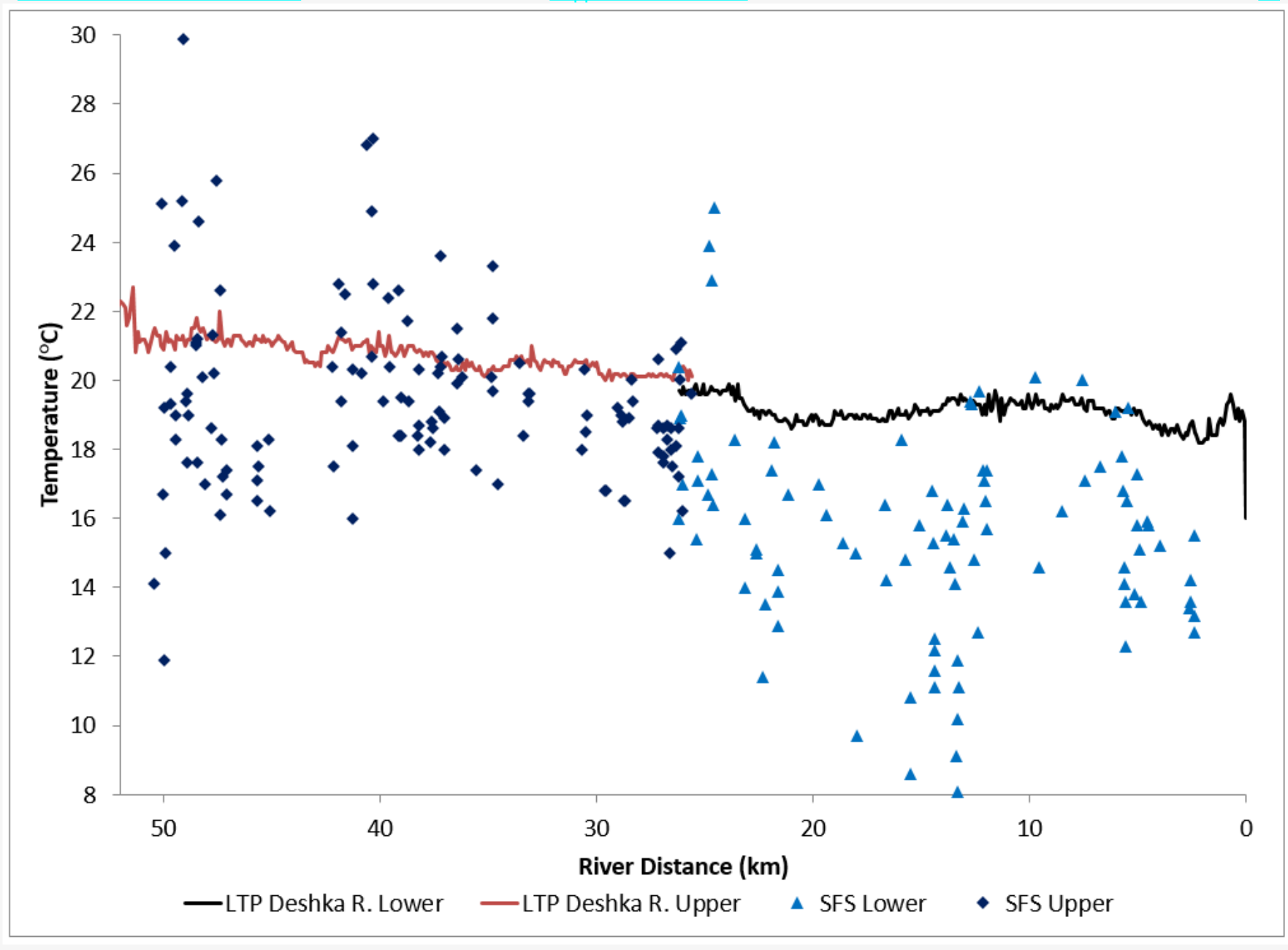
Description: spring (L)  
 Temp -7.3 deg C  
 Host Parcel Ownership: Private  
 Community Council: Big Lake  
 Comments: spawning reach (per USFWS), adult Sockeye seen in spring flow channel during site visit (8/7/2014), significant cold, off channel habitat

Thermal collection: 29, Jul 2011 - Watershed Sciences Inc.  
 Instream groundtruthing: 2014-16, Cook  
 Inletkeeper: Imagery, Roads, Parcels: Mat-Su Borough GIS; Hydro: US Geological Survey







Longitudinal temperature profile and mean water temperature of significant features along the Deshka River: July 4<sup>th</sup>, 2020.



**More than 250 inflows**

**Land Ownership:**

**84.3% is State owned**

**13.7% is MSB land**

**2% is private (119 parcels)**

Technical Data Report – Deshka River Thermal Infrared Imagery Project, NV% Geospatial, Jan 2021



Video by Ben Rich, USFWS  
Deshka River, 2021

# Science Takeaways

1. The Deshka and Big Lake systems are some of the warmest watersheds in the Mat-Su Basin and are likely to get warmer.
2. The Mat-Su Basin has some of the warmest watersheds in the state based on available data.
3. In 2019, warm stream temperatures blocked adult migration and had negative effects on juvenile growth in the Deshka.
4. We have identified cold-water refugia in the Deshka and Big Lake basin which may be critical habitat for salmon in warming watersheds.

## Recent Discussions (November 2021 – April 2022)

**Do we have land management tools to conserve this habitat diversity for salmon resilience?**

### **Version 3: Draft MSB Fish & Wildlife Questions to DNR/ADFG for June 2 Special Meeting**

**Gray highlighted text = Additional Question compared to Version 1 draft questions.**

**Green** or **Yellow** highlighted text: Change from Version 2 as follows:

- **Underlined text** = additions to Version 2.
- **[Bracketed Text]** – Version 2 text that should be deleted.
- **Blue** Highlights = other note.

#### **A. On water reservation applications**

1. Please provide a list of water reservation applications (both applied for and granted) for Mat-Su Borough lakes and streams and a map of application locations. Please include links to the DNR's website or electronic copies of the items below for each application:

name of the applicant or certificate holder

- applicant name(s)
- name and coordinates of the water body
- date of application filing (priority date)
- Land Administrative System (LAS) number
- reason(s) for water reservation requested
- amounts of water requested by month or season
- current status of all applications received (e.g. original application requests still pending adjudication, applications in the process of adjudication, applications pending 10-year reviews, and applications in the process of 10-year reviews)
- for applications granted: original date granted and amounts of water and any special conditions
- for applications granted: date 10-year reviews were initiated, completed, or other status
- copies of original and amended reservations of water applications
- copies of certificates of reservations
- copies of findings of fact and conclusions of law
- final results documentation for 10-year reviews

Are there any active plans to post any of this information (not currently available) online for convenient public use (see also section D)?

2. What criteria are used to determine **the order** **[in which]**

- in which new reservation of water applications pending adjudication (in the DNR water rights backlog) are addressed for a decision? (see also Section C)
- in which existing granted reservations of water undergo a 10-year review? (see also section C)
- of whether a new application pending adjudication is fully adjudicated versus fully adjudicating a 10-year review of an existing reservation of water (see also section C)?

3. Does DNR have plans to better educate the public regarding water use laws, and regulations for all uses? It seems many Alaskans don't understand the rules governing water use categories (withdrawals, diversions, impoundments, and reservations) including temporary water uses. It also appears the public at large may not be aware of and understand the various public participation processes and opportunities that are available for public input relating to adjudicating different types of water uses and how to be apprised of these opportunities, and ultimately outcomes. Presently, there seems to be relatively few competing demands for water, but as time goes on competition will surely increase. (see also section D).

- Does ADF&G's AS 16.05.841 (fishway required) and .871 (protection of fish and game) relate to any of these processes?

#### **B. On water reservation application approvals**

1. What are the primary reasons that water reservation applications take so long to be adjudicated and receive a final DNR decision?
2. Why have water reservation requests for streams such as Wasilla Creek and Sheep Creek (near Caswell) been waiting for a decision for over a decade?
3. What can be done to expedite and improve the application adjudication decision processes?
4. The seasonal flows of Cottonwood Creek are much greater than the amount allowed to be reserved for fish in the approved certificate of reservation. How does DNR determine that only a portion of a specific percentage of historic stream flow is needed for fish / wildlife / recreation on a stream [with very limited] for streams [flows] like Cottonwood Creek?
5. How can we, the MSB FWC, and the public contribute to improving this process and the decision outcomes?

#### **C. On reservation of water certificate 10-year reviews**

- Issued water reservation certificates are, under the law, required to be reviewed by DNR at least every 10 years.
  1. Why wasn't this requirement implemented until 2020?
  2. Are there streams that have had certificates for less than 10 years being reviewed? If so, please provide an example or examples of [are there] provisions in the certificate of reservation [allowing] for conducting a review of the reservation in a shorter time frame?
  3. What goes into DNR's decision of which ISF certificates to review? [Context: It is not acting chronologically. For example, Cottonwood Creek certificate was granted in July 1988 and reviewed in February 2022 but Willow Creek near Willow was granted in May [2017] 1988 and reviewed in September 2021, less than 6 years after getting its

certificate.] [Based on this correction of 2017 to 1988, consider removing the “Context Statement”]]

4. Why is DNR starting 10-year reviews of certain Mat-Su Valley streams when there are [many] other Mat-Su streams whose reservations of water applications (and other types of water?) rights have not yet been adjudicated (see also section B)?

5. When doing a 10-year reservation of water review, why is it that DNR only resets water allocations for the reservation of water at the same level or at a lesser level?

- Does DNR assess if this equal or lessening pattern will have a likelihood of negatively impacting the original reason for a specific reservation of water allocation?
- Is the 10-year decision to reduce the flow unilateral (by DNR), or is the certificate holder or other state agency contacted and conferred with before the decision is made?
- Based on information collected during the DNR review, could DNR provide a third option of recommending to the certificate holder that they apply for a greater amount of flow?

#### **D. Public Involvement Process**

1. If DNR wants to have a robust and meaningful public comment on instream flow reservations, could the comment period be longer?

- Why is the public review period so brief? How can interested parties obtain a longer comment period?[Context: For example, the last review on Cottonwood Creek did not provide enough time for this Commission to comment -- even though we meet mostly on a monthly basis during the fall / winter / spring. A comment period of 60 days would allow us to receive notice, discuss the review at a public meeting, and provide DNR with comments]
- Does the small number of public comments received by DNR about instream flow reservations for both Willow Creek and Cottonwood Creek raise any concerns with DNR that perhaps better public notice **combined with more public education outreach** and more time to respond should be standard operating procedures? Why or why not?

2. Per Section A item requests, would it be possible to provide a link to the complete original application (and amended application if applicable), a copy of the certificate(s), and the original DNR decision in the public notice?

- [Context: To avoid the need for the Fish & Wildlife Commission to have to request the information each time, and to provide better overall information to the

public, it would be useful to either have a link in or a document associated with the public notice with this information. Note suggestions in Section A]

3. How can we and other interested parties, including the public, make sure we are apprised of all reservation of water public comment opportunities (original application adjudications, 10-year reviews, etc.) and other related water rights actions in both the Mat-Su and for other parts of Alaska?

4. Has DNR evaluated the merits of reestablishing the Alaska Resources Water Board (AS 46.15.190) to help better represent and take into account the perspectives of all public water stakeholder interests, including to facilitate better public participation in development and support of constructive regulation and statutory proposals?

DRAFT