Identification of Cold Water Inputs and Their Use By Juvenile Coho Salmon in the Big Lake Watershed

Joshua Ashline
US Fish and Wildlife Service
Anchorage Field Office
Thermal Imagery by:
Watershed Sciences Corvallis, OR

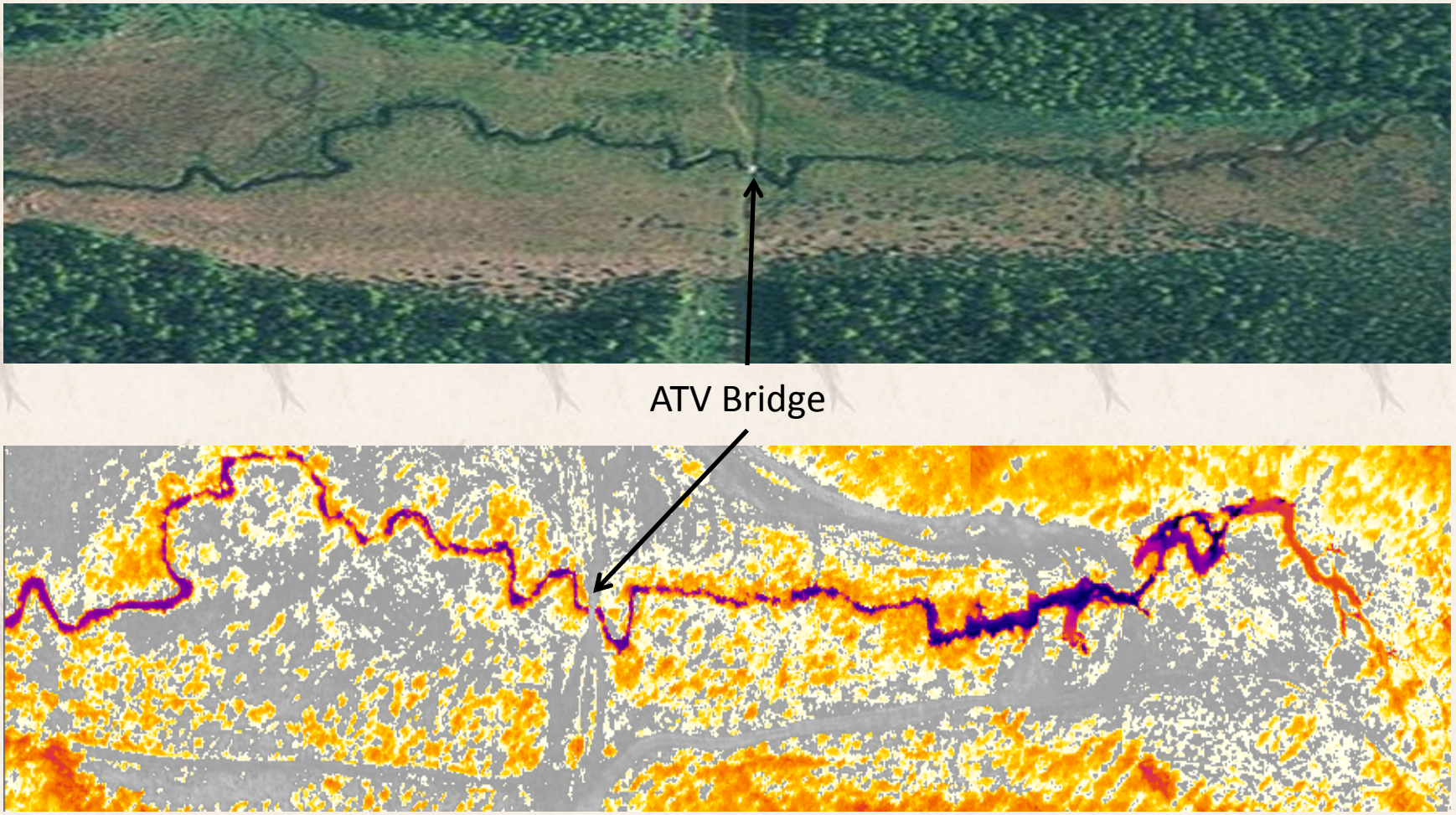
Background

- Seasonal habitat limitations.
  - Rearing habitat versus overwintering habitat.
- Factors causing distributions and movements?

Study Area

Figure Courtesy of Watershed Sciences

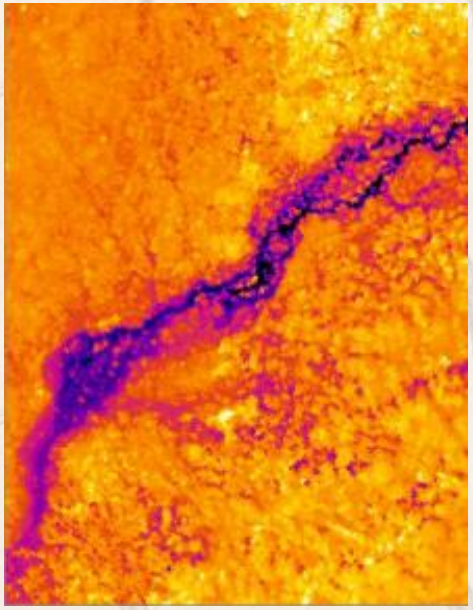
Thermal Infrared



Lucille Creek, Alaska

Objectives

- Identify significant cold water inputs using thermal infrared imagery.
- Compare juvenile coho abundances above and below cold water inputs.

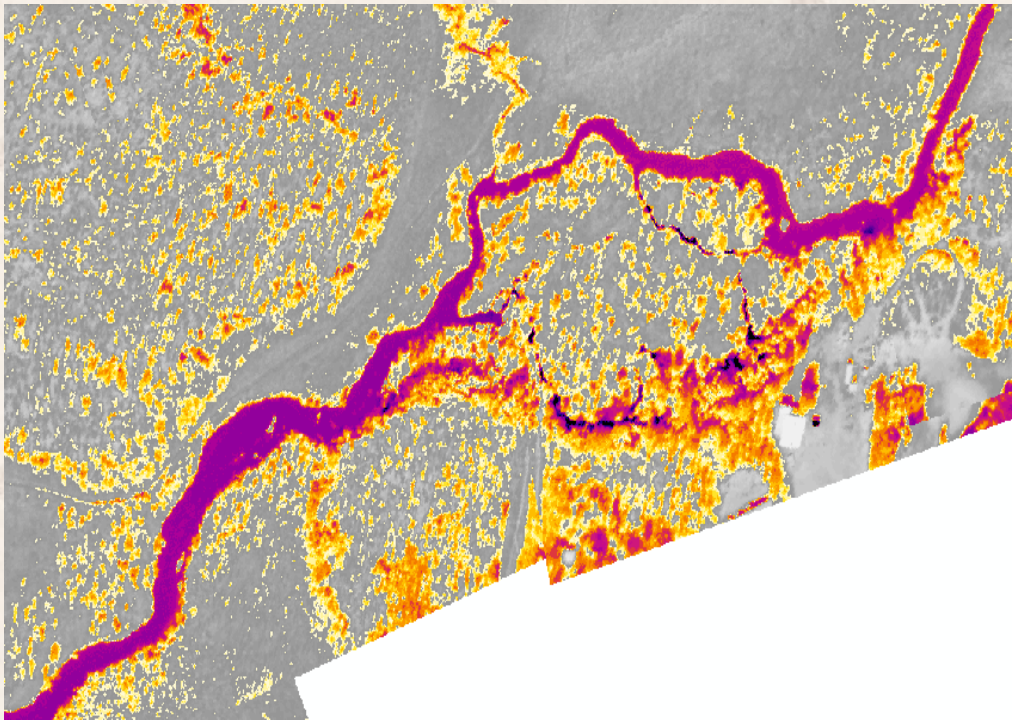


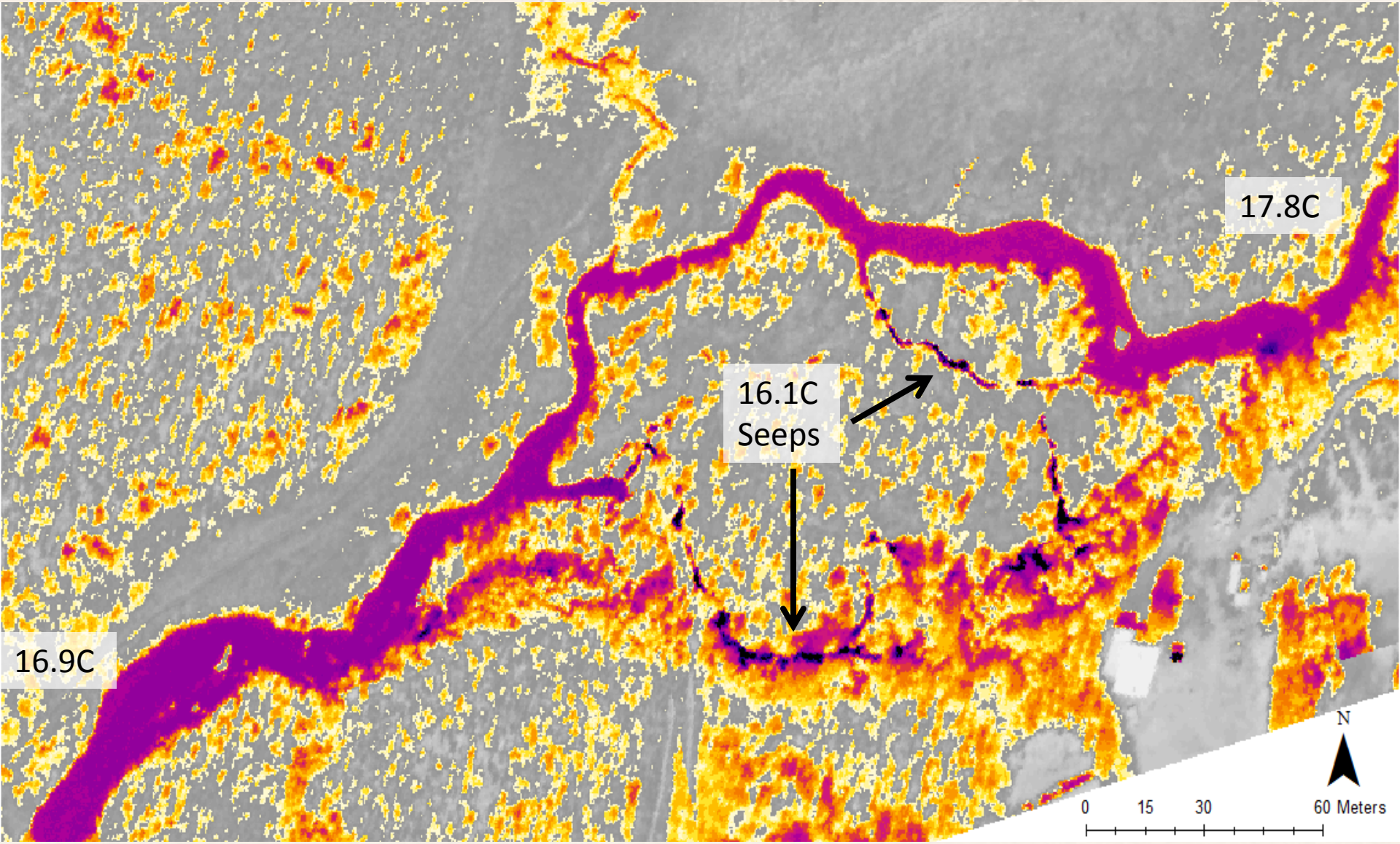
Meadow Creek: Side Channel Seeps

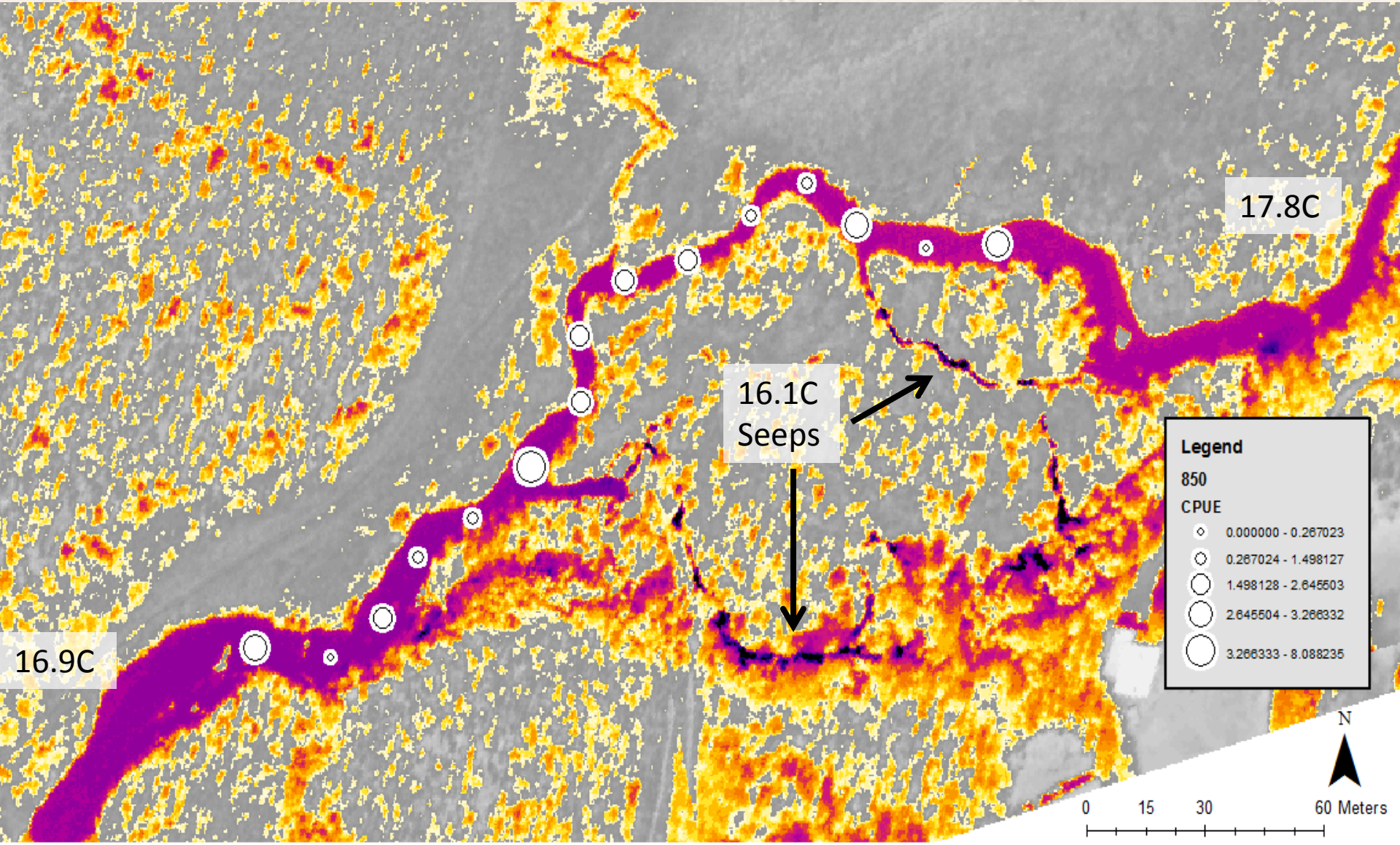
Meadow Creek: Side Channel Seeps

Orthophoto

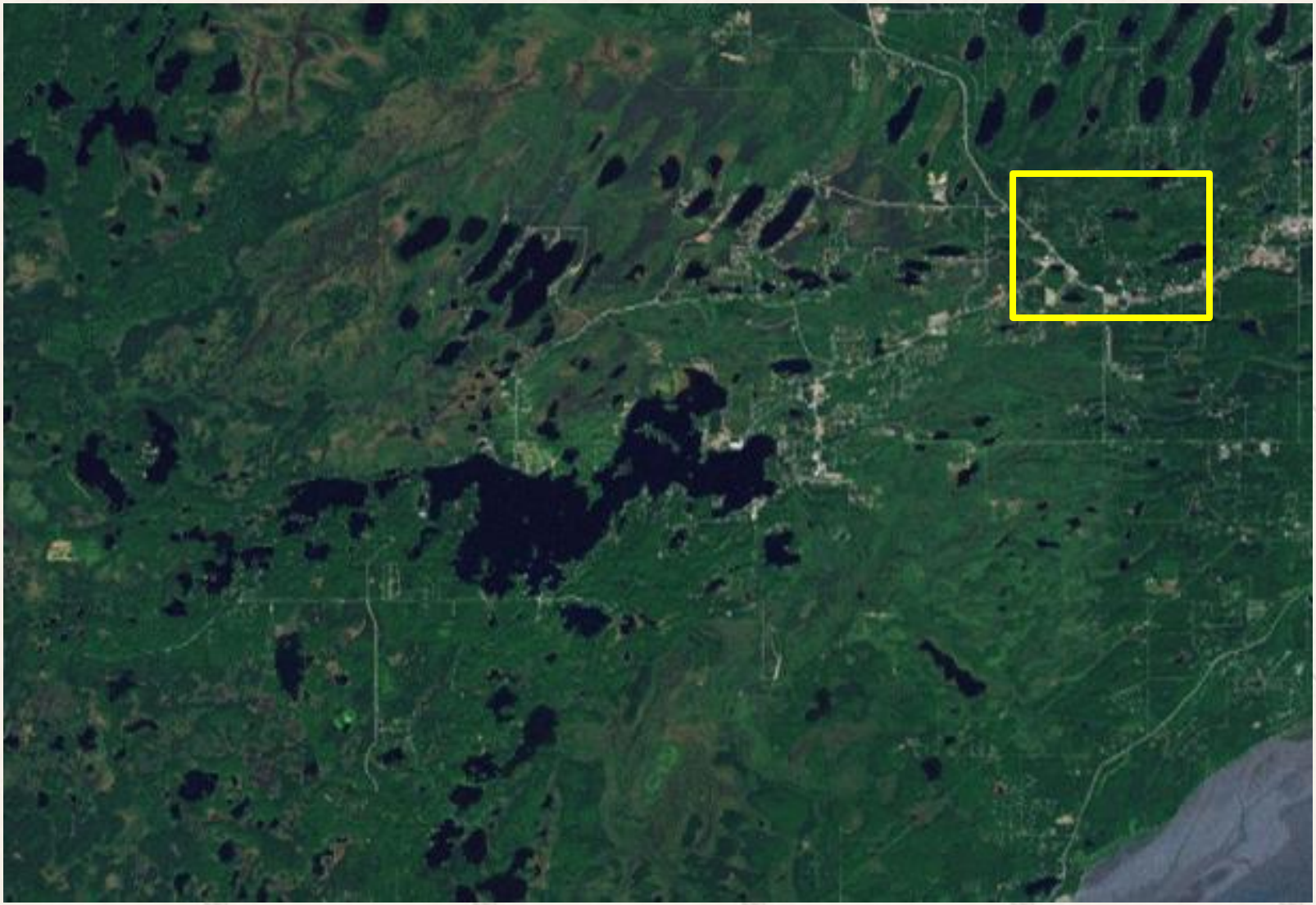
Thermal Infrared



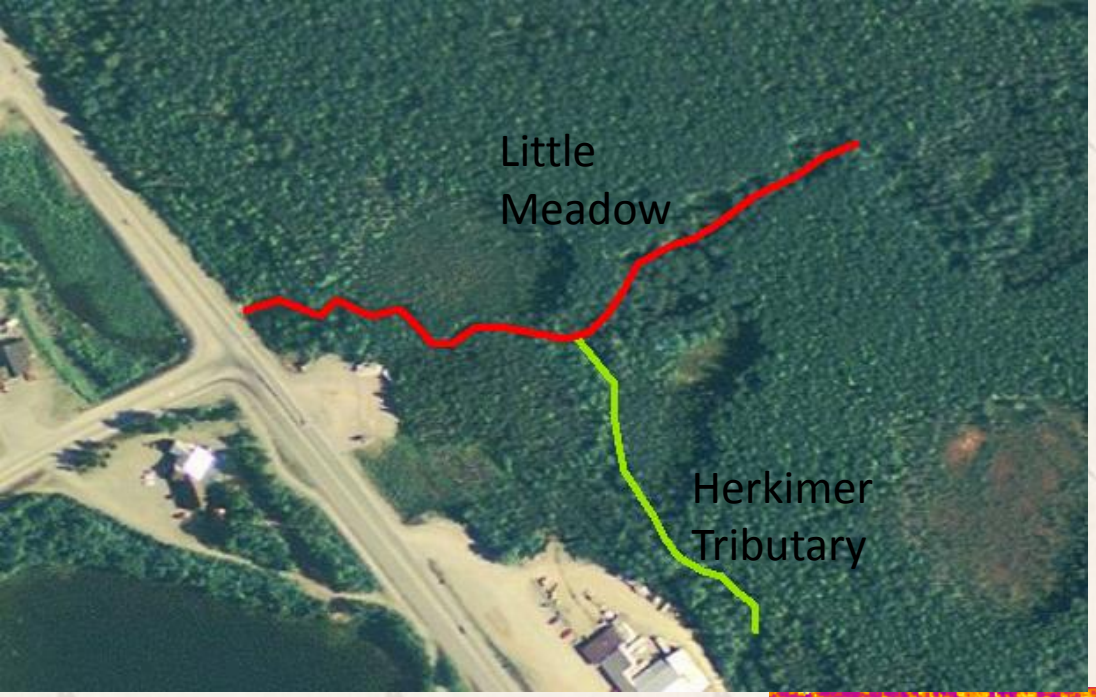

17.8C
16.1C
Seeps
16.9C
N
0
15
30
60 Meters


17.8C
16.1C
Seeps
16.9C
Legend
850
CPUE
0.000000 - 0.267023
0.267024 - 1.498127
1.498128 - 2.645503
2.645504 - 3.266332
3.266333 - 8.088235
N
0
15
30
60 Meters

Little Meadow Creek: Colder Tributary Confluence

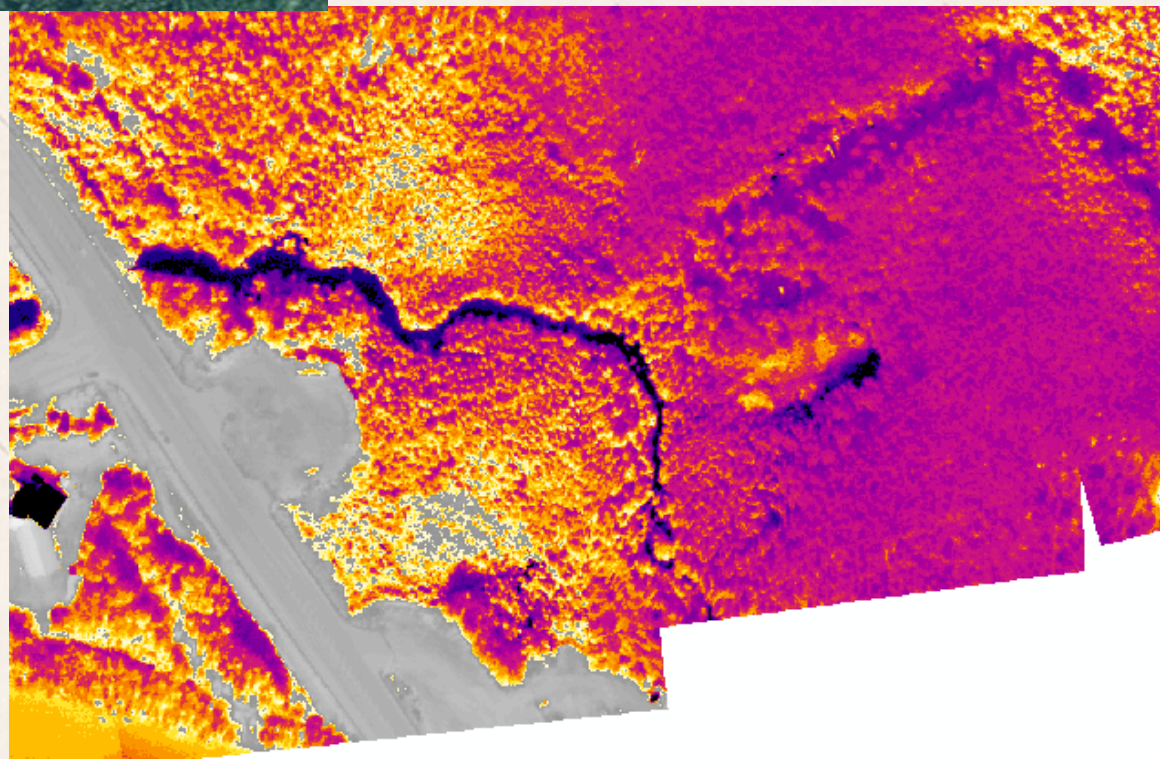


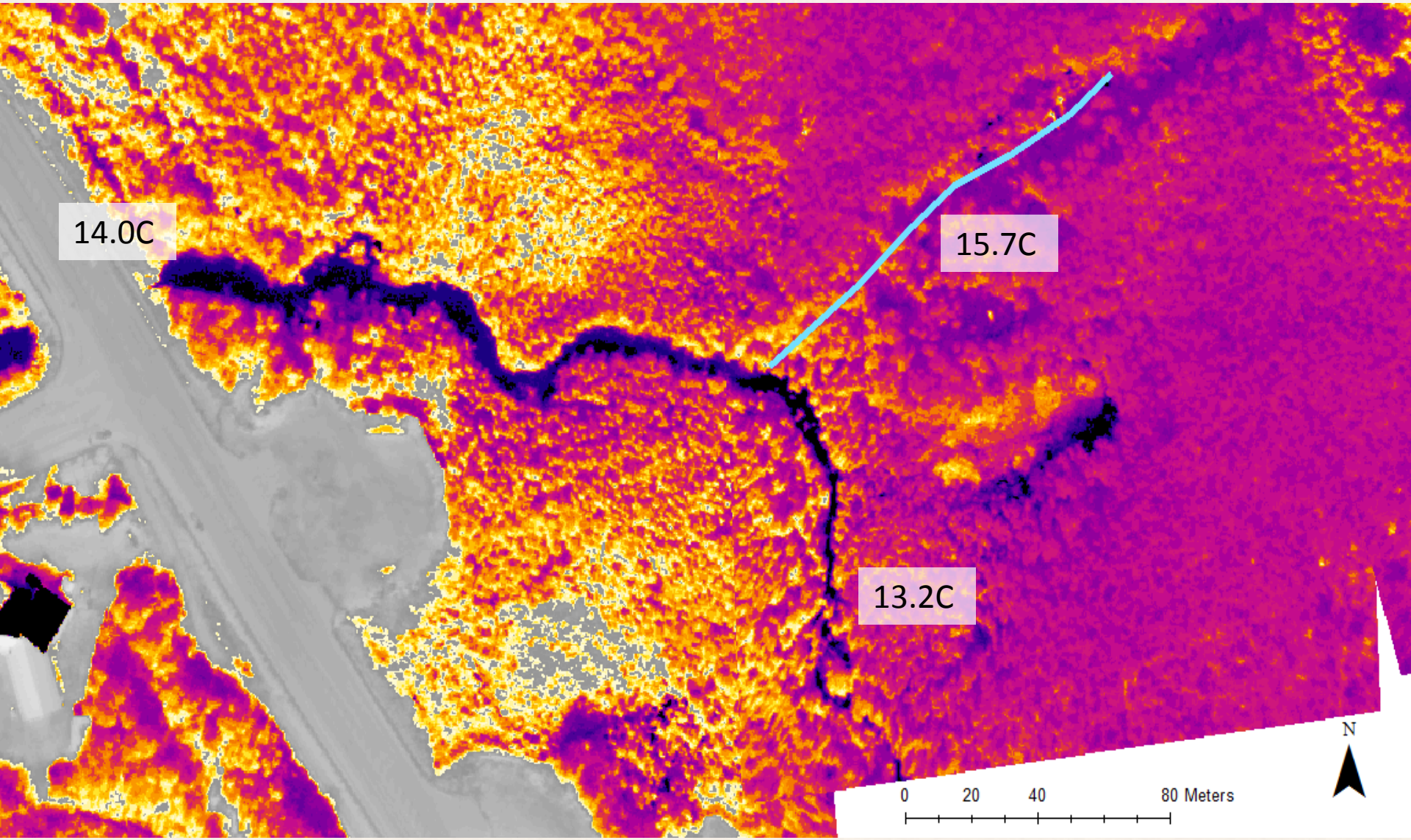
Little Meadow Creek: Colder Tributary Confluence

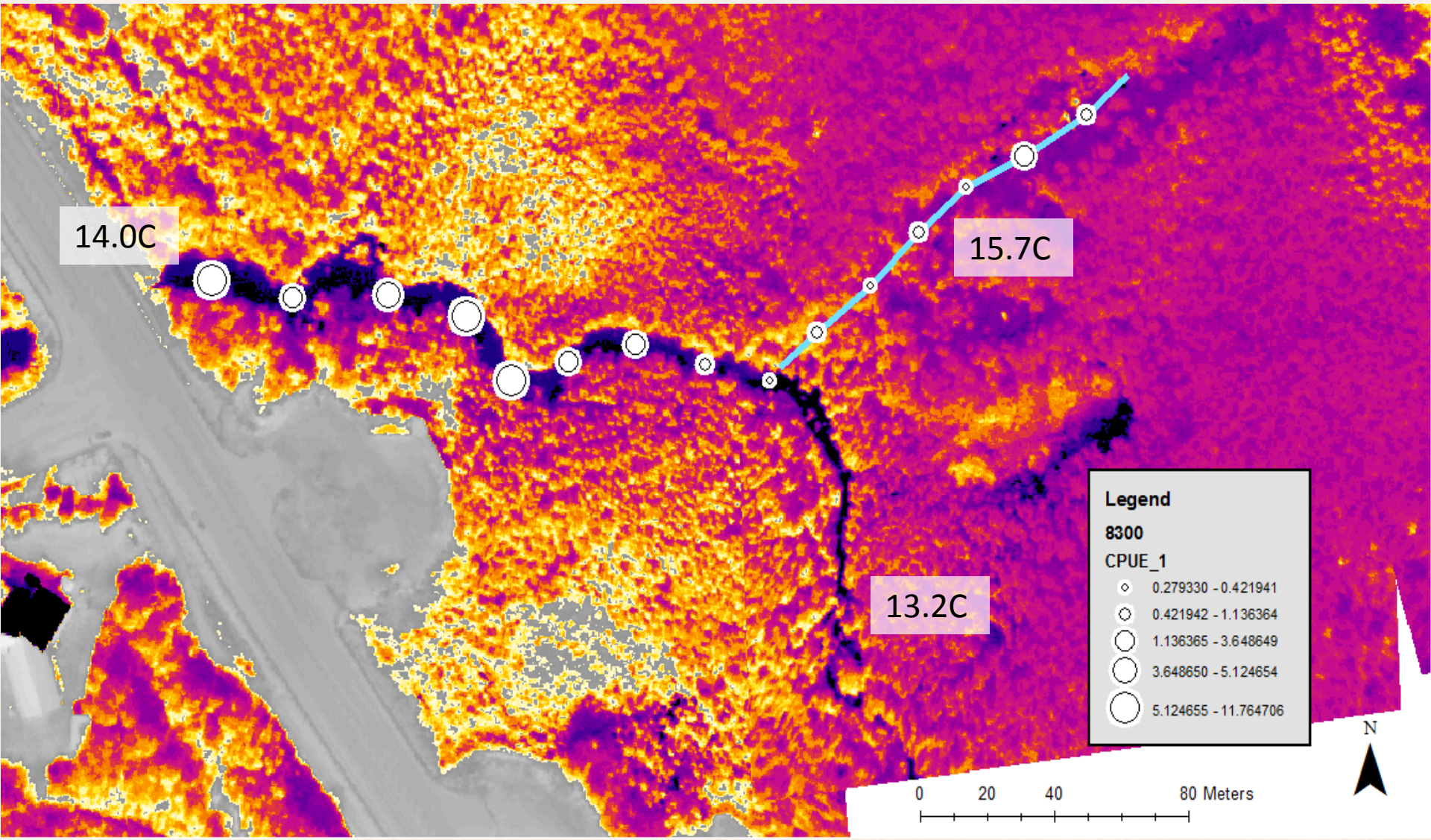


Orthophoto

Thermal Infrared

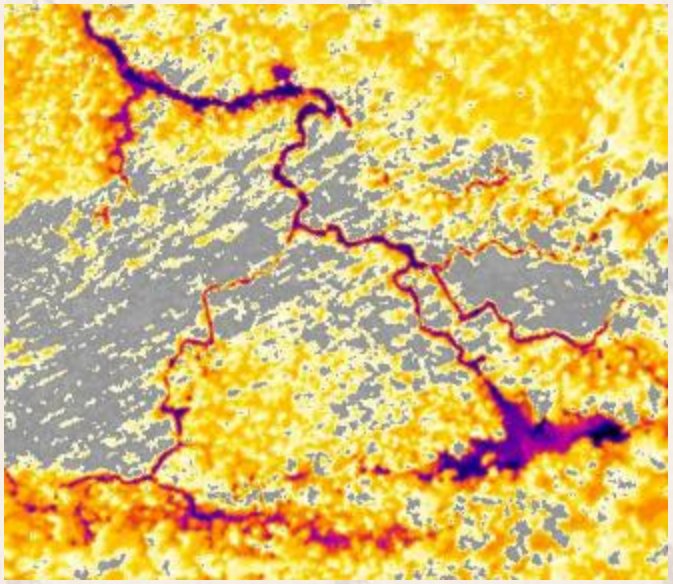



14.0C
15.7C
13.2C
N
0
20
40
80 Meters


14.0C
15.7C
13.2C
Legend
8300
CPUE_1
0.279330 - 0.421941
0.421942 - 1.136364
1.136365 - 3.648649
3.648650 - 5.124654
5.124655 - 11.764706
N
0
20
40
80 Meters

Results

- 57 significant cooling areas were identified in the form of tributaries, springs, and seeps.
- Coho abundance appears higher near cold water inputs.



Future Direction

Acknowledgements

- Partners
  - Alaska Pacific University
- Thermal Imagery
  - Watershed Sciences
- Field Crew
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