Bridging the Gap -

Creating proactive management and conservation tools

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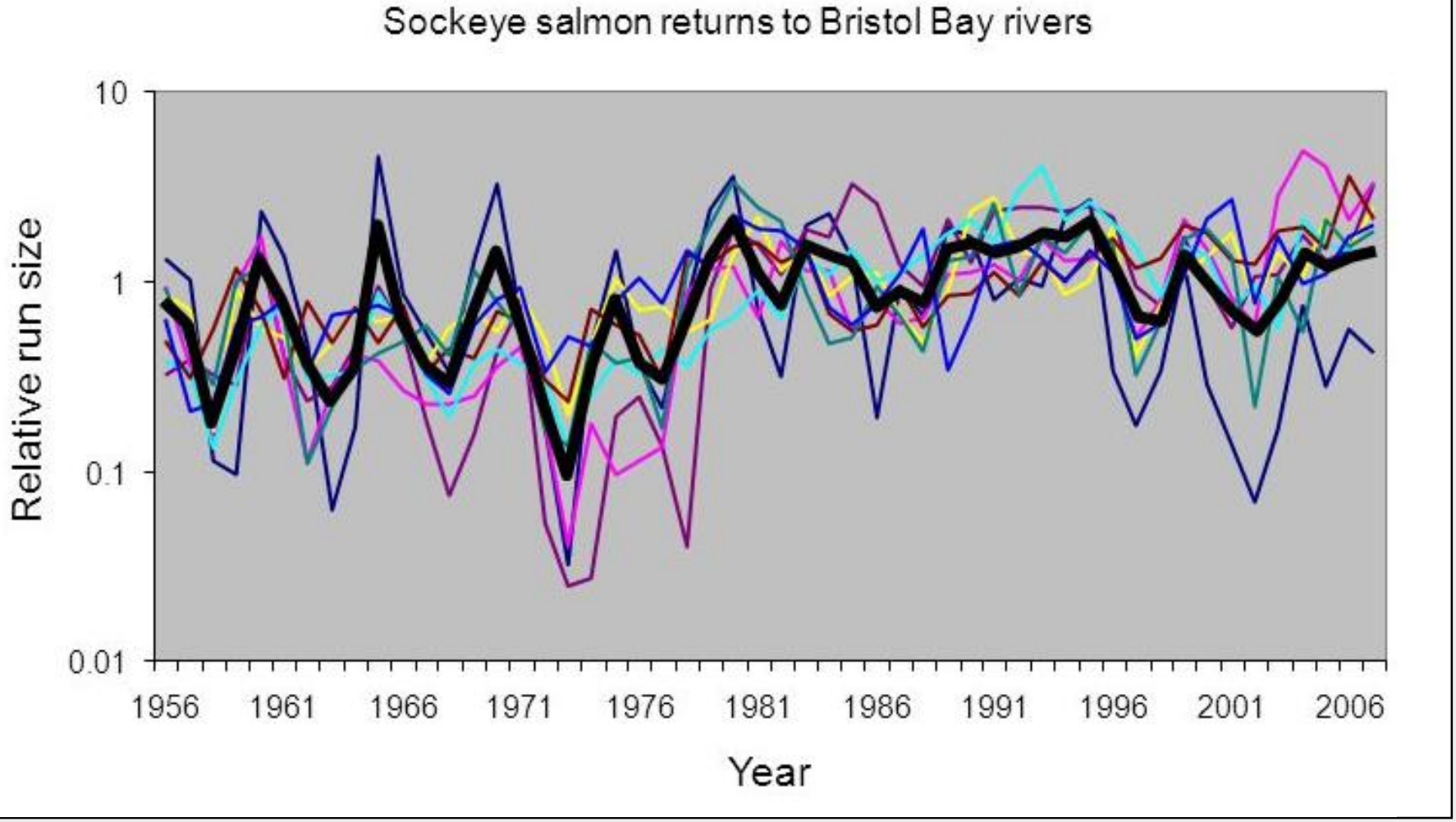
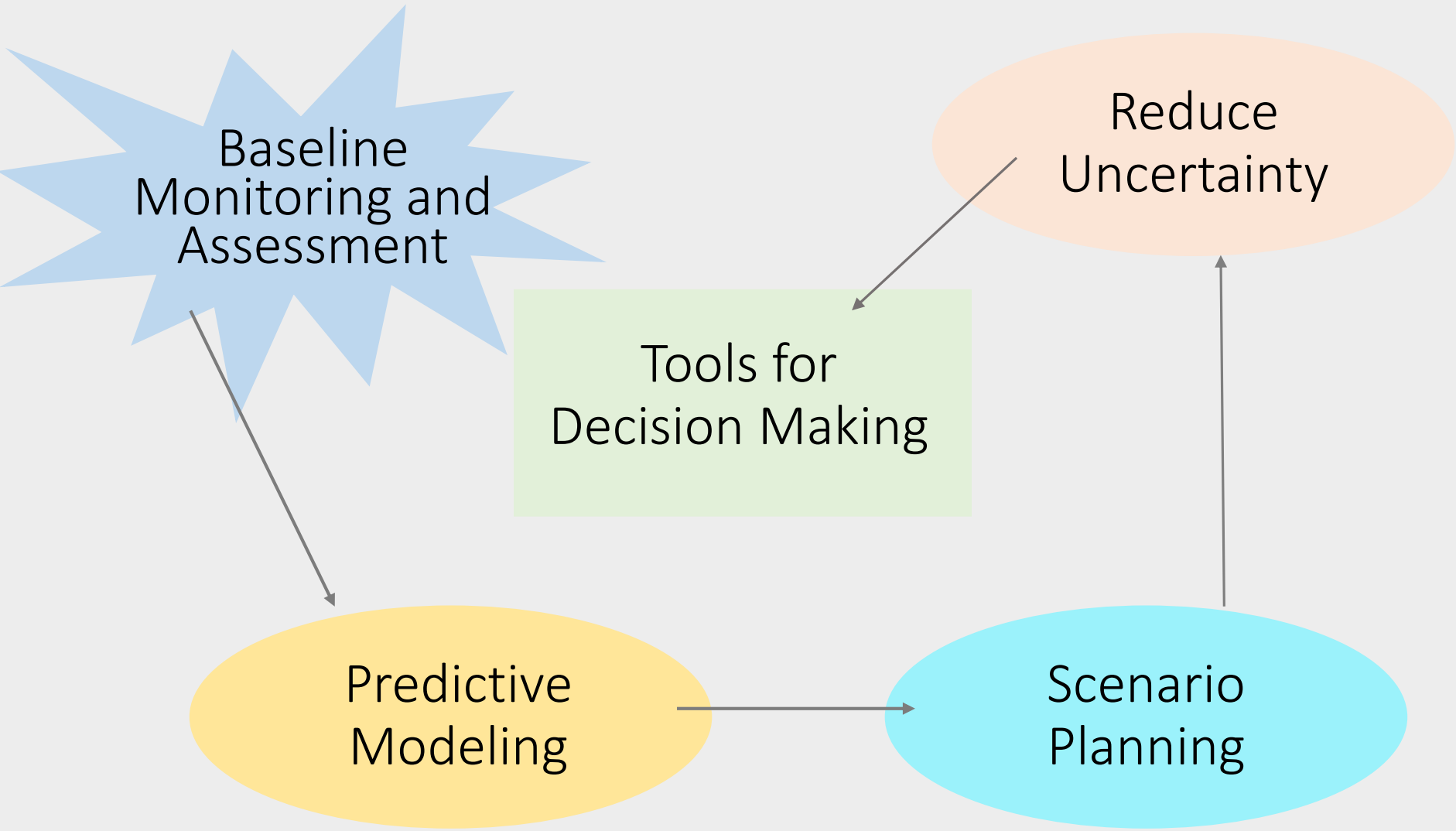
Managing for Uncertainty

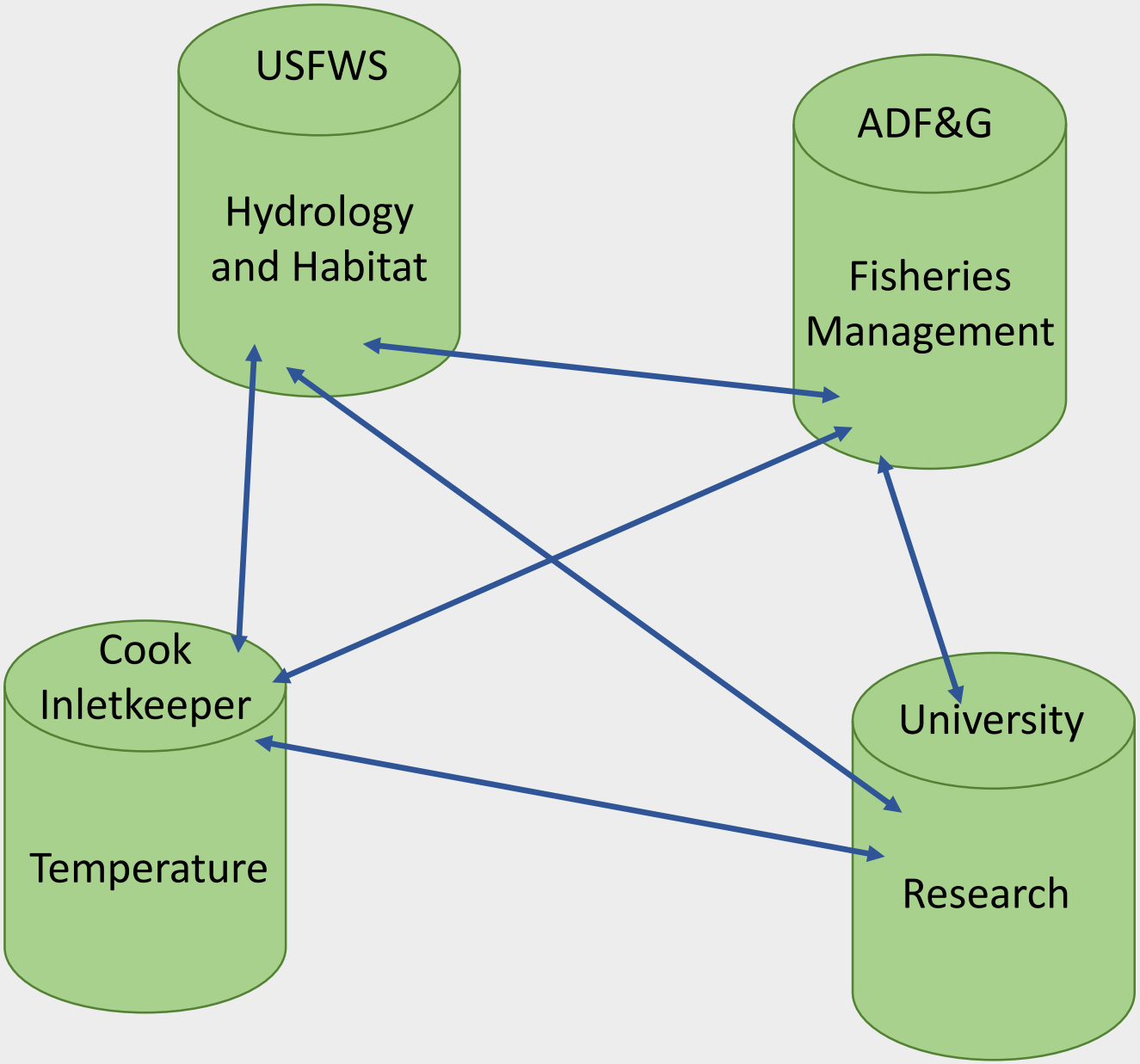


Schindler et al. 2010

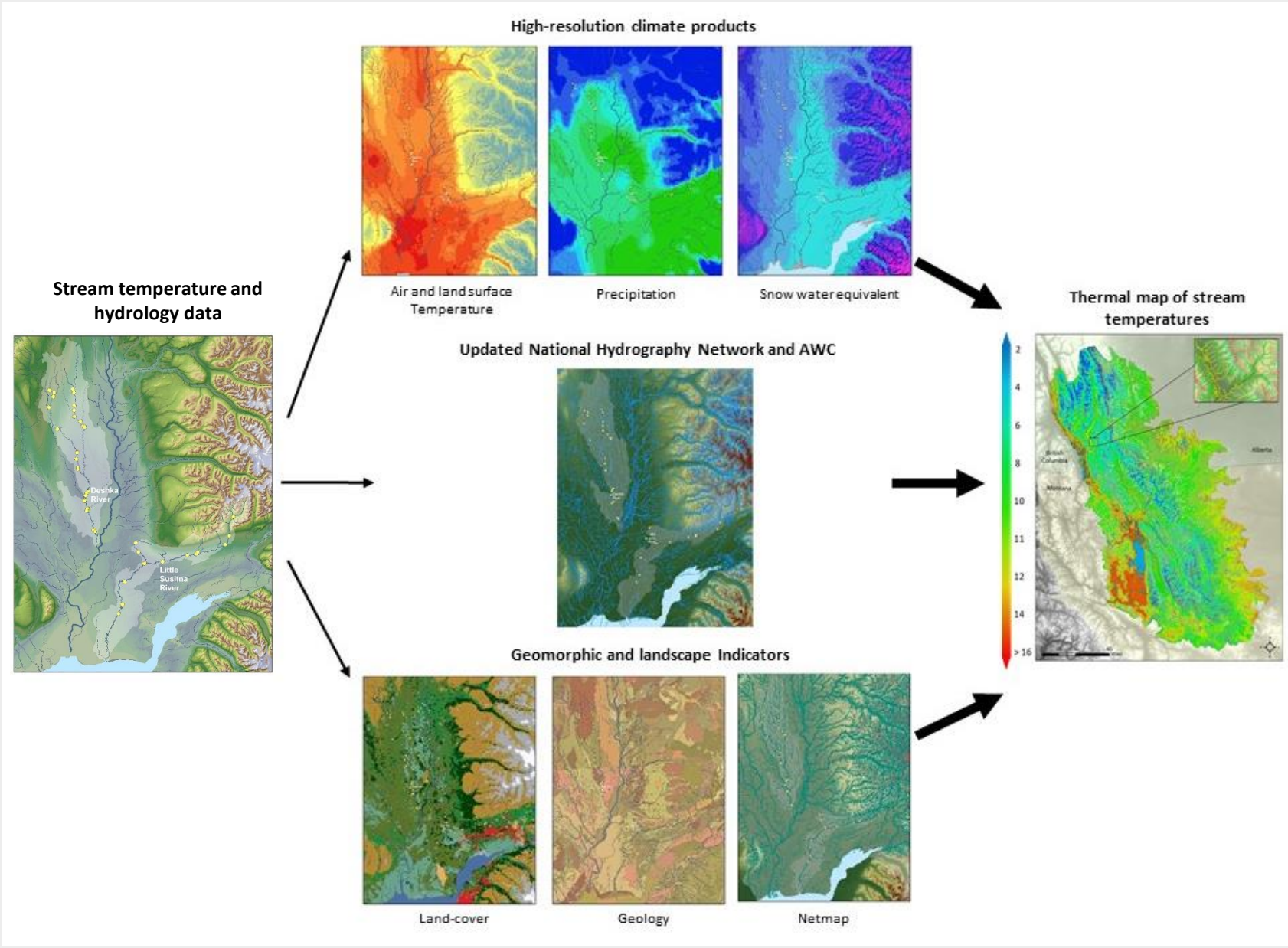
Forecasting and Risk Management



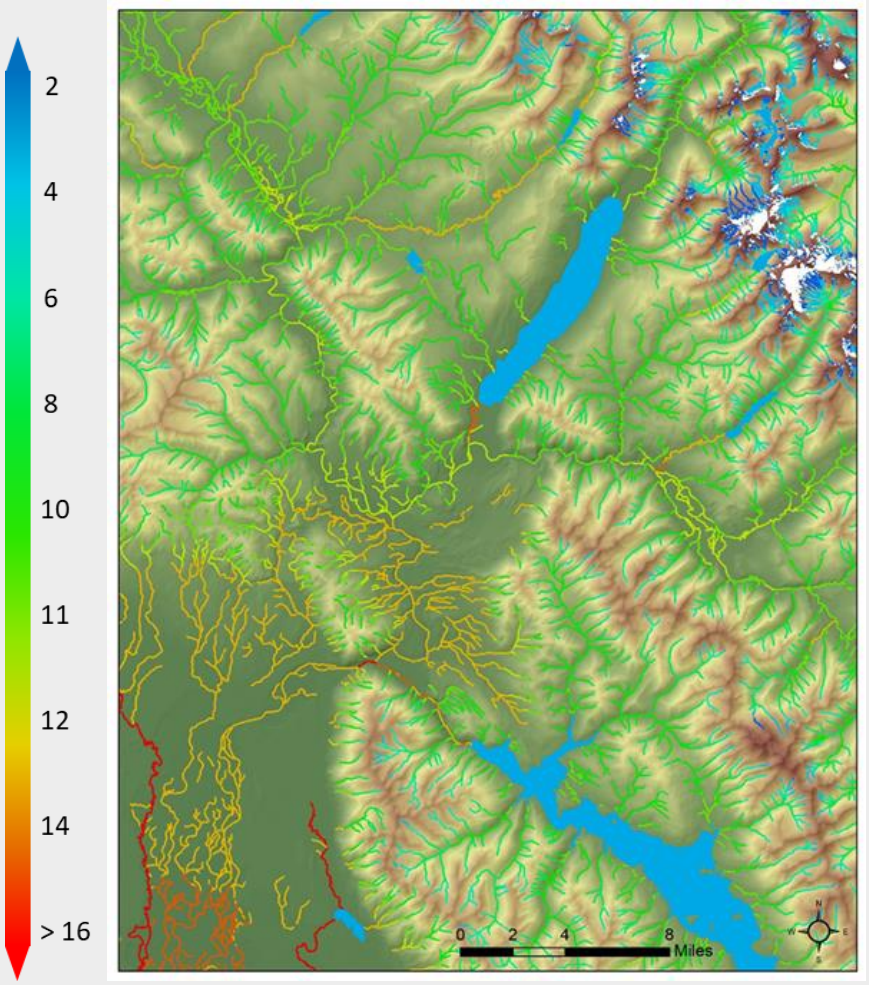
Integrated Management



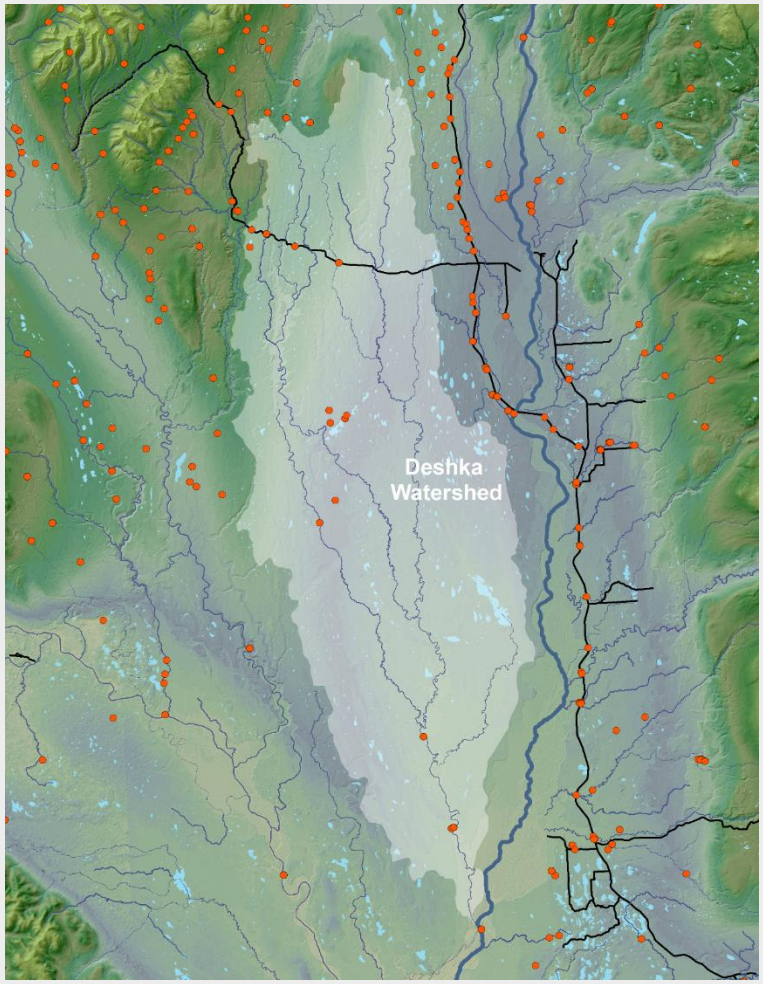
Predictive Modeling – Thermal Riverscapes



Link Thermal Diversity to Salmon Life-histories

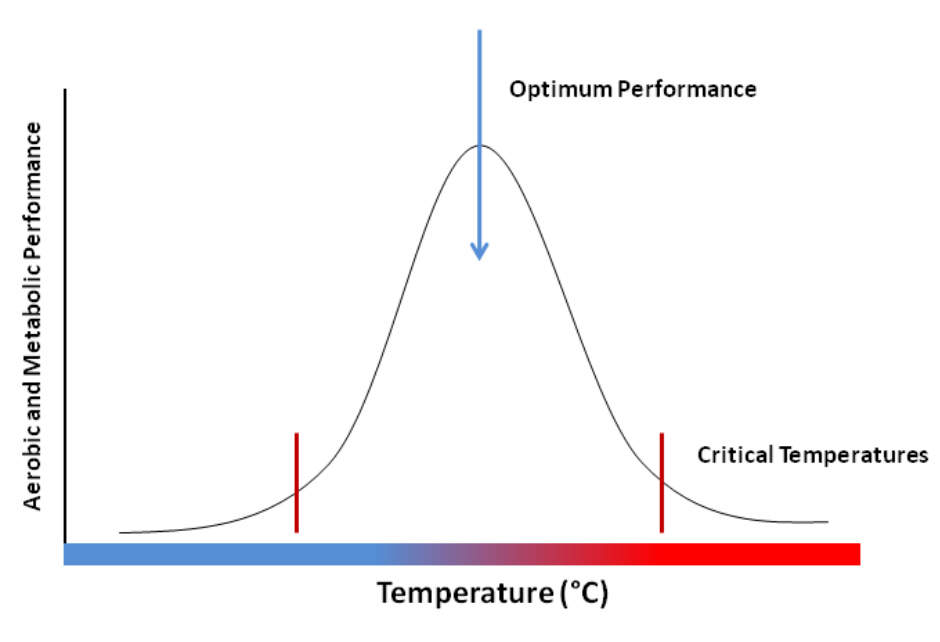


(Jones et al. 2017)

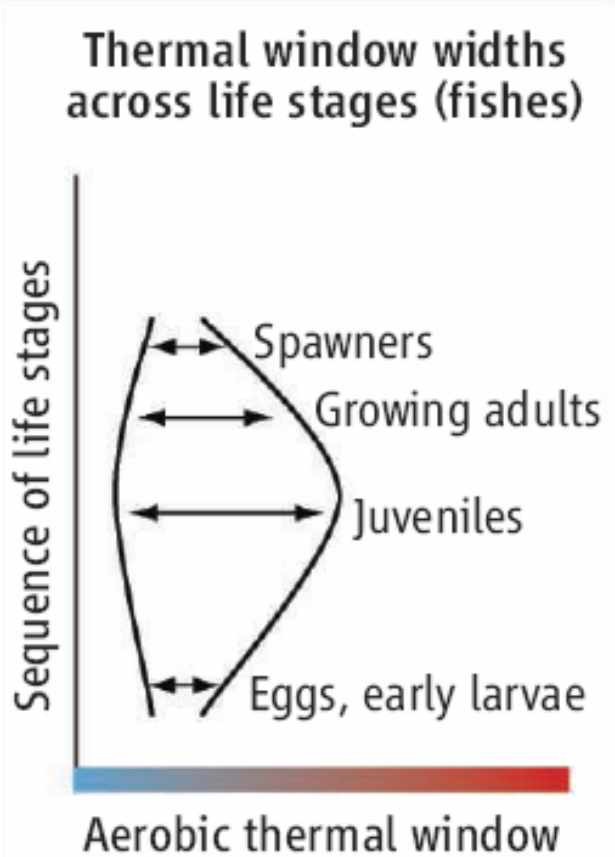


ADF&G Freshwater Fish Inventory

Model Application



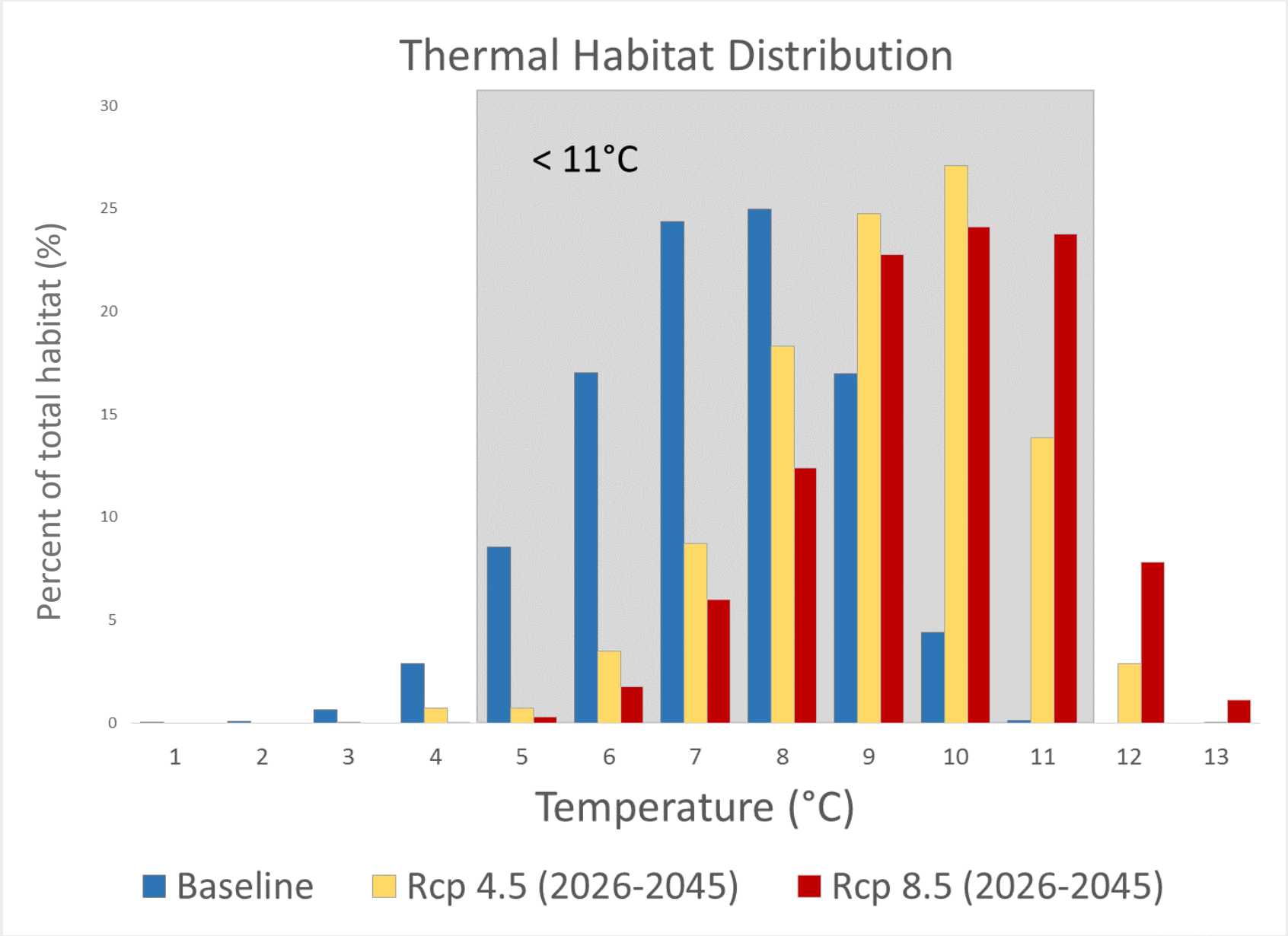
Should EPA standards developed for lower 48 be used to manage Alaska salmon?



Portner, 2008

Portner, 2008

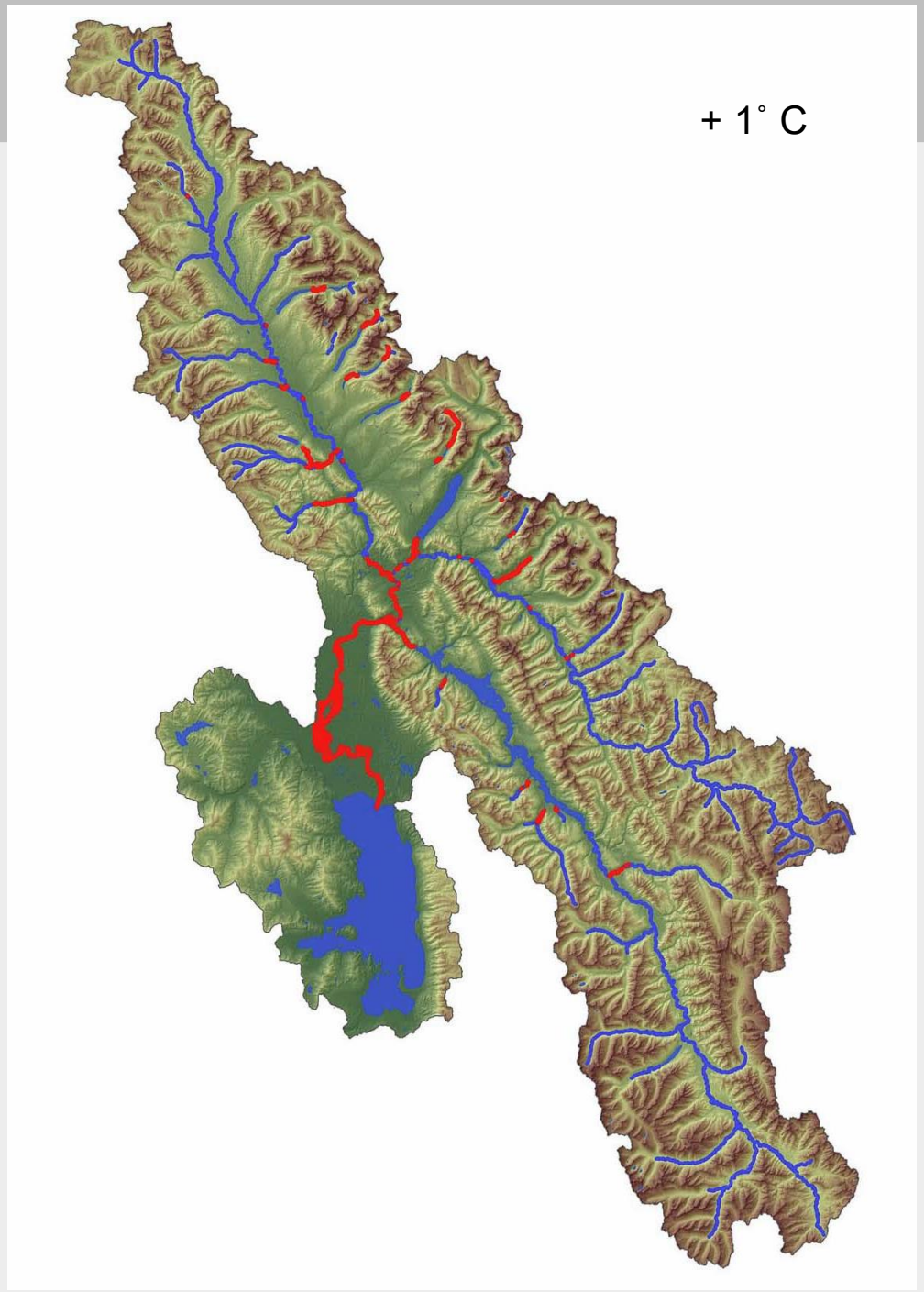
Model Application



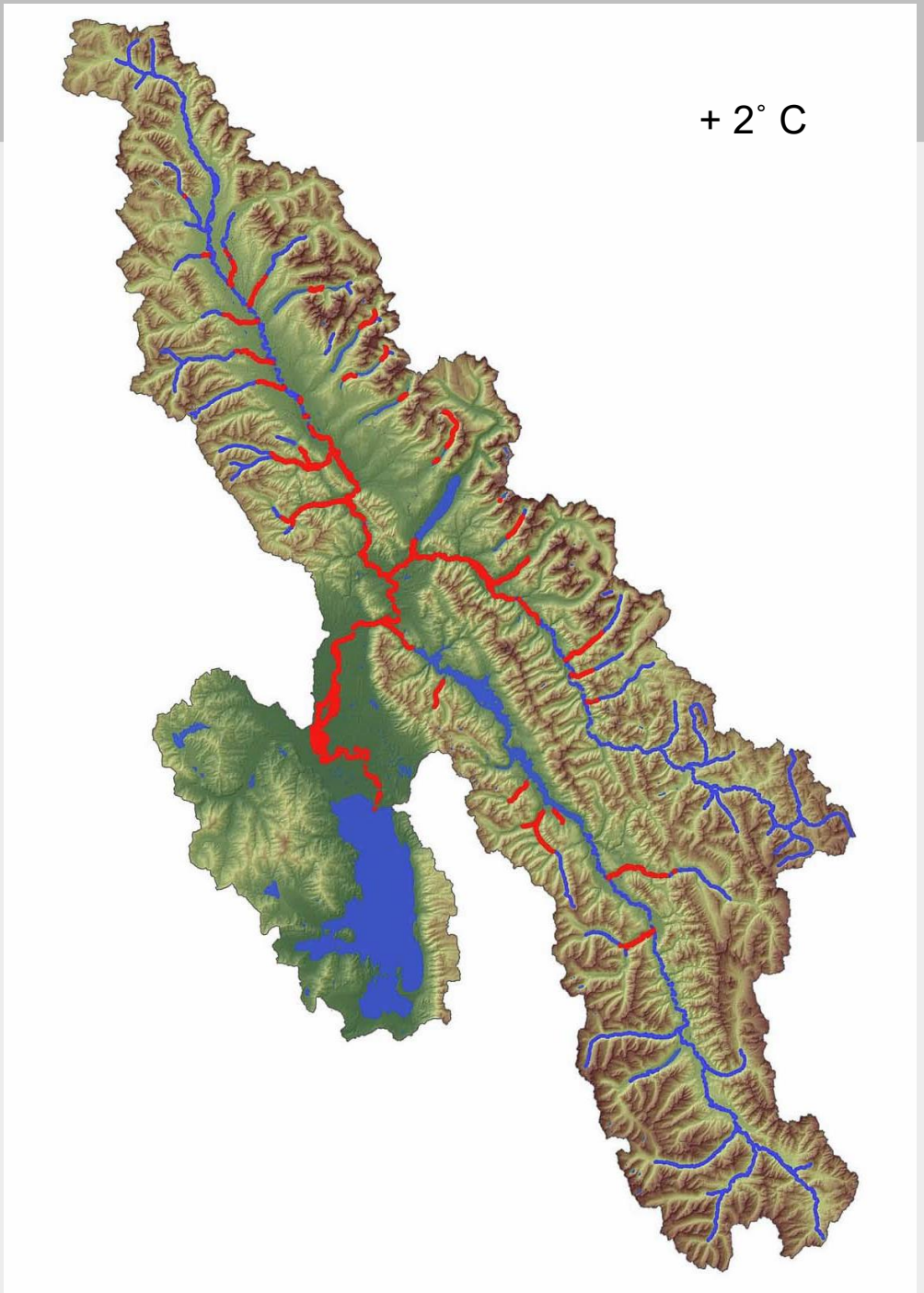
Scenario Planning

- 20% Loss of rearing habitat
- 2% Loss of spawning habitat

Exceedance of Thermal Thresholds



Scenario Planning



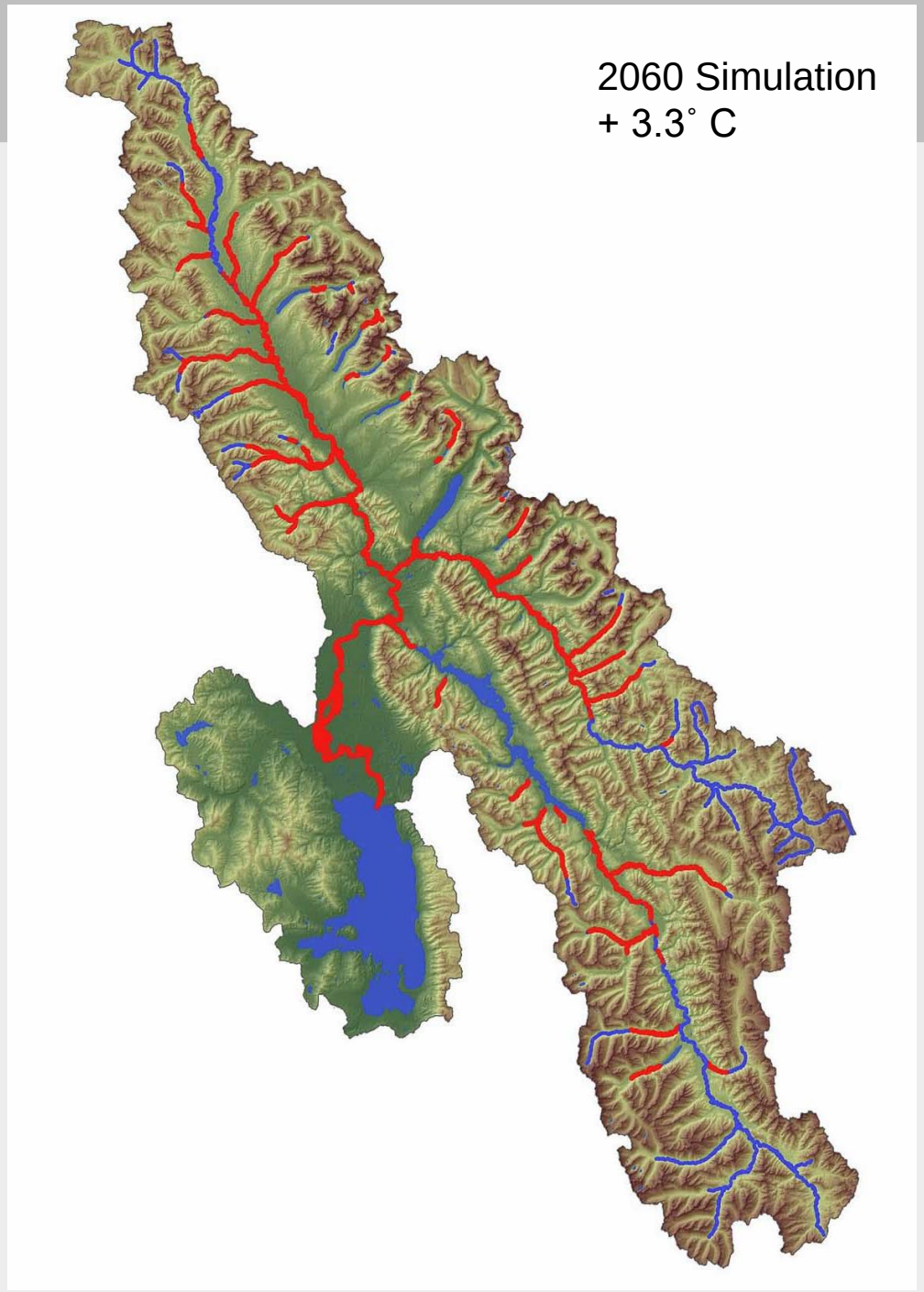
- 37% Loss of rearing habitat
- 13% Loss of spawning habitat

Exceedance of Thermal Thresholds

Scenario Planning

- 58% Loss of rearing habitat
- 36% Loss of spawning habitat

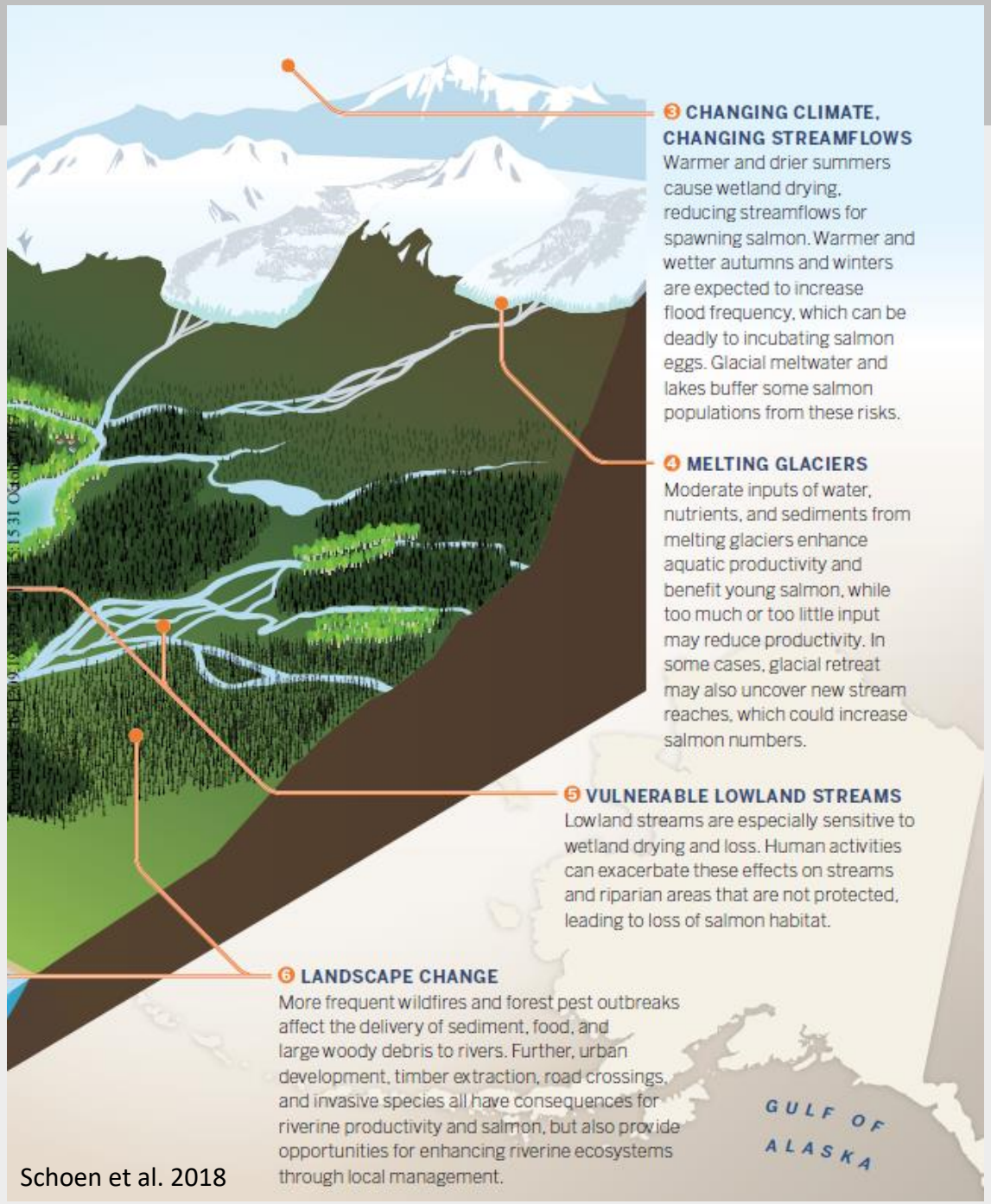
Exceedance of Thermal Thresholds



Model Application…

Collaborative monitoring and assessment efforts:

How does and how will changes in hydrology effect temperature regimes and thermal diversity?

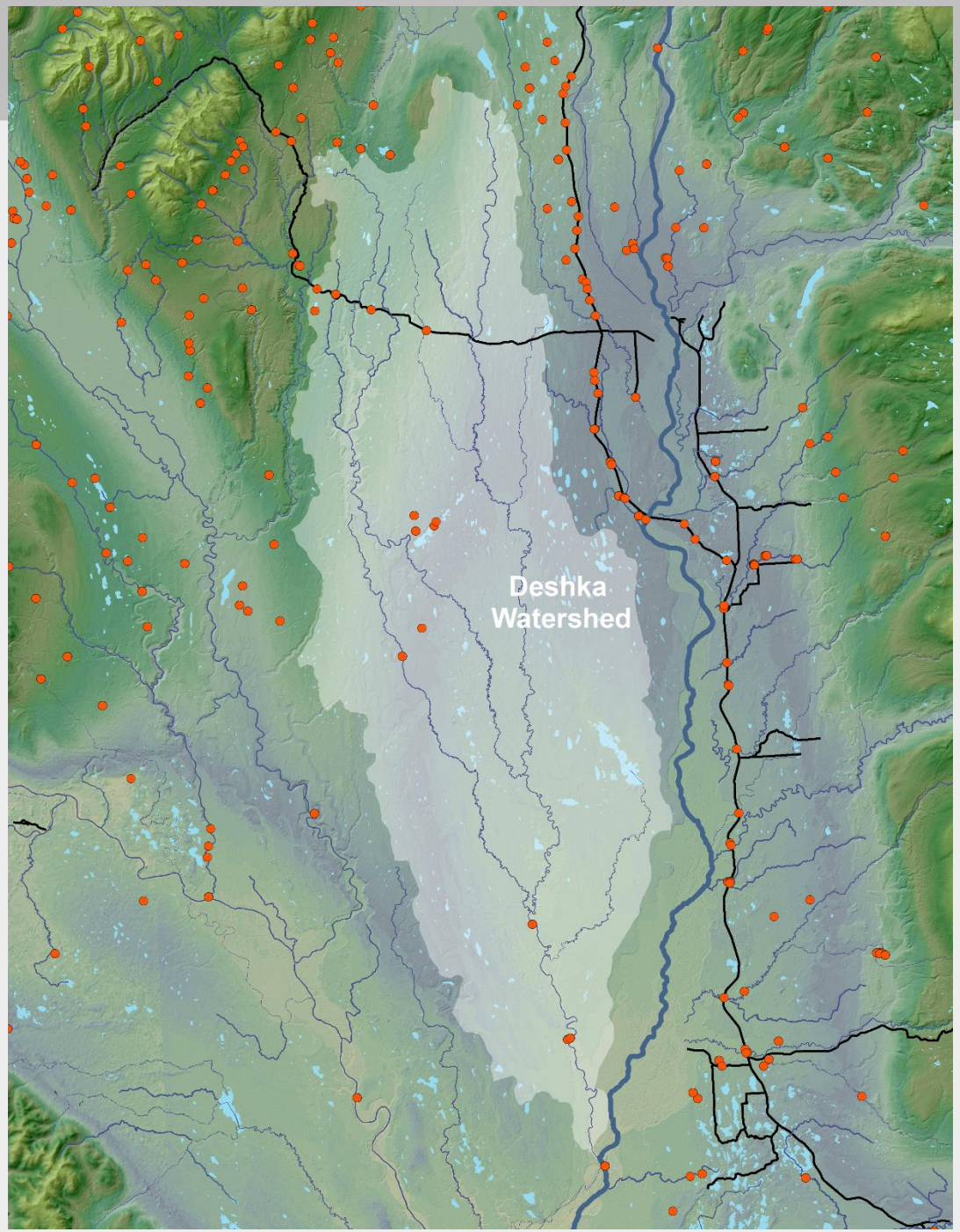


Schoen et al. 2018

Model Application

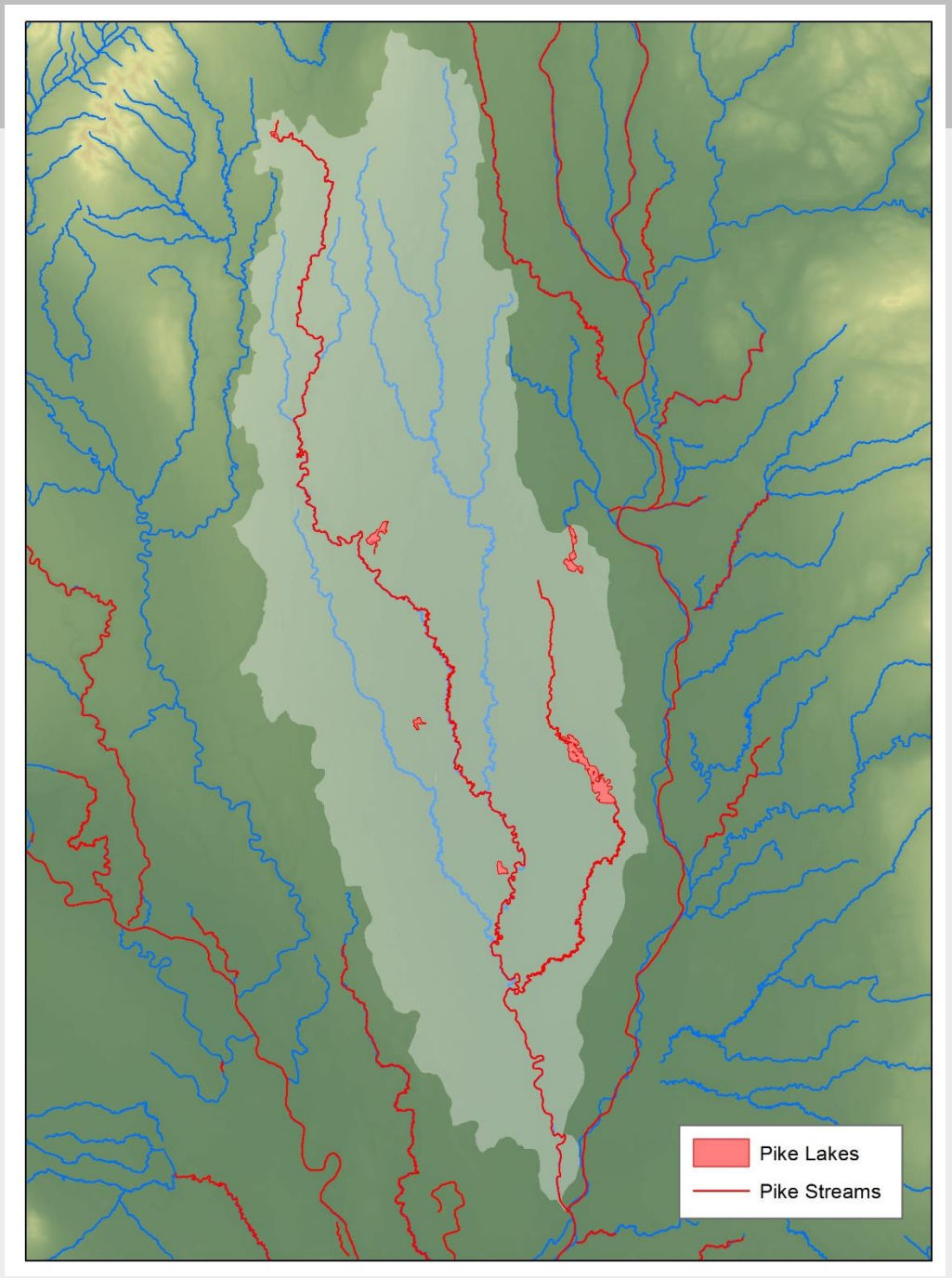
Target on-the-ground biological data collection -

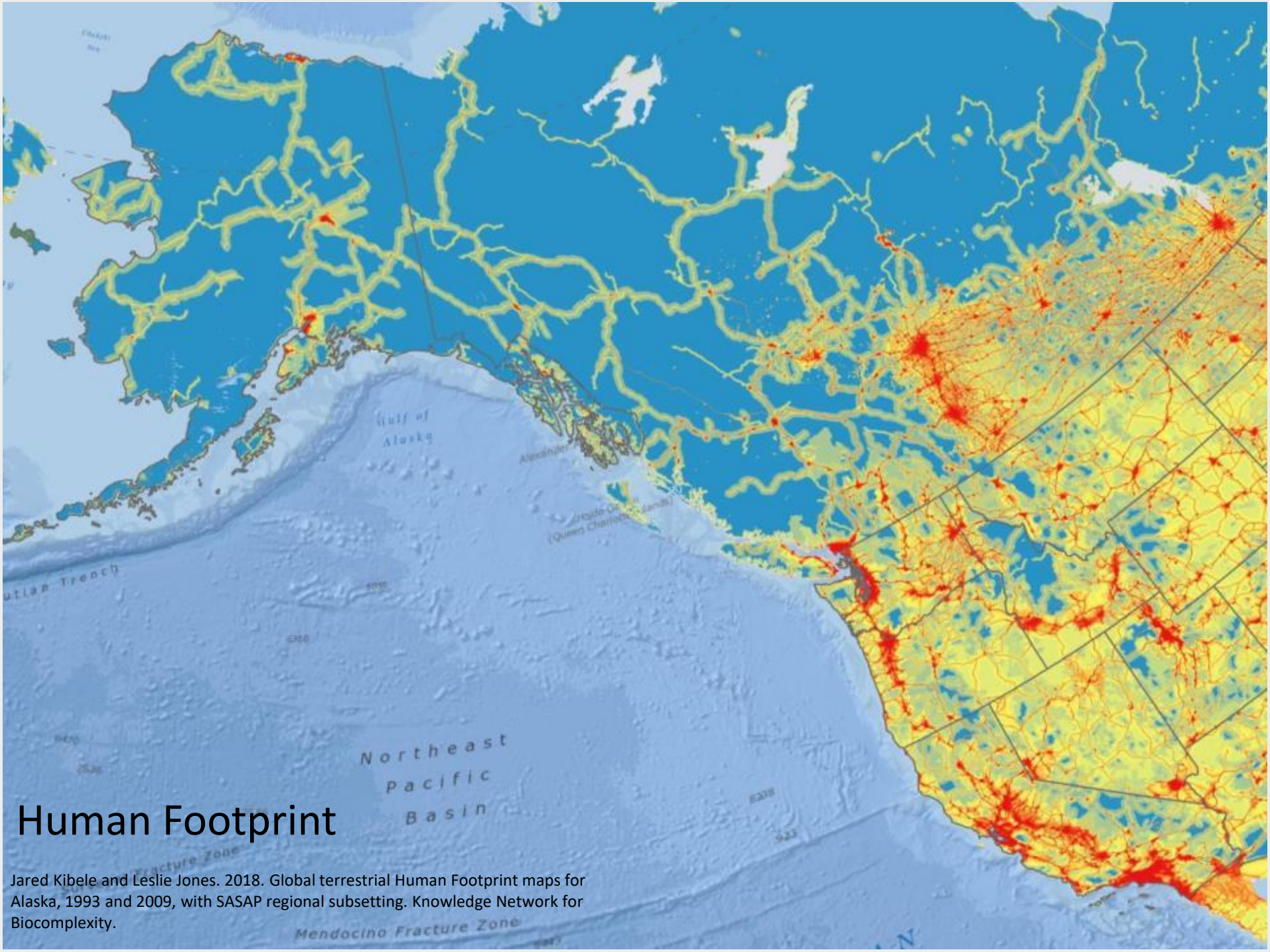
specific to life-histories such as spawning and juvenile rearing locations by mapping thermally suitable habitats



Model Application…

Understand thermal niche of Pike and project expansion within and beyond the Deshka watershed





Human Footprint

Jared Kibele and Leslie Jones. 2018. Global terrestrial Human Footprint maps for Alaska, 1993 and 2009, with SASAP regional subsetting. Knowledge Network for Biocomplexity.

Cumulative Impacts Management – Freshwater Habitat