

CHESAPEAKE WATERSHEDS ASSESSMENT

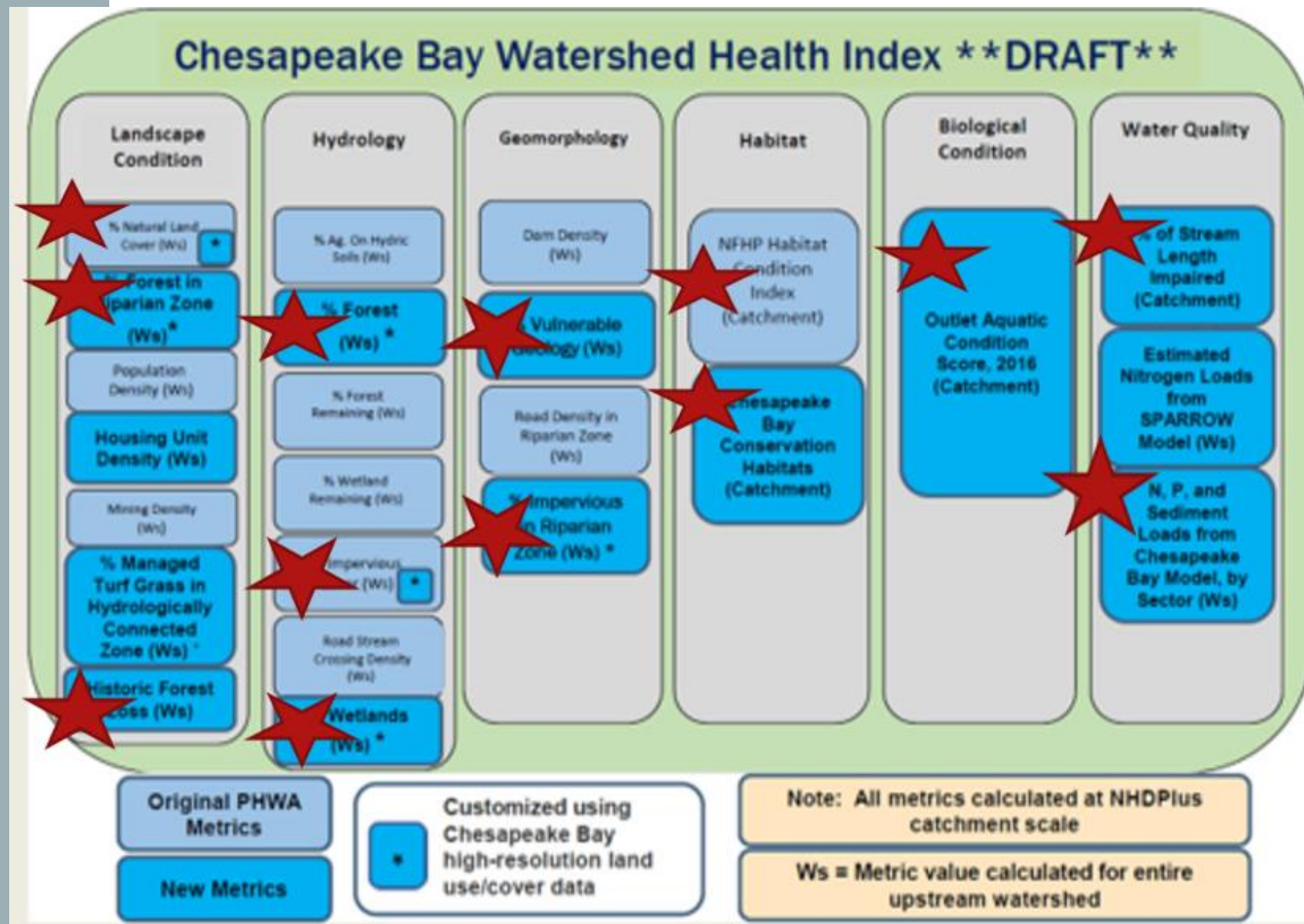
Goal: Sustain state-identified healthy waters and watersheds recognized for their high quality and/or high ecological value

Outcome: 100 percent of state-identified healthy waters and watersheds remain healthy.

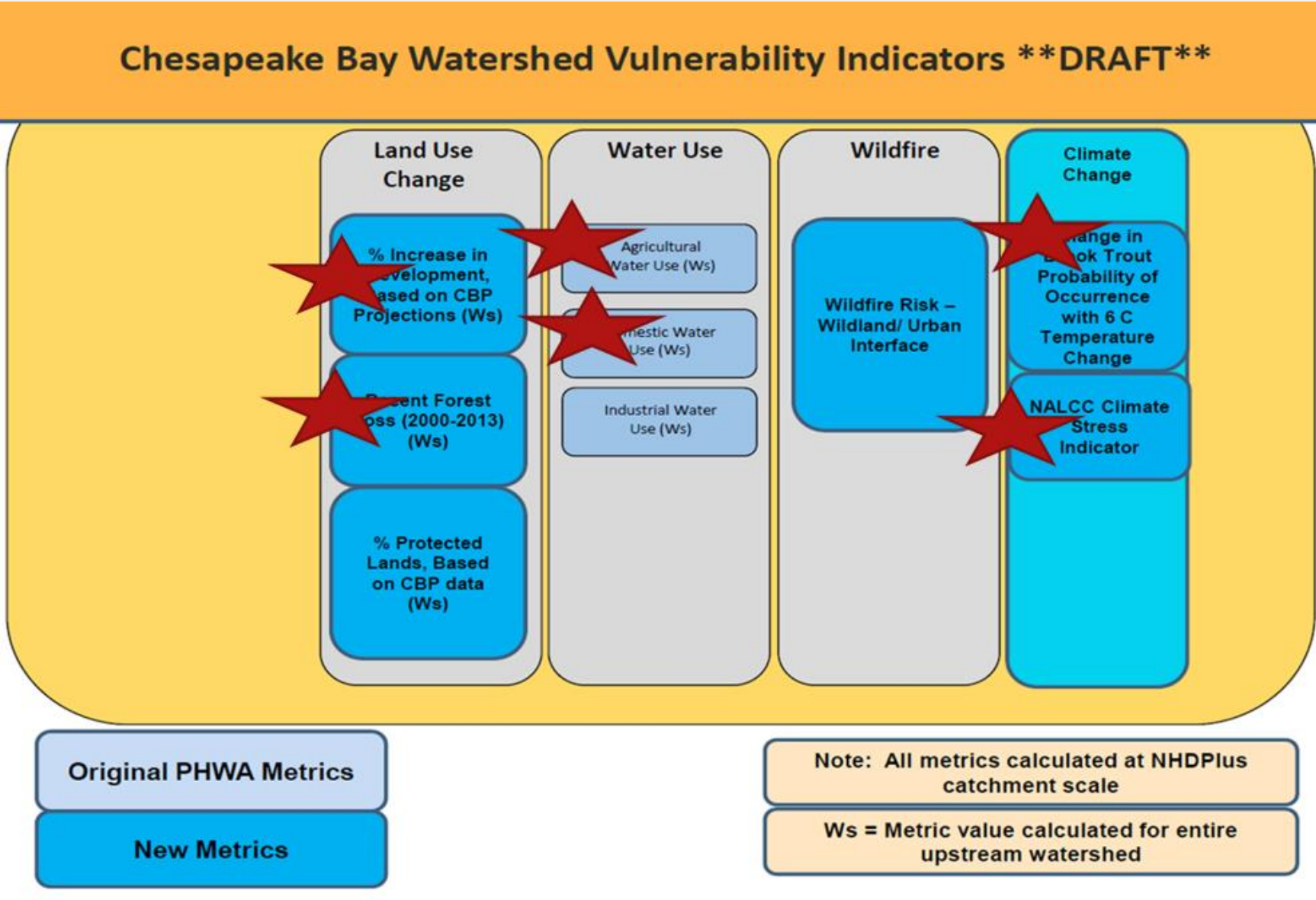


HEALTHY WATERSHEDS GOAL

OCT 2019 GIT
CHAIRS
MEETING
RECAP



OCT 2019 GIT
CHAIRS
MEETING
RECAP



WHAT ELSE SHOULD BE INCLUDED?

Sea level rise
impact on forests
and tidal marches

Ej screen

Recent
grassland/wetland
loss

Percent working
forests

Human health
index

Shoreline
hardening

Change in
precipitation

Endangered fish
species

Recreational
impairments

CHESAPEAKE BAY WATERSHED VULNERABILITY INDEX



Land Use Change



Water Use



Wildfire



Climate Change

CHWA CLIMATE METRICS

Metric

- Change in Probability of Brook Trout Occurrence, Current Conditions v. Future Conditions

(Future increase of stream temperature of 6 degrees C)

- Climate Stress indicator

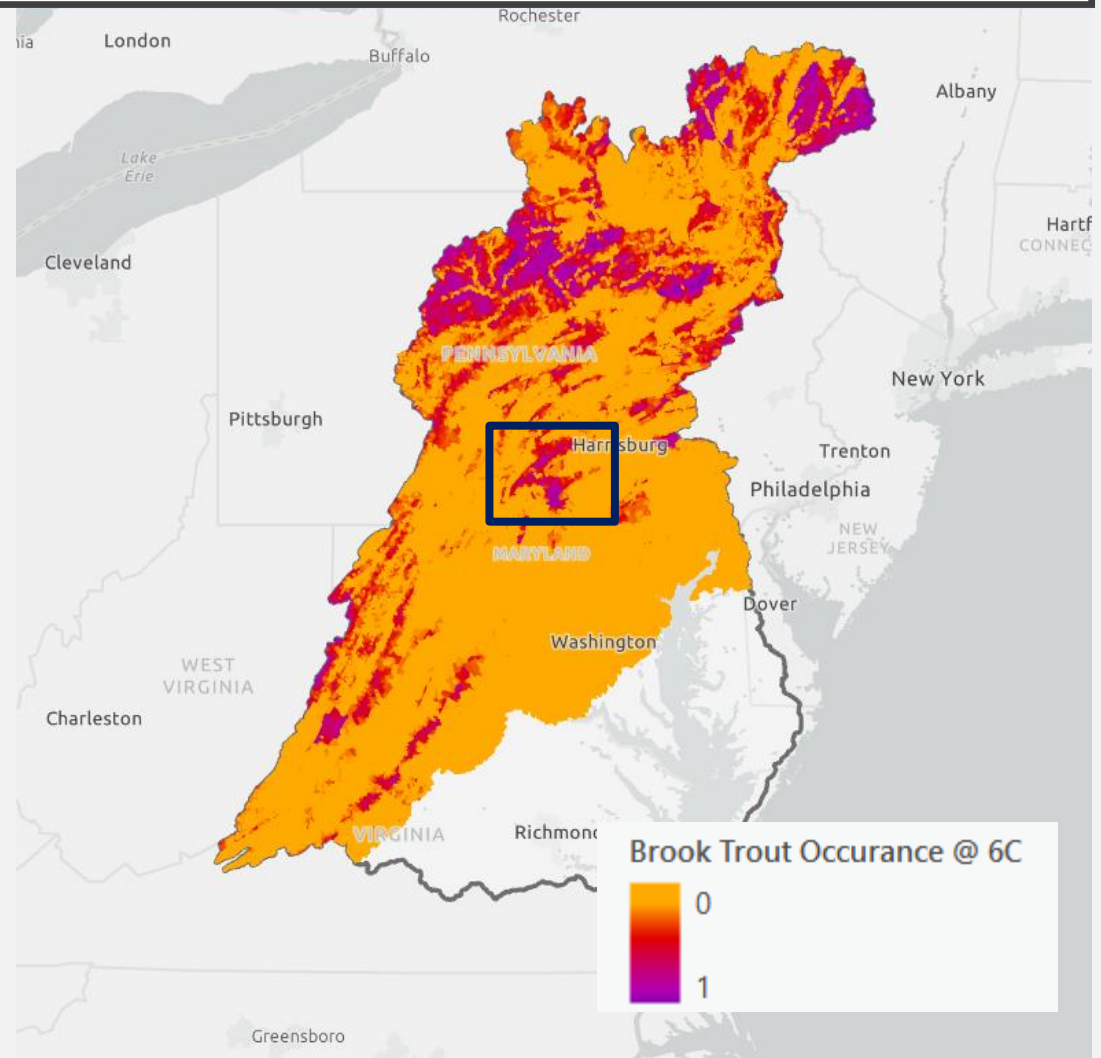
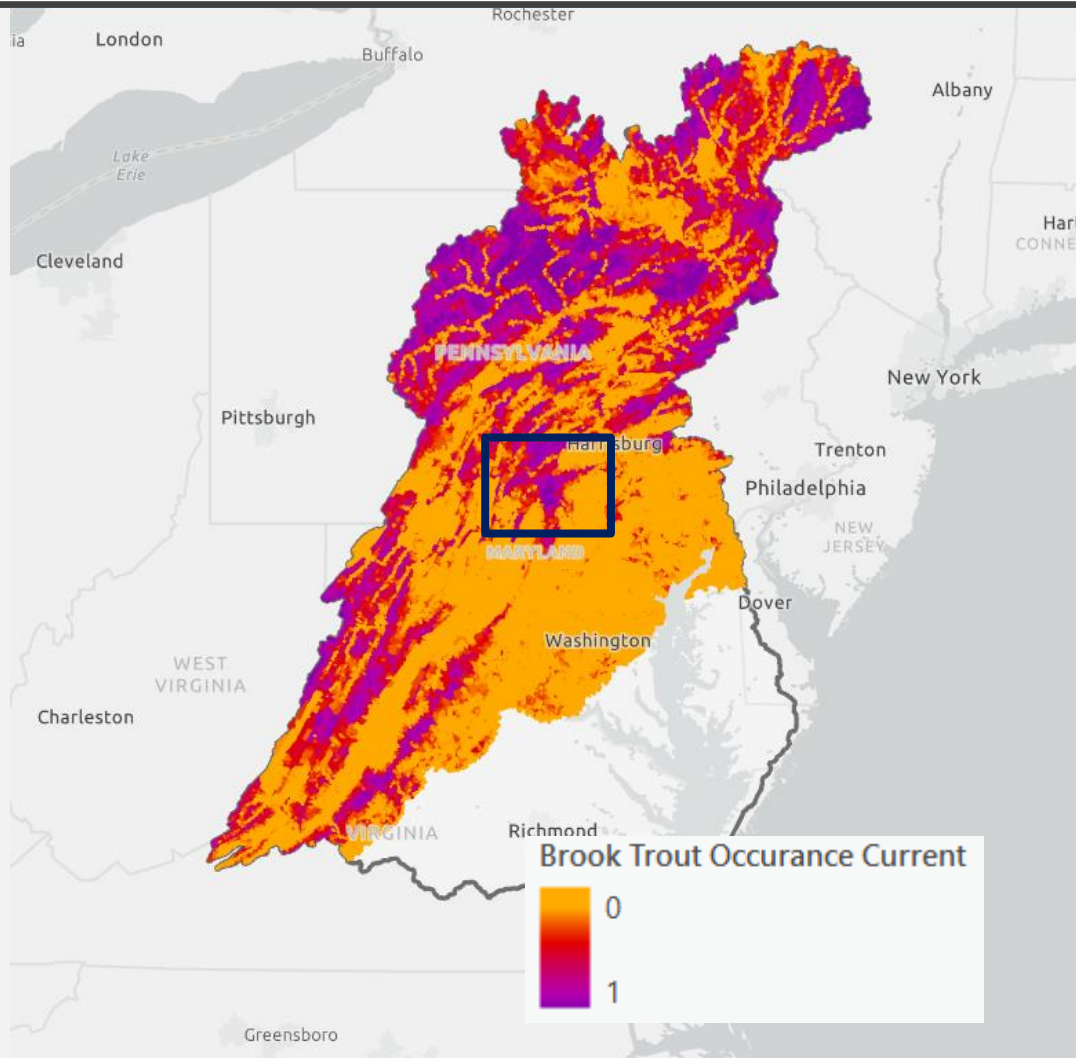
(estimated magnitude of climate stress that may be exerted on habitats (ecosystem types) in 2080, where 2080 climate conditions depart substantially from conditions where the underlying ecosystem type currently occurs are considered to be stressed).

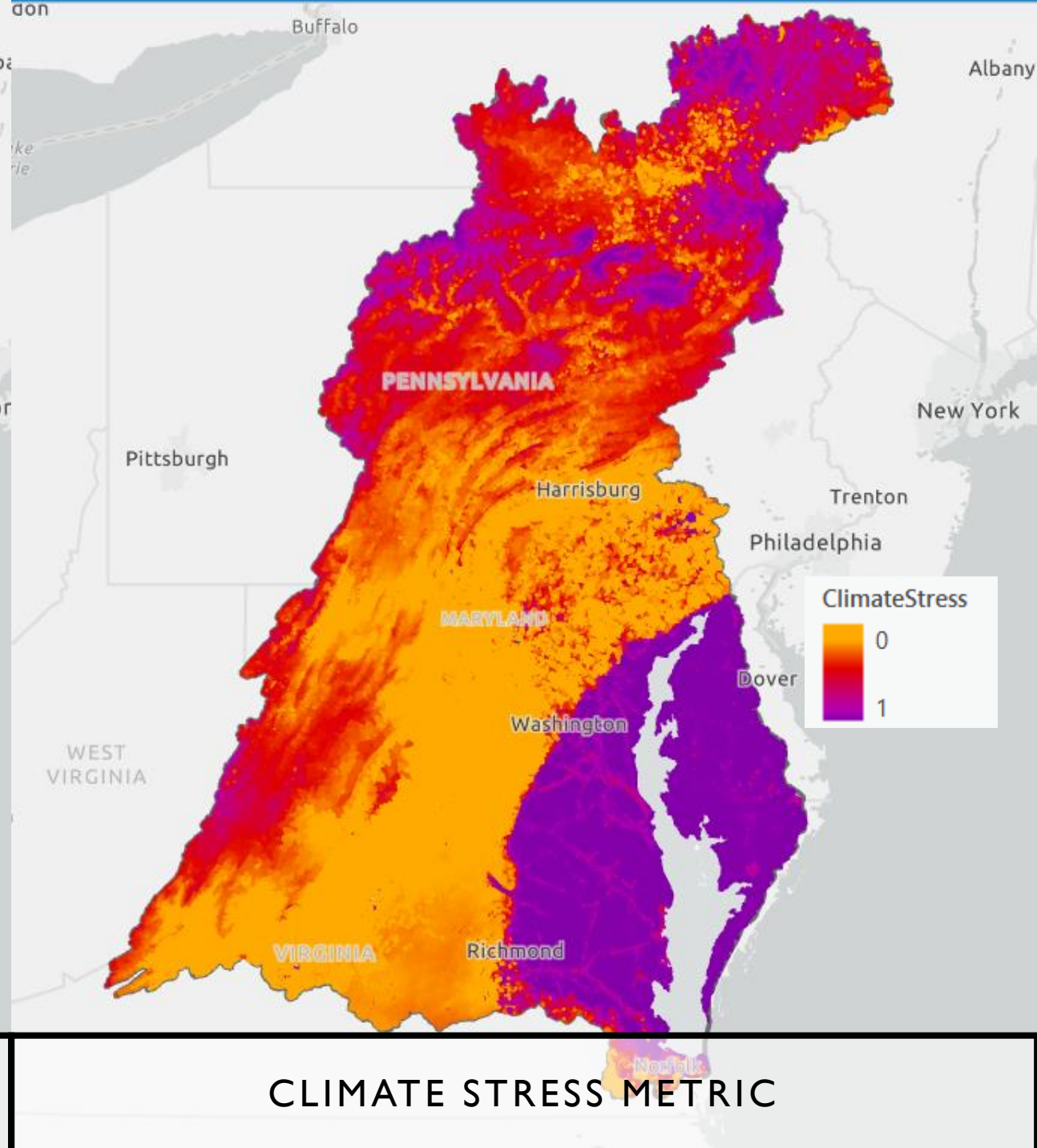
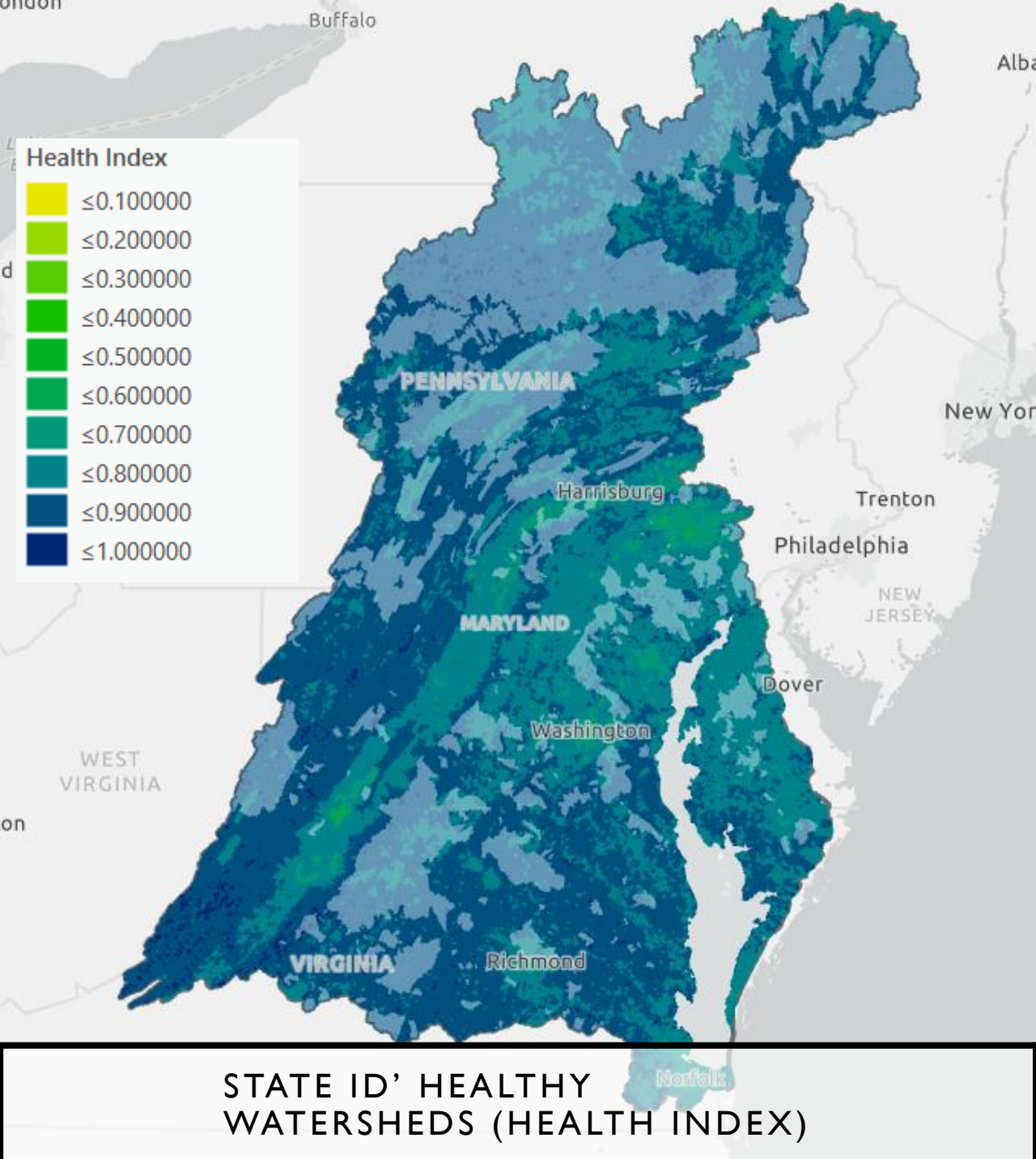
Data Source

- North Atlantic Landscape Conservation Cooperative (NALCC), Nature's Network, USGS Conte Lab, 2017

- North Atlantic Landscape Conservation Cooperative (NALCC), Nature's Network, 2017

CURRENT BROOK TROUT VS. BROOK TROUT 6 DEG C. INCREASE





CLIMATE INDICATOR FRAMEWORK

Physical Indicators
(Signals of Change)



Impact Indicators
(Ecological and Community
Threats)



Resilience Indicators
(Readiness)

Example

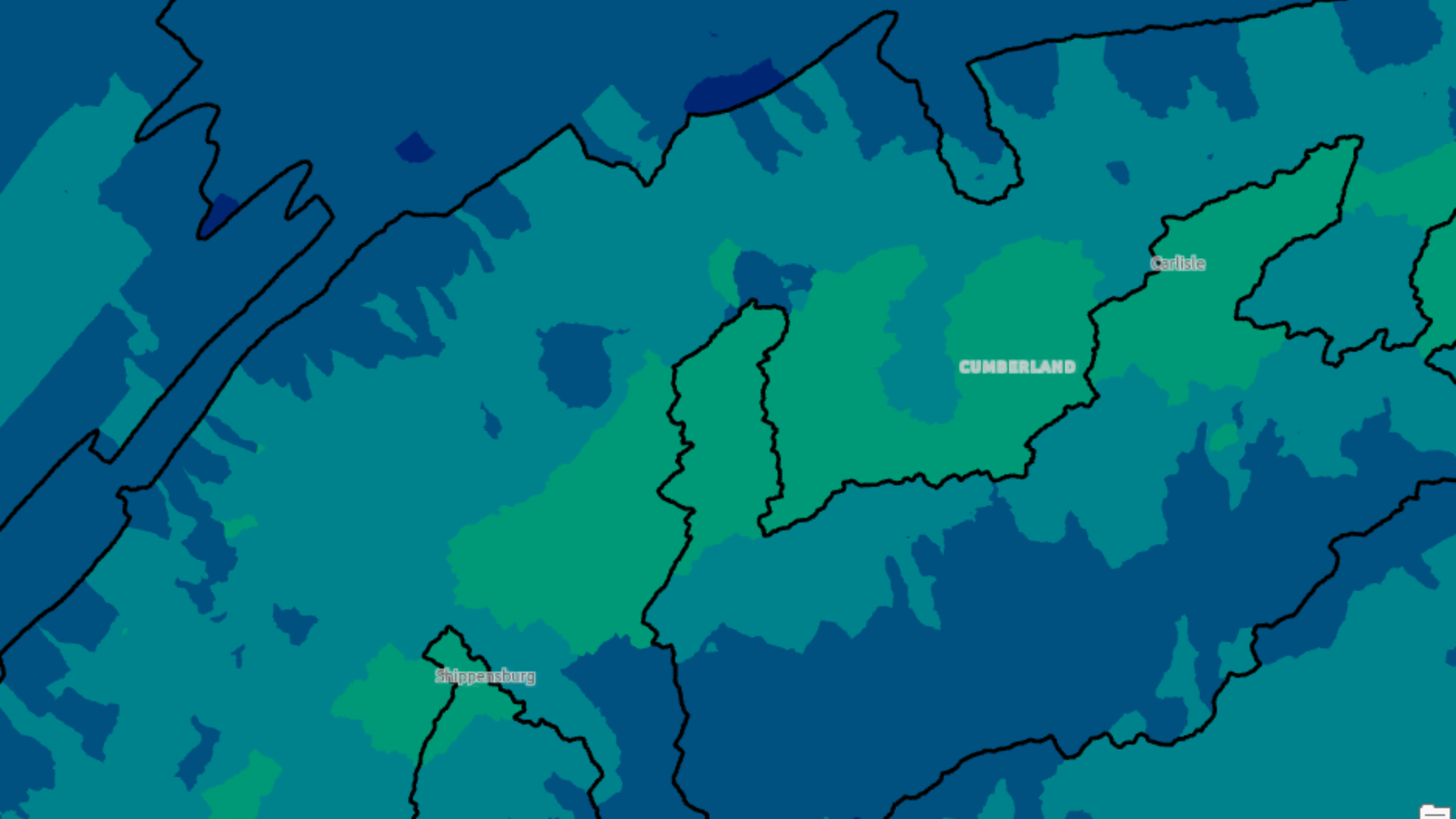
Change in stream
Temperature
(Signals of Change)



Change in Brook Trout Habitat
(Ecological and Community
Threats)



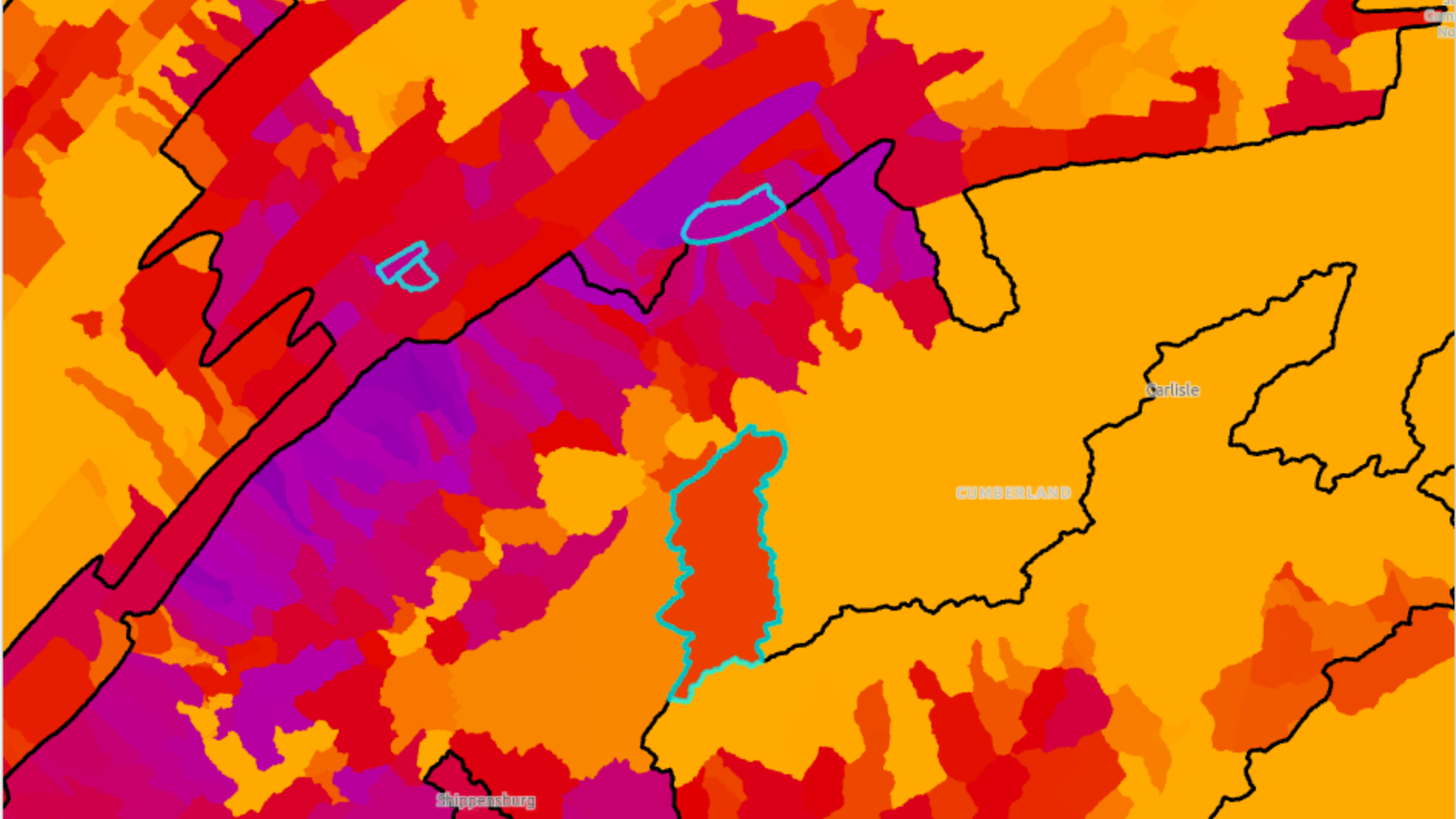
Where to
restore/protect brook
trout habitat to
increase climate
resilient occupied
habitat?
(Readiness)



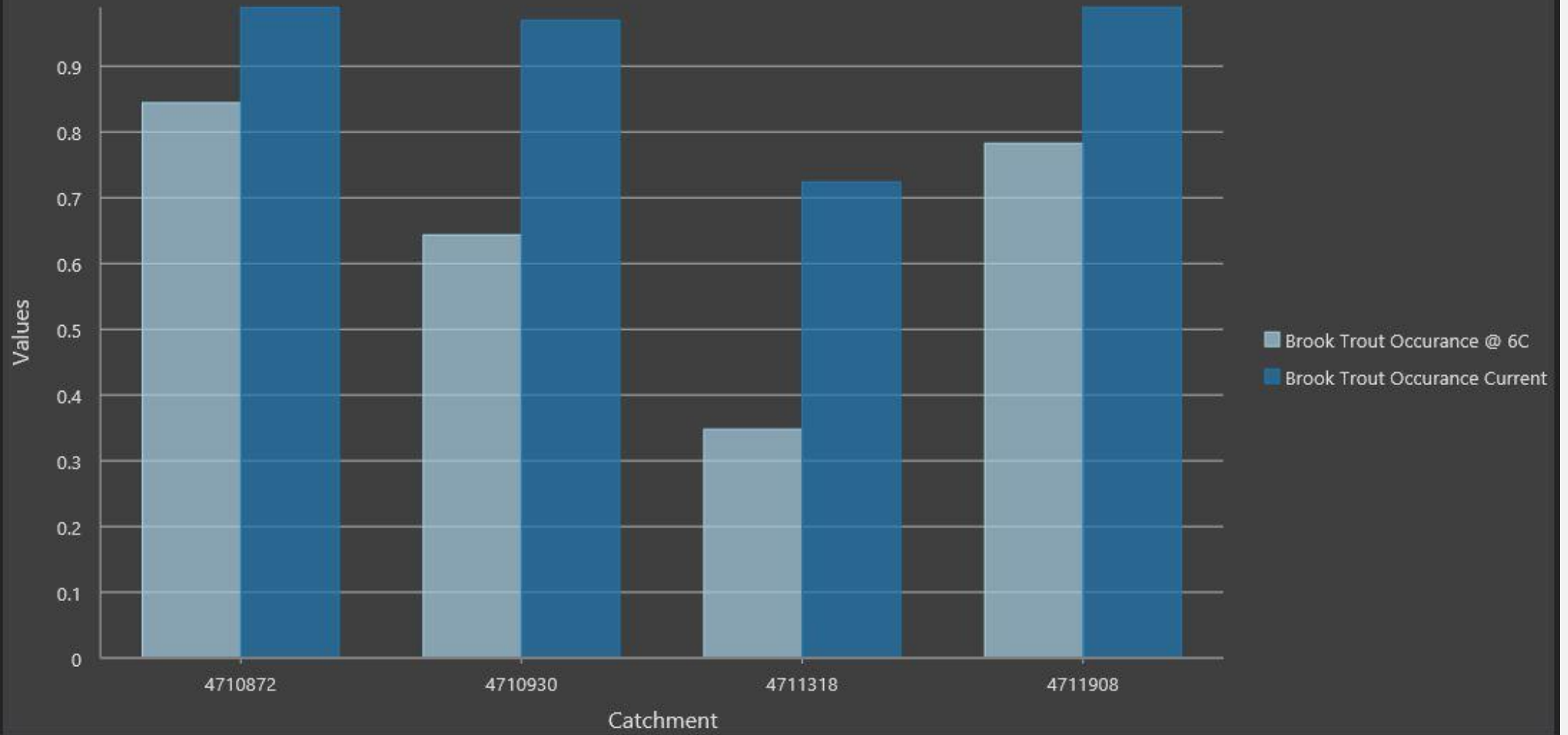
Carlisle

CUMBERLAND

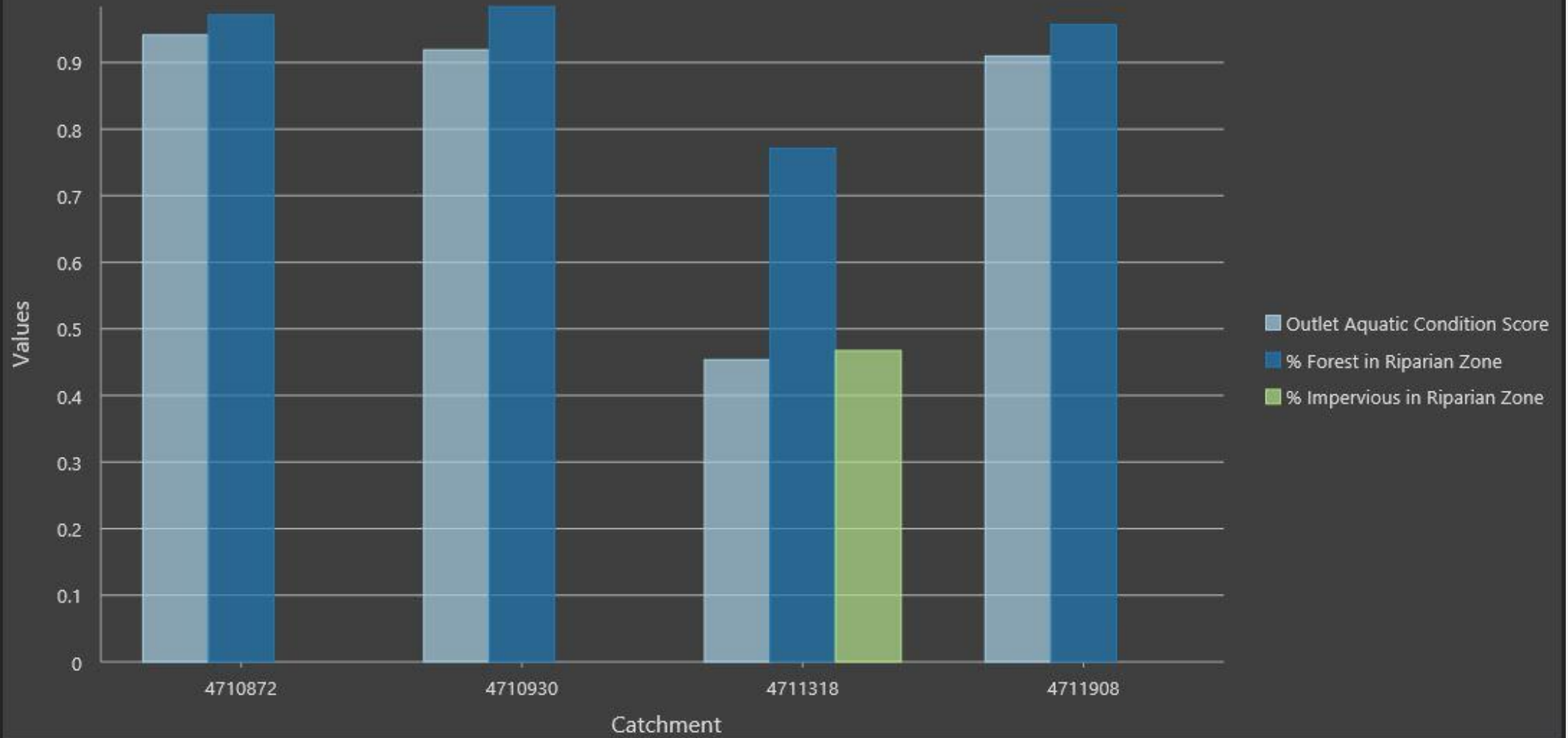
Shippensburg



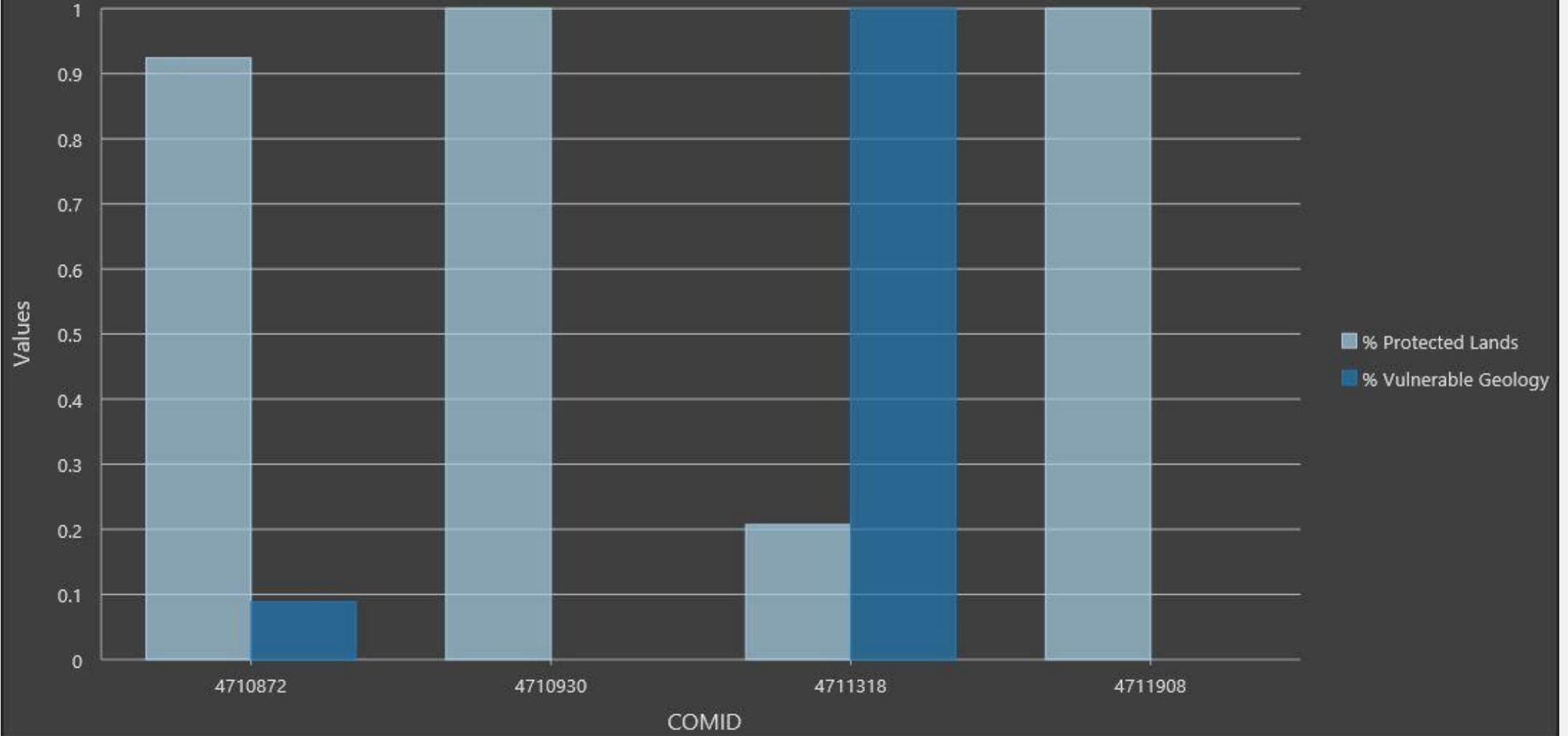
Brook Trout Occurance at 6 C



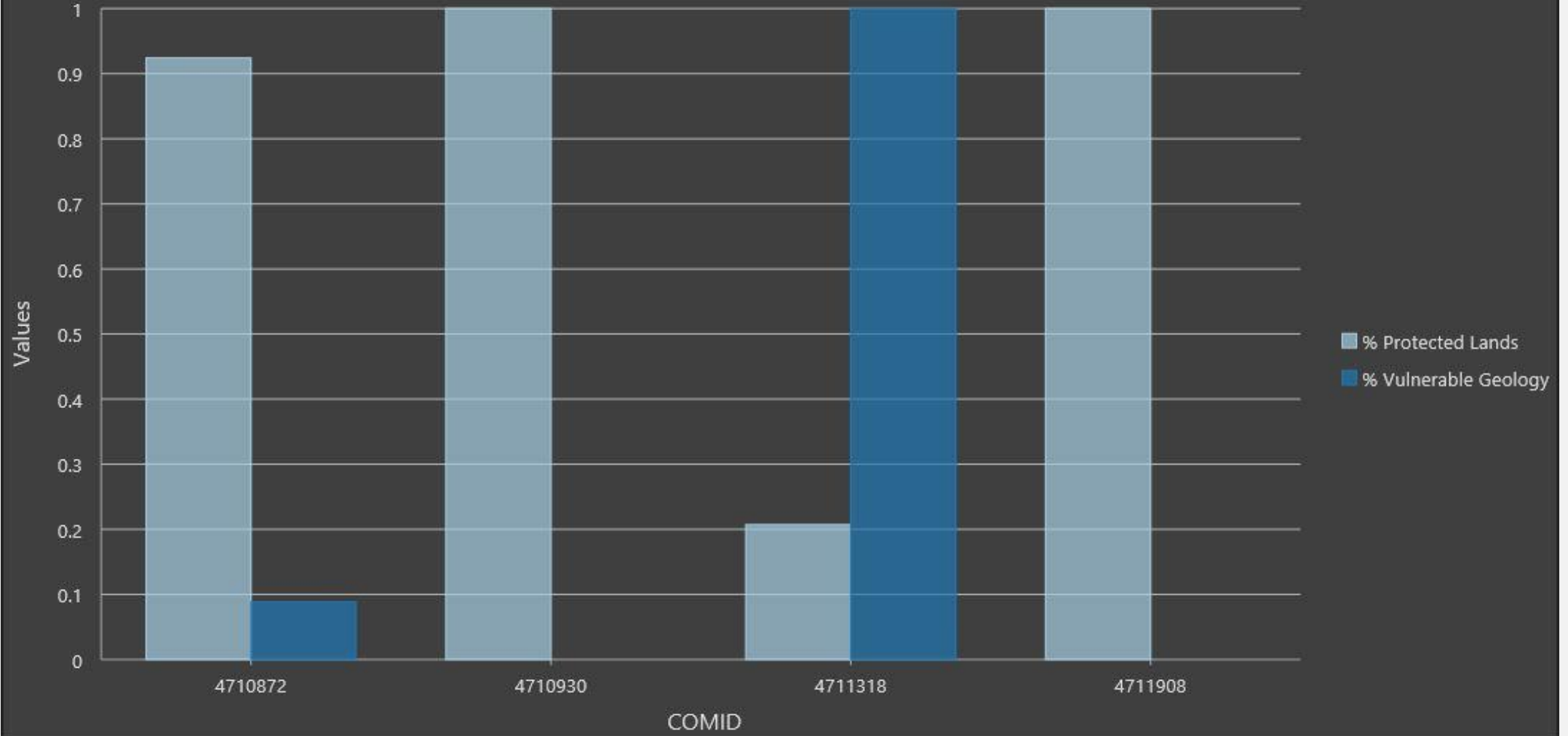
Riparian Zone Comparison

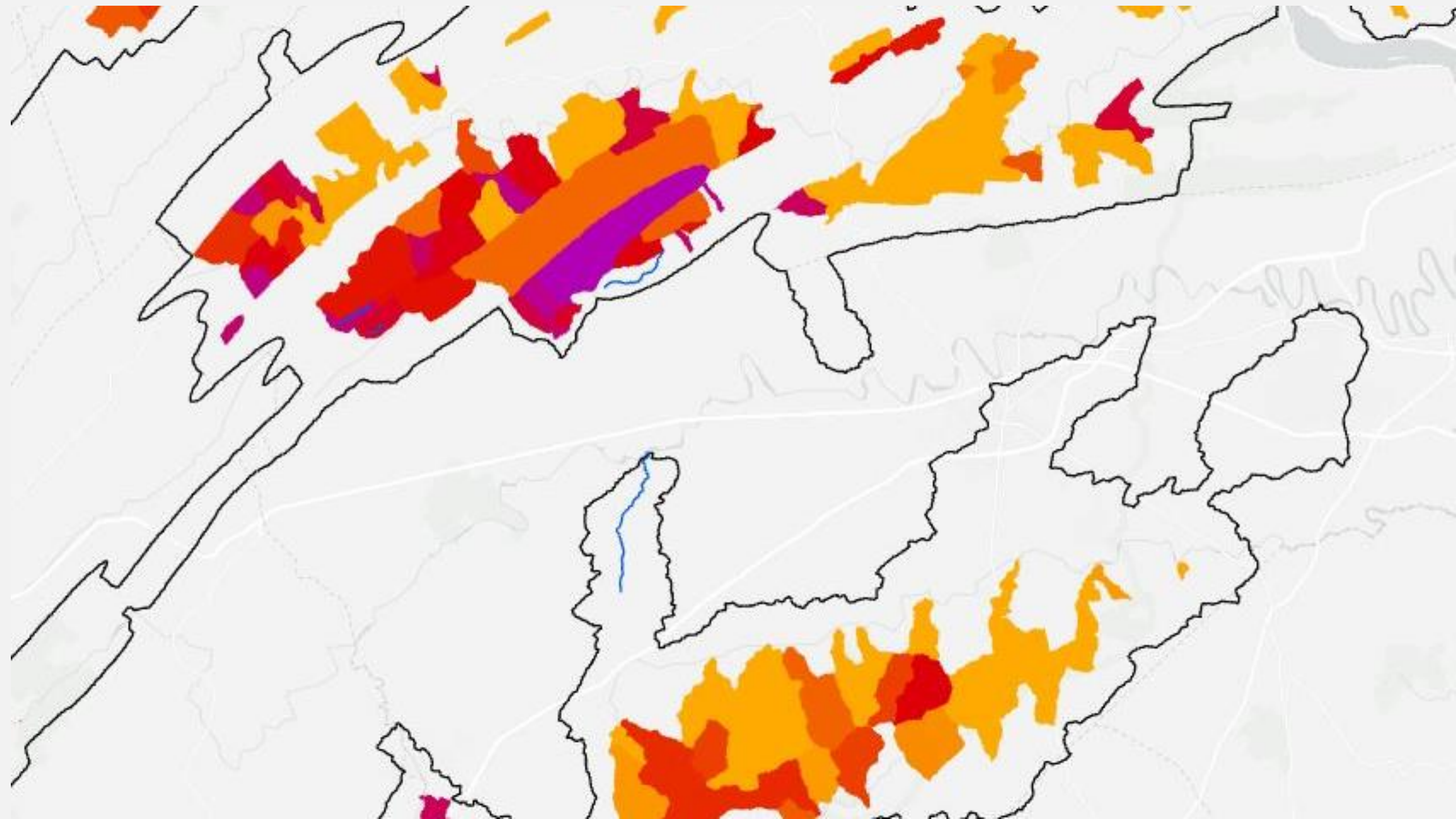


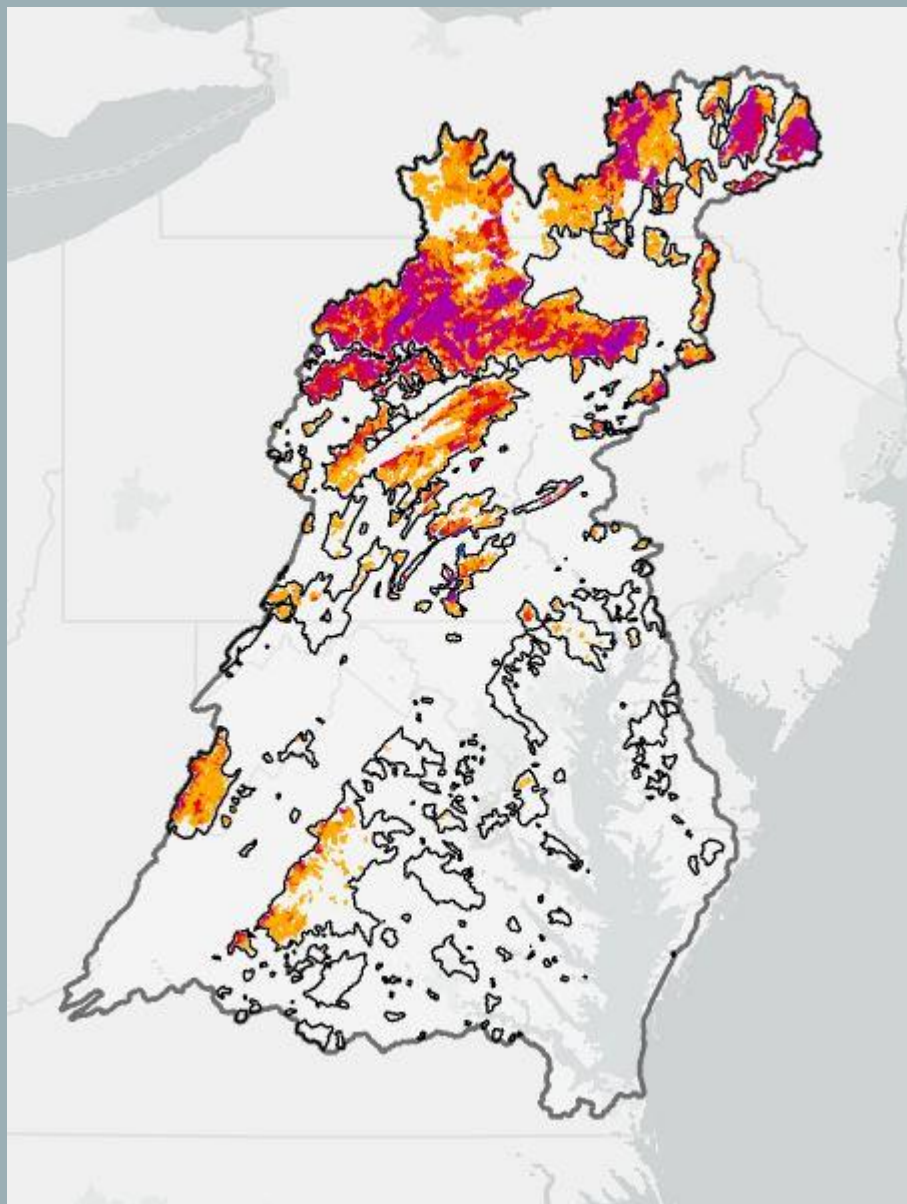
Comparison of % Protected Lands, % Vulnerable Geology



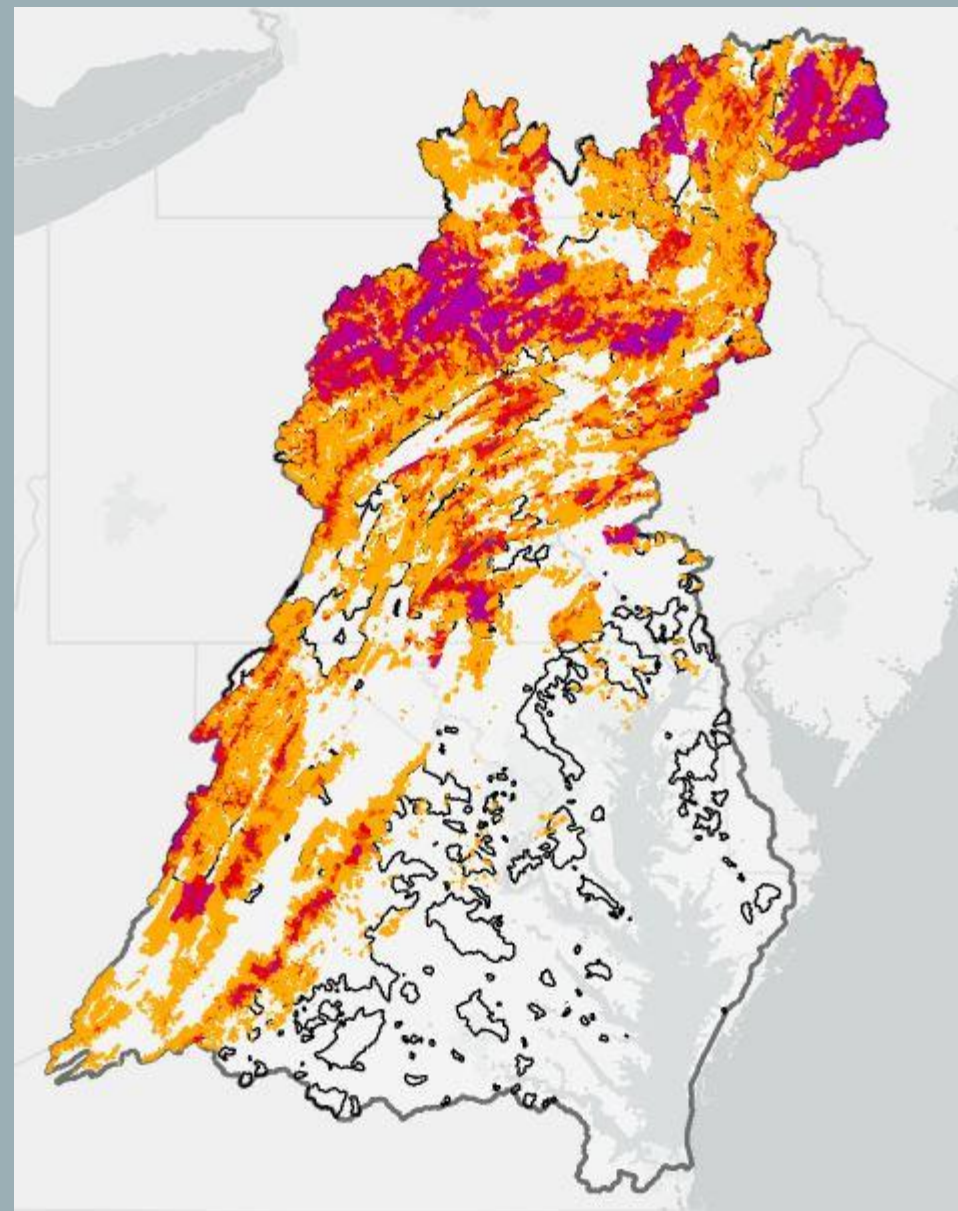
Comparison of % Protected Lands, % Vulnerable Geology







Vulnerable Brook Trout Habitat in Healthy Watersheds



Vulnerable Brook Trout Habitat in Watershed

THANK YOU!!

Renee Thompson

U.S. Geological Survey, Chesapeake Bay Program

Annapolis, MD

rthompson1@usgs.gov / rthompson@chesapeakebay.net

410-267-5749