

Instream Flow Water Reservations in the Mat-Su Basin: Update on Progress

Mat-Su Salmon Science and Conservation Symposium

November 18, 2016

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U.S. Fish and Wildlife Service



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Salmon Passage Restoration Cost – Benefit Prioritization for the Matanuska-Susitna Basin, Alaska

Alaska Fisheries Technical Report Number 108



**Anchorage Fish and Wildlife Field Office
Anchorage, Alaska
June 2016**

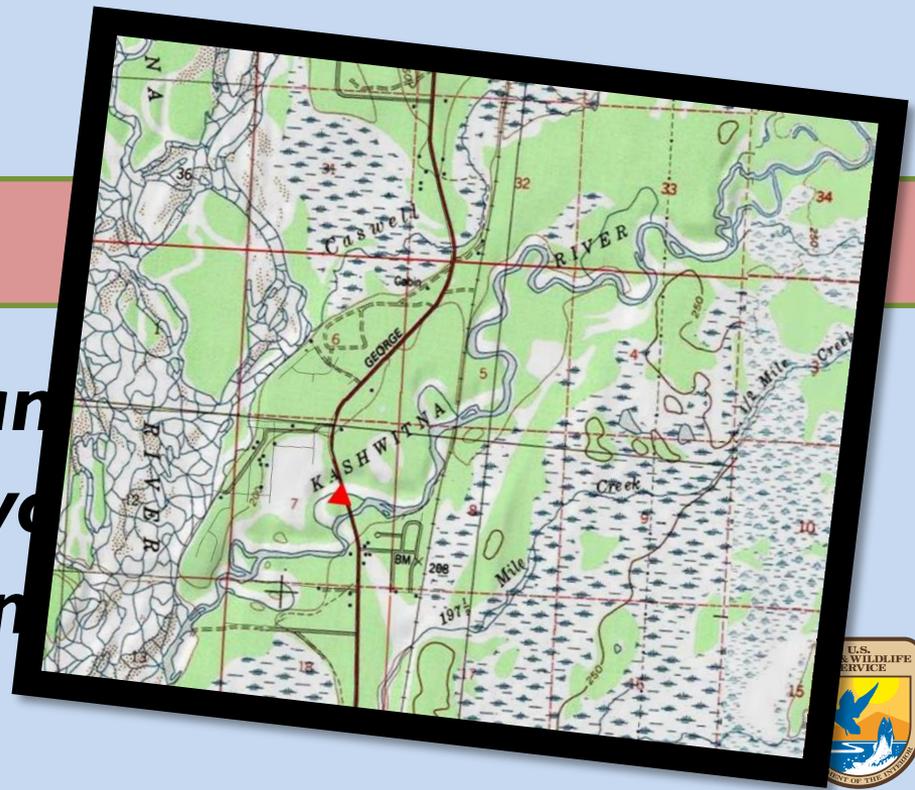


Talk Outline

- Background: What? + Why?
- Hydrologic Data - How?
- Look Back + Next Steps
- Collaboration Potential

Take Home

***More hydrologic data and
are needed to secure water
protect the long term***



Alaska Water Law

- Prior Appropriation Doctrine
- 1966 - Alaska Water Use Act (AS 46.15)
- 1980 - Reservation of Water Amendment (AS 46.15.145)

A reservation of water is a water right that leaves water in the river or lake in order to protect specific water uses.

- “Protection of fish and wildlife habitat, migration, and propagation”
- Held by private individual, group, or agency



Why are water reservations important?

Long term protection of water for salmon

Habitat Area and Access

Summer

- Adults & Juveniles sensitive to temperature
 - Oxygen needs

Winter

- Low flows, limited habitat, Ice



How? Hydrological Data

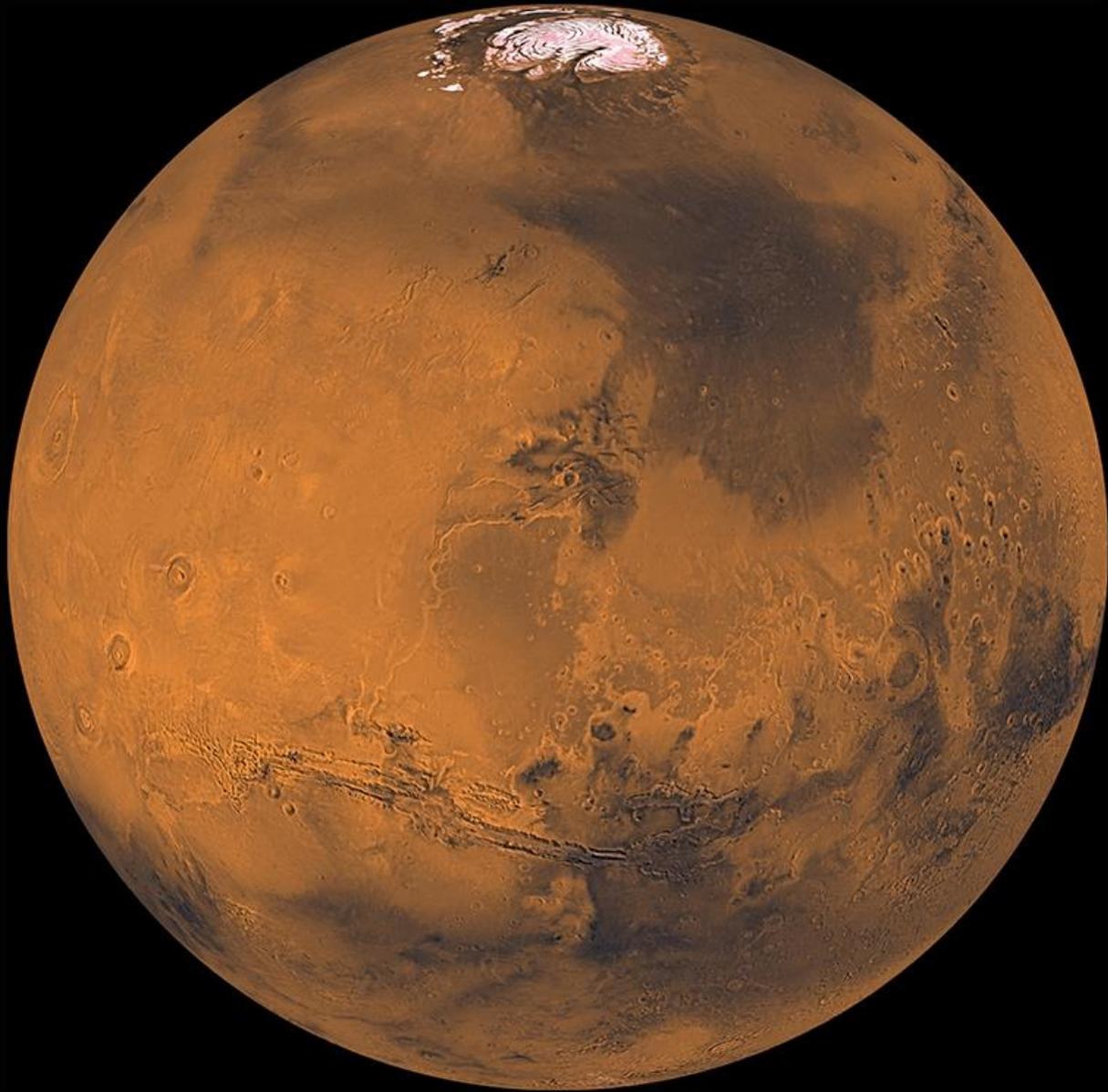
5 Years of flow data required

- Pursuing reservations can be costly
- Prioritization important

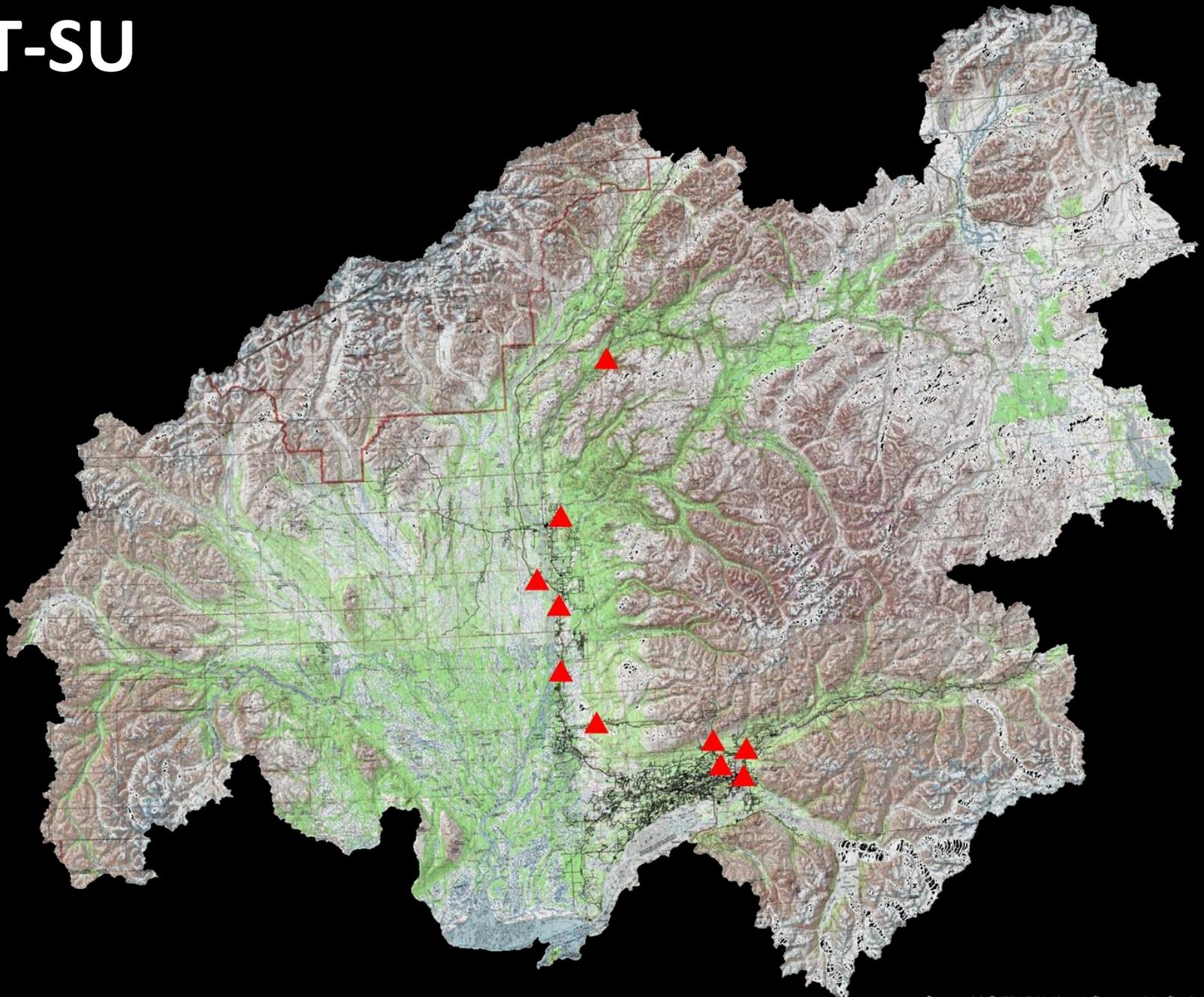
Problem: Alaska lacks extensive hydrologic data



MARS

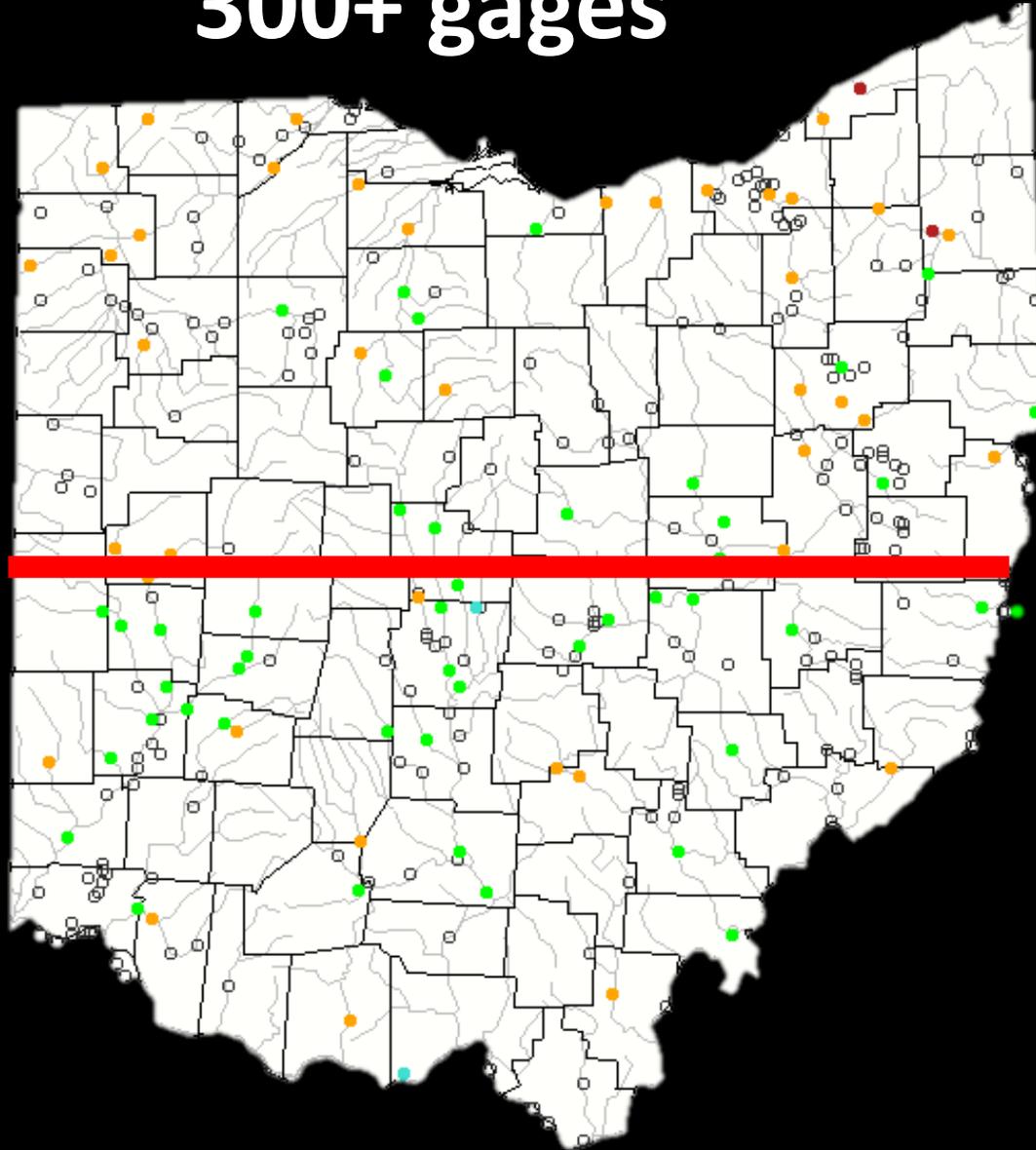


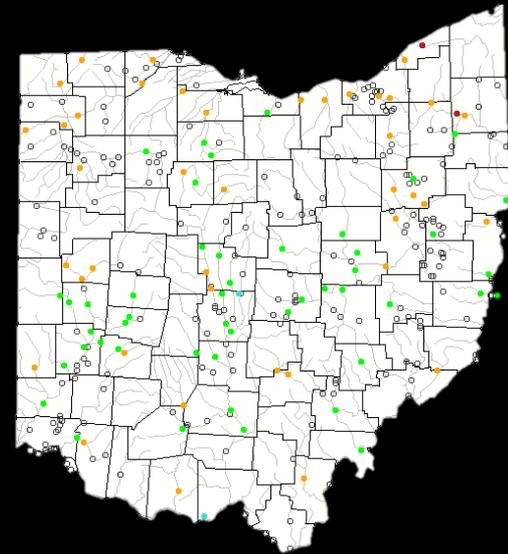
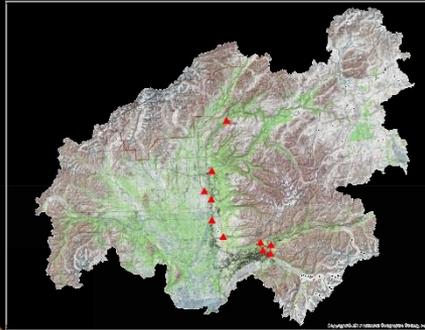
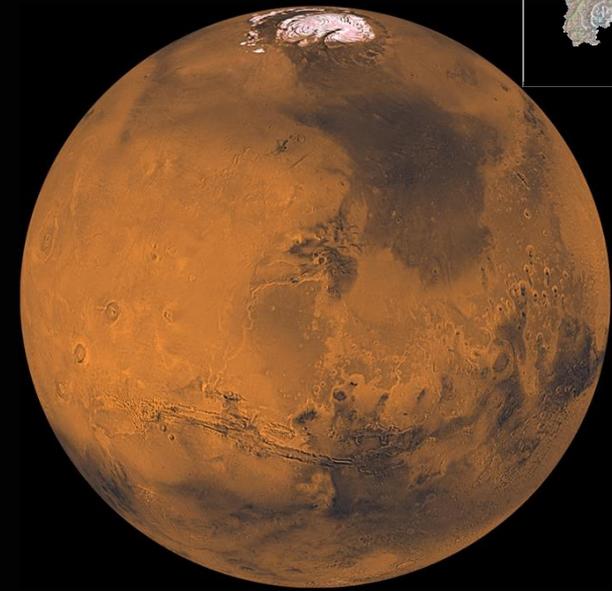
MAT-SU



OHIO

300+ gages





Opportunity

(Not to Scale)

What's been done: ADF&G

- Alaska Department of Fish and Game – Since 1987
 - Statewide Aquatic Resources Coordination Unit (SARCU)
 - Willow Creek
 - Cottonwood Creek
 - Fish Creek
 - Meadow Creek
 - Talkeetna River
 - Deception Creek
 - Deshka River
 - Yentna Creek
 - Sheep Creek
 - Chulitna River
 - Skwentna river
 - Kink River
 - Matanuska River
 - Lake Creek
 - Eska Creek

Past Strategy

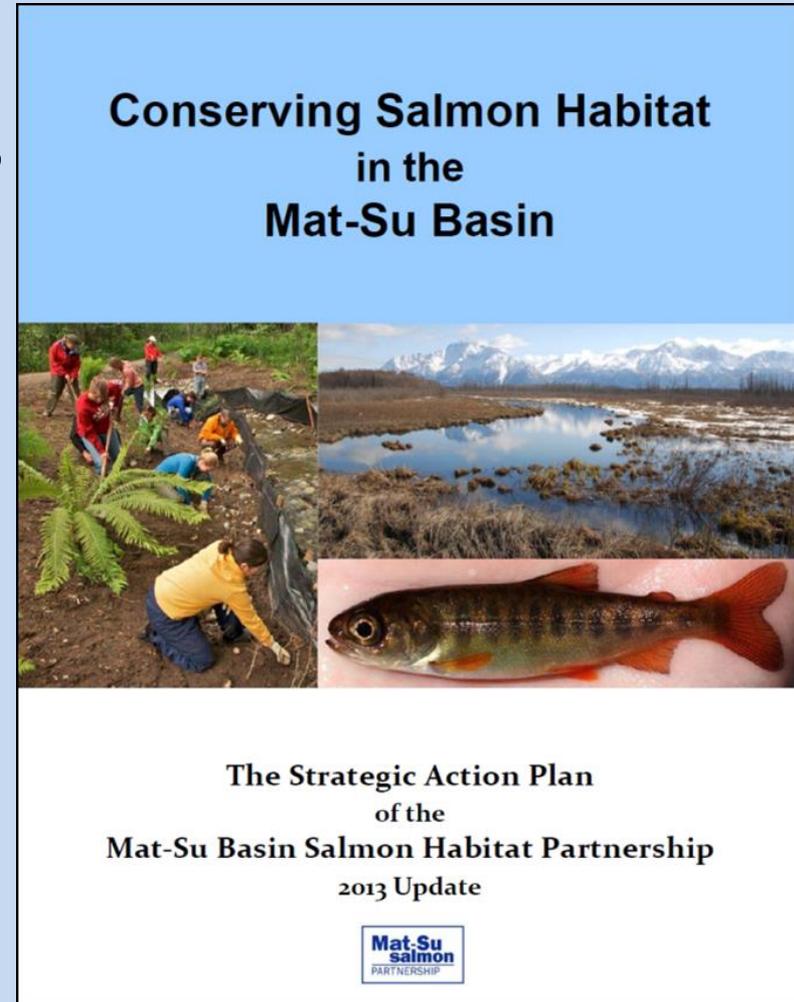
- Applying on streams where data has been collected for other reasons
- Fill out partial records with 5 years of data



What's been done: USFWS & Partnership

2008 – Partnership Strategic Plan
2008 – USFWS partners with USGS
2010- 2016 Partnership project

- Moose Creek
- Little Su
- **Wasilla Creek**
- **Montana Creek**
- **Little Meadow Creek**
- **Kashwitna River**

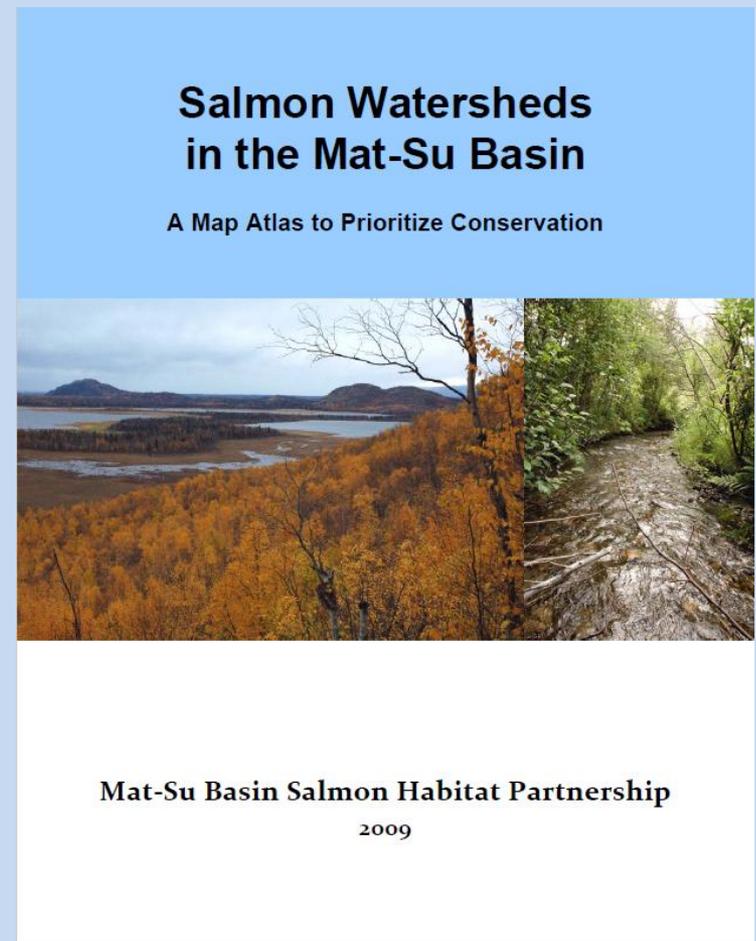


What's Next

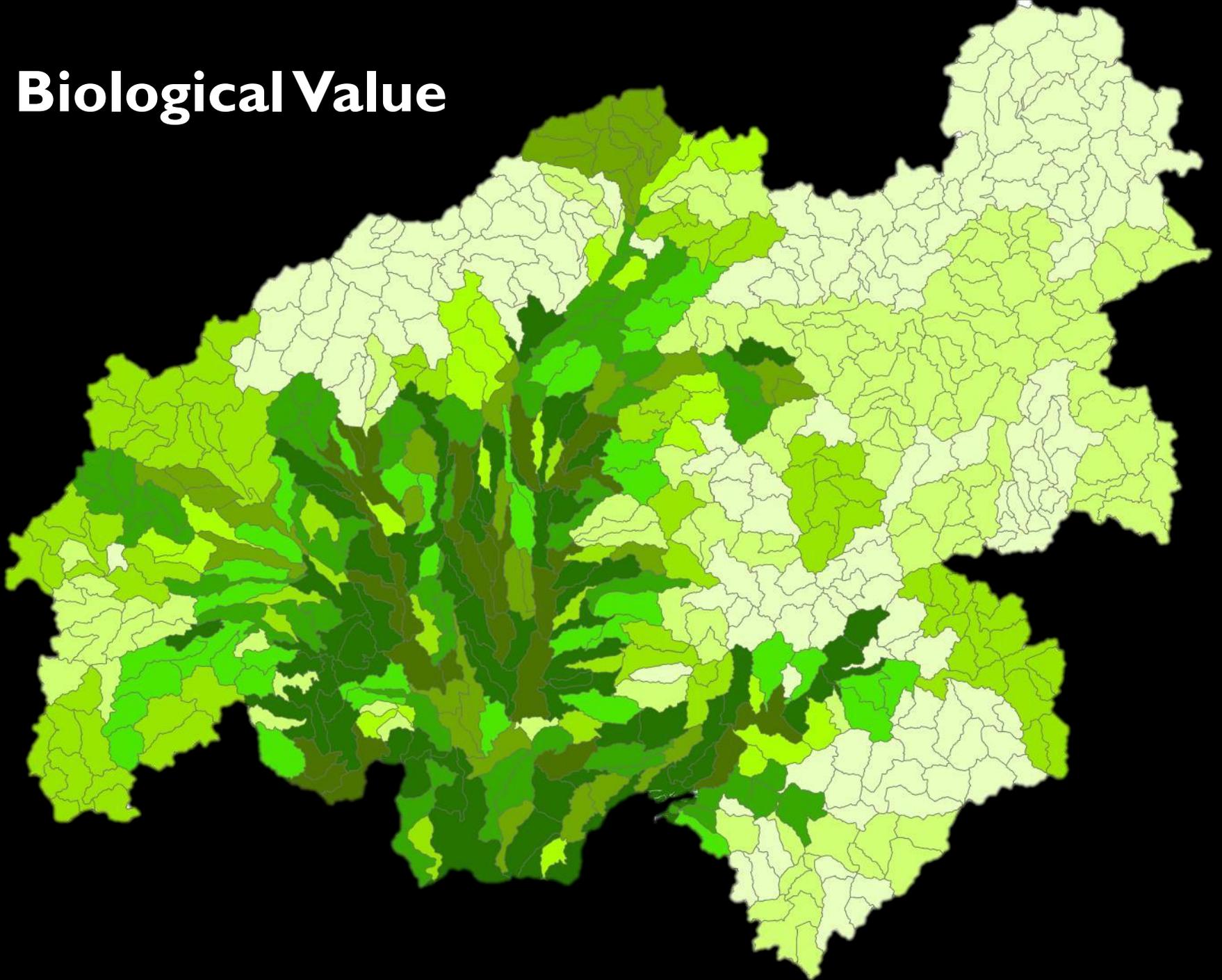
- Selecting next priority waterbodies
- Culminate in a plan for the Mat-Su – Spring 2017
- Supporting Partnership's objective

Method:

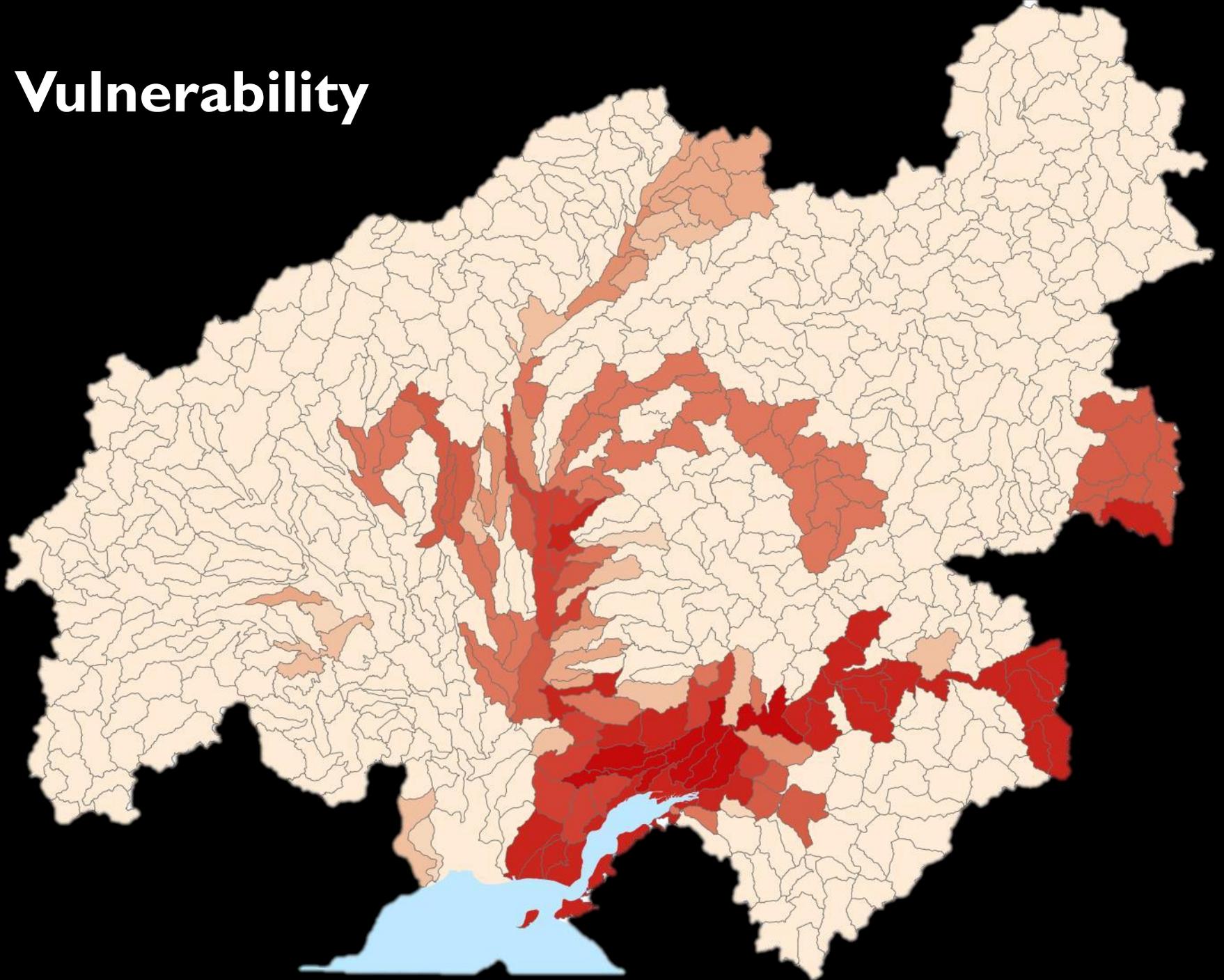
- 40 Candidates Identified
 - With AK Fish and Game
- Biological Value Mapping
- Vulnerability Mapping
 - HUC-12 scale



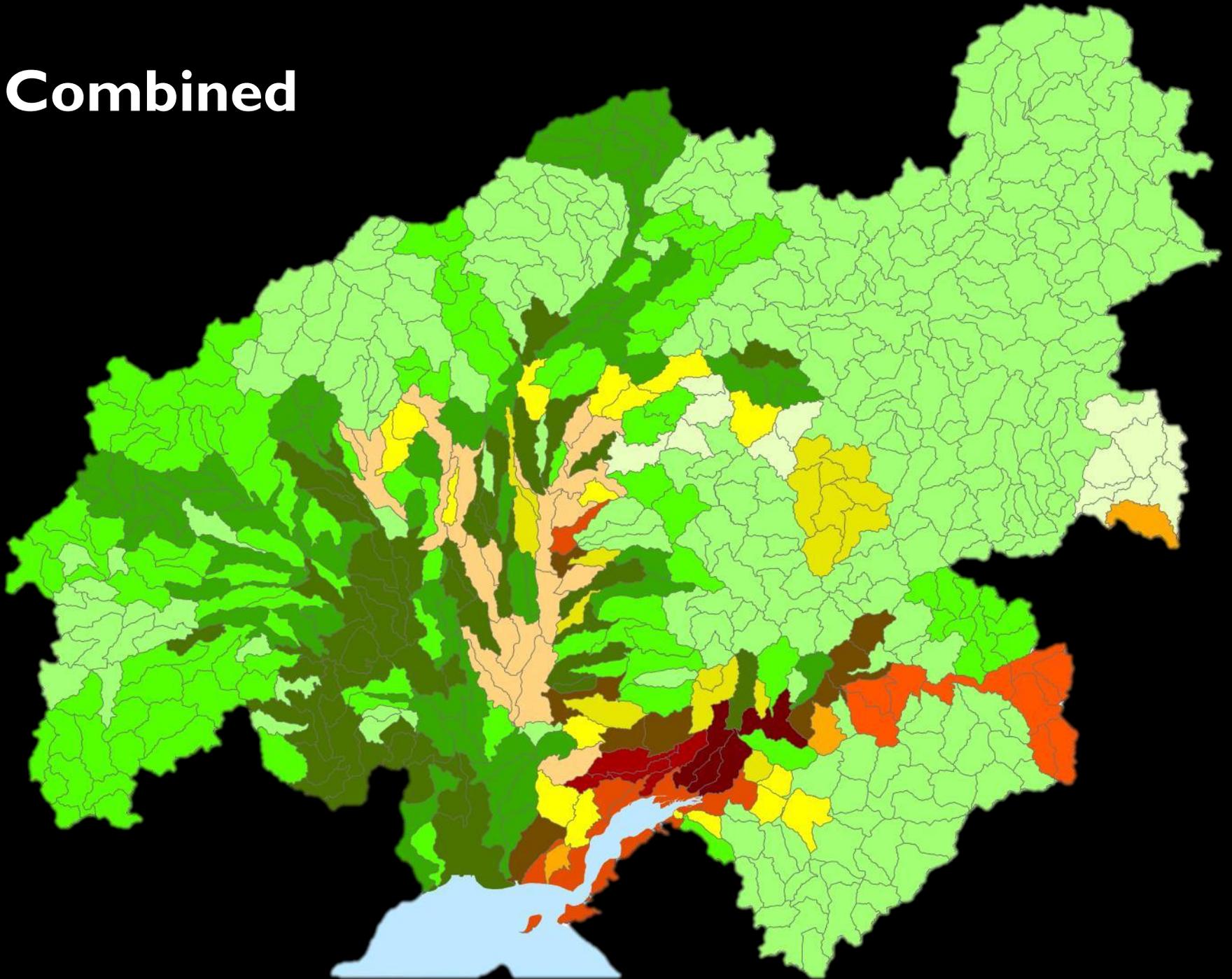
Biological Value



Vulnerability



Combined



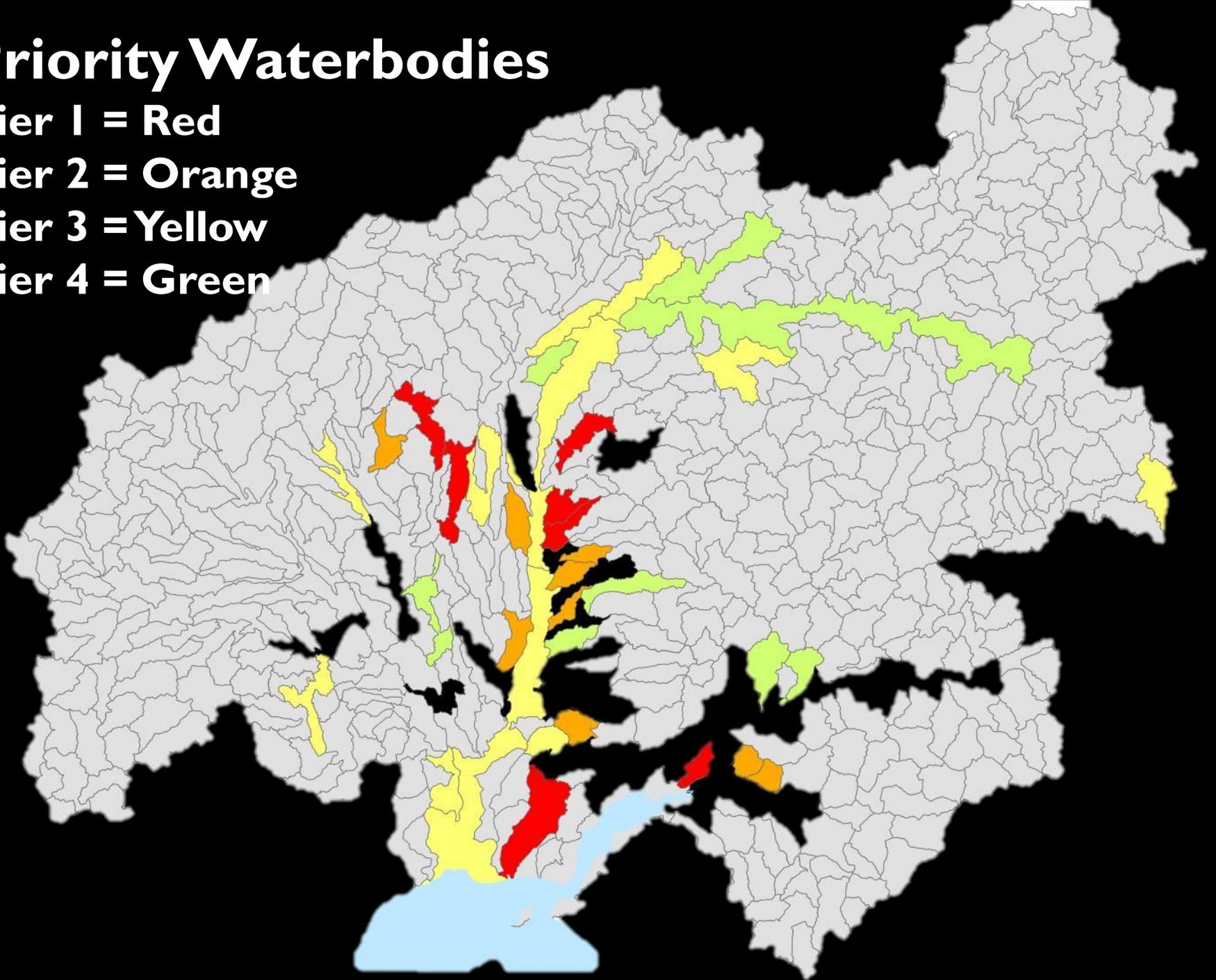
Priority Waterbodies

Tier 1 = Red

Tier 2 = Orange

Tier 3 = Yellow

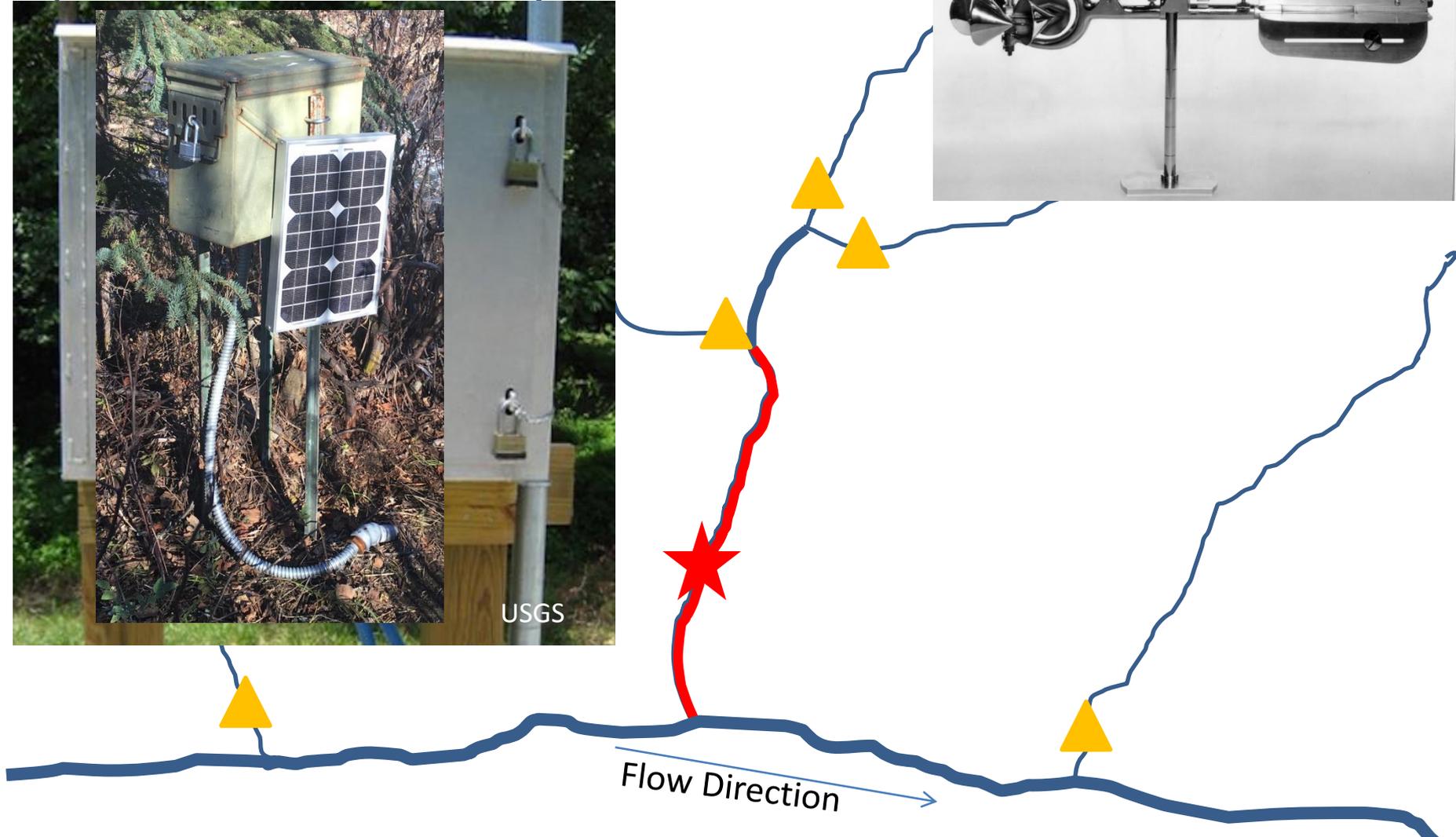
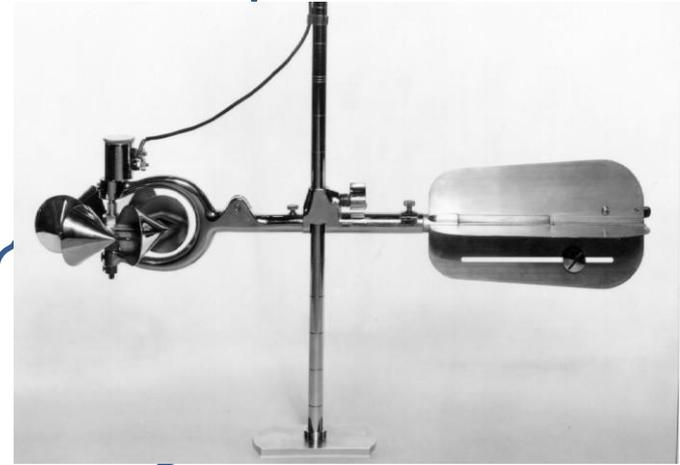
Tier 4 = Green



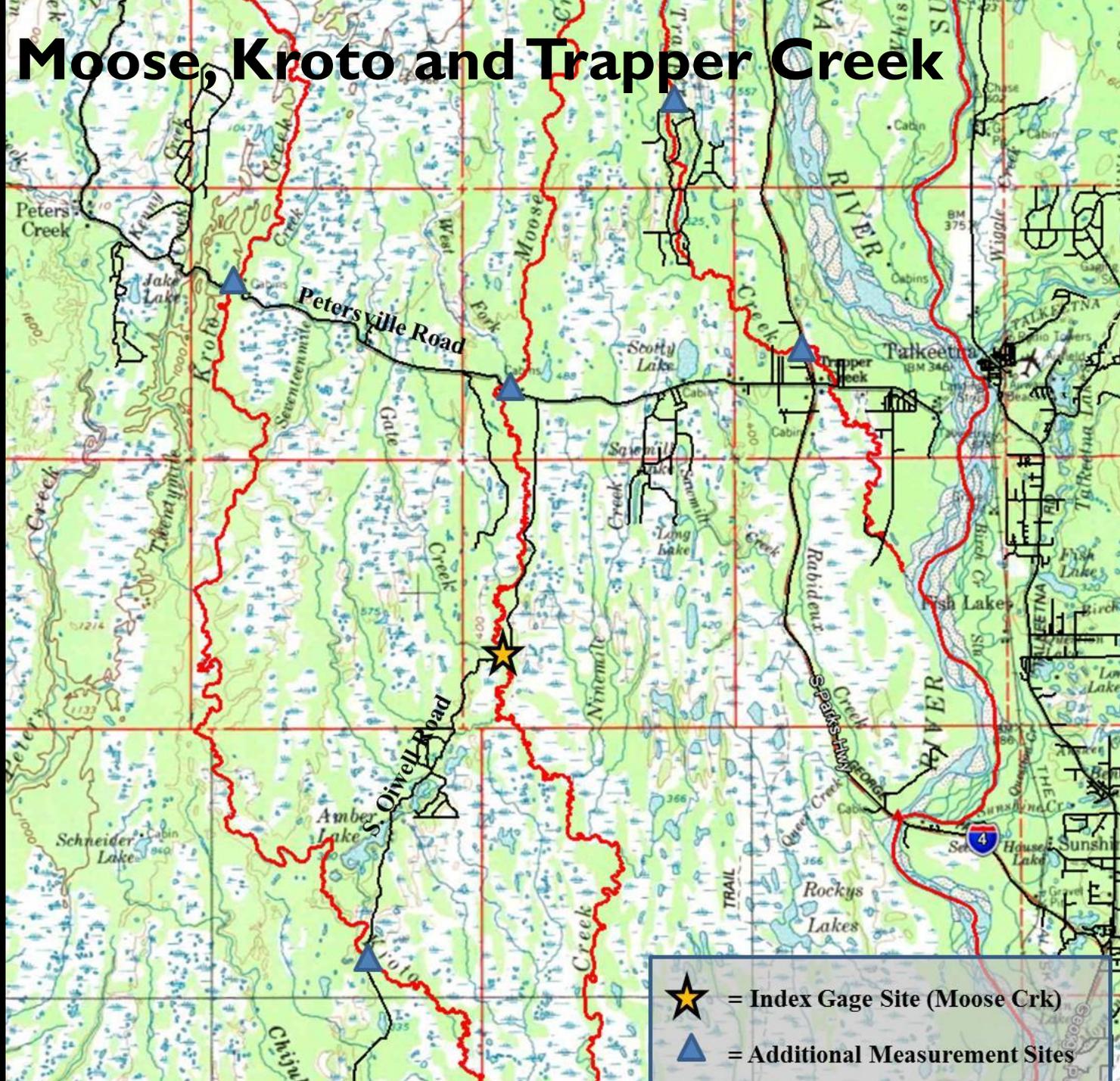
Index Gage Strategy

★ = Index gage site

▲ = Additional Measurement Sites



Moose, Kroto and Trapper Creek



- ★ = Index Gage Site (Moose Crk)
- ▲ = Additional Measurement Sites



Opportunity

Opportunities to Collaborate

Shared needs for gages? Shared funding?

- Fisheries research
 - Bridge design
 - Flood forecasting
 - Recreation
-
- **Partner for temporary gaging and discharge measurements**
 - **Co-applicants with ADF&G**



Opportunities to Collaborate

Additional Data Collection Needs

- Water temperature data collection
- USGS Collection
 - Water Quality
 - Turbidity

Scientific Questions

- Peak flows
- Winter flows



Take Home

More hydrologic data and more collaboration are needed to secure water reservations that protect the long term future of salmon.

Questions?

Acknowledgments

Bill Rice – USFWS

Tom Cappiello- Alaska Department of Fish and Game

Region 7 Refuges Water Resources Office

Mat-Su Basin Salmon Habitat Partnership

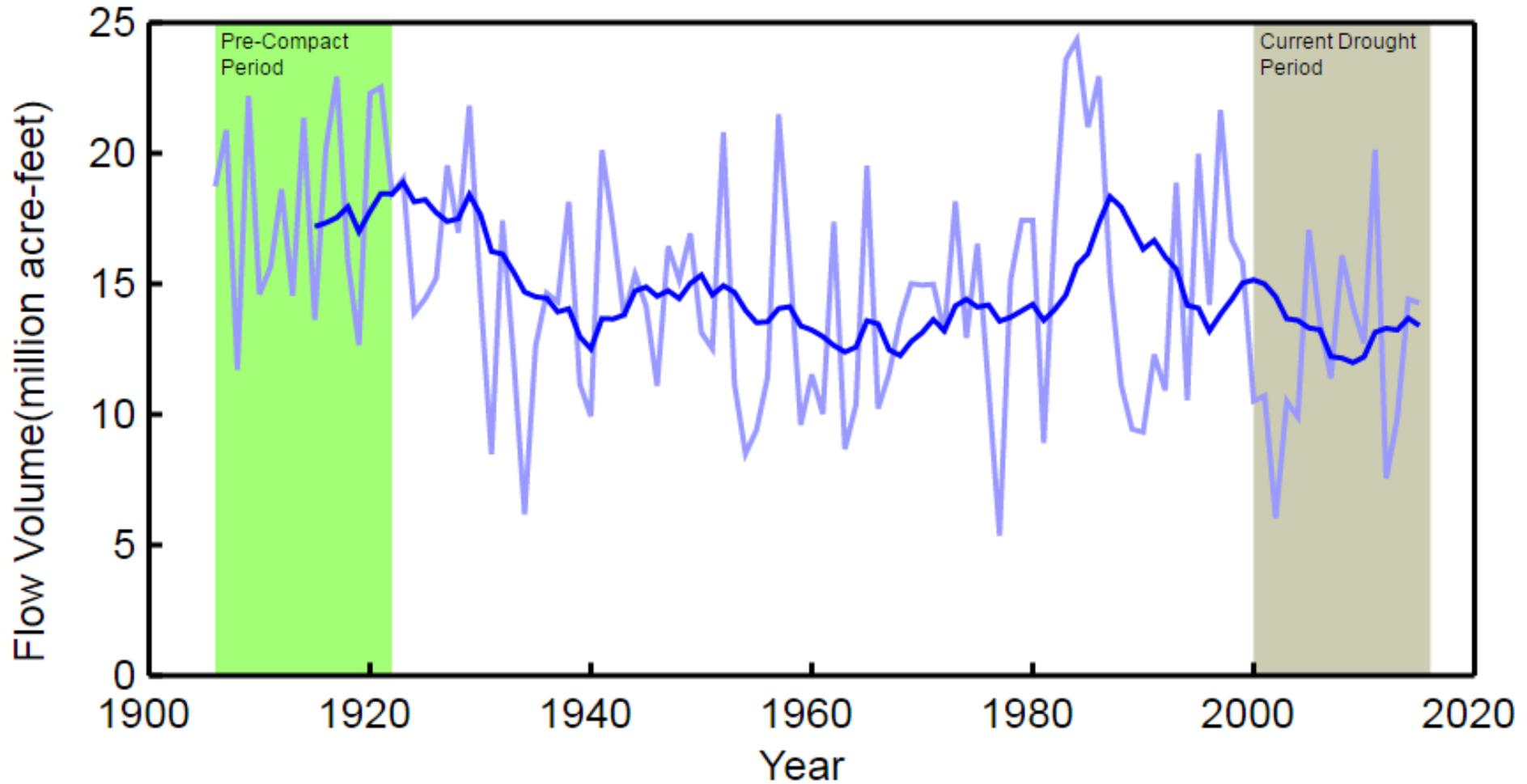
Alaskan Instream Flow Water Rights

- Prior appropriation doctrine
- Fish and Wildlife a “beneficial use”
- First state to make statute for privately held instream rights (1980)

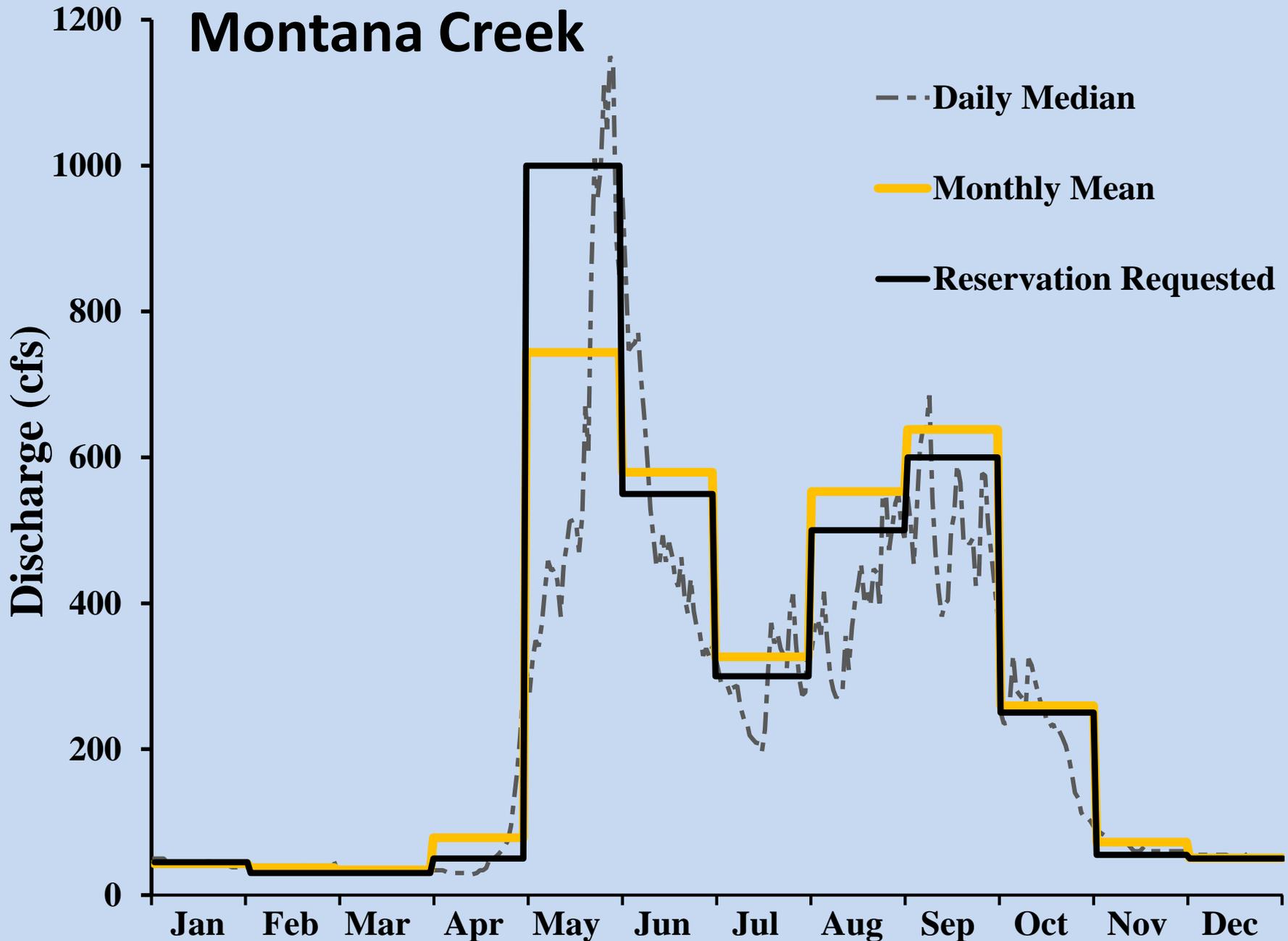
Less than 1% of Alaska's water resources have been allocated.

Opportunity for Conservation

Colorado River



Montana Creek





Alaska News

Warm water killing fish in Mat-Su and Anchorage

 Author: **Sean Doogan**  Updated: May 31  Published August 13, 2015

Unusually warm water temperatures and low river levels are killing salmon in the Matanuska and Susitna valleys. Hundreds of Arctic char, recently **stocked** by the **Alaska Department of Fish and Game**, have also gone belly up in **Campbell Point Lake**, also known as Little Campbell Lake, inside Anchorage's **Kincaid Park**.

Other Considerations

1) Winter Flows and High Flows

- Modified Tennant Method
- Mean Monthly Flow

2) Privately Held Rights

- Chuitna Citizens Coalition
- Tribes



3) Co-applicants with ADFG

- Southwest Alaska Salmon Habitat Partnership
- Challenged by industry group

Tier 1 Waterbodies

Waterbody	Biological Value Rating	Vulnerability Rating	Bio - Vul Ratings Combined	Access
	Scale: 1-9	Scale: 1-10	Scale: 1-14	
Spring Creek	8	10	14	Road
Bodenburg Creek	7	9	11	Road
Question Creek	7	9	11	Road
Sunshine Creek	7	9	11	Road
L. Susitna River	8	8.5	9.5	Road
Birch Creek	8	8	8	Road
Chunilna Creek	9	6	8	Plane/Boat
Kroto Creek	9	7	8	Road
Peters Creek	8	7	8	Road
Trapper Creek	8	6	8	Plane/Boat