TMDL Engagement with Internal and External Partners

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Emily Ayers and Clay Mansfield
ayers.emily@azdeq.gov
mansfield.clay@azdeq.gov

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Overview - Internal Engagement

- Internal engagement efforts for Oak Creek TMDL
  - Permits
  - Watershed Improvement
  - Groundwater

- Other partners we've engaged include:
  - Air Quality
  - Waste Programs

Overview - External Engagement

- External engagement efforts for two TMDLs
  - Statewide Hg
  - Upper Agua Fria

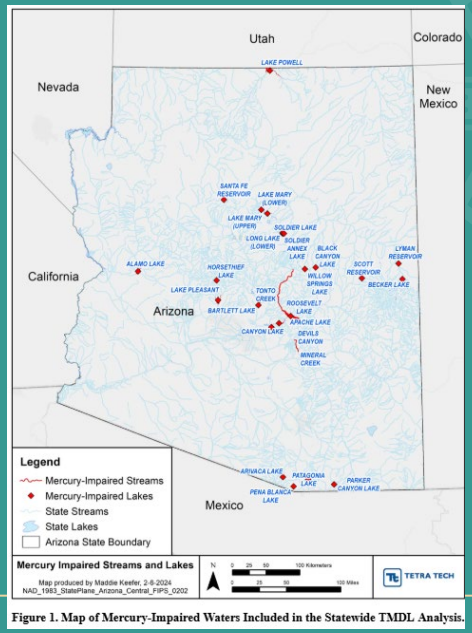


Figure 1. Map of Mercury-Impaired Waters Included in the Statewide TMDL Analysis.

Background - Oak Creek TMDL & Internal Engagement

- 1st TMDL project of the newly dubbed Sampling & Source ID Unit
- Revision of an earlier E. coli TMDL on a highly recreated, “Outstanding Arizona Water”
- Goals of Internal Partner Engagement
  - Expand upon prior TMDL findings with new data
  - Refine TMDL for best use by internal partners
  - Bridge knowledge gaps between teams
- Internals we engaged:
  - Permitting Unit
  - Watershed Restoration Unit
  - Groundwater Protection Unit

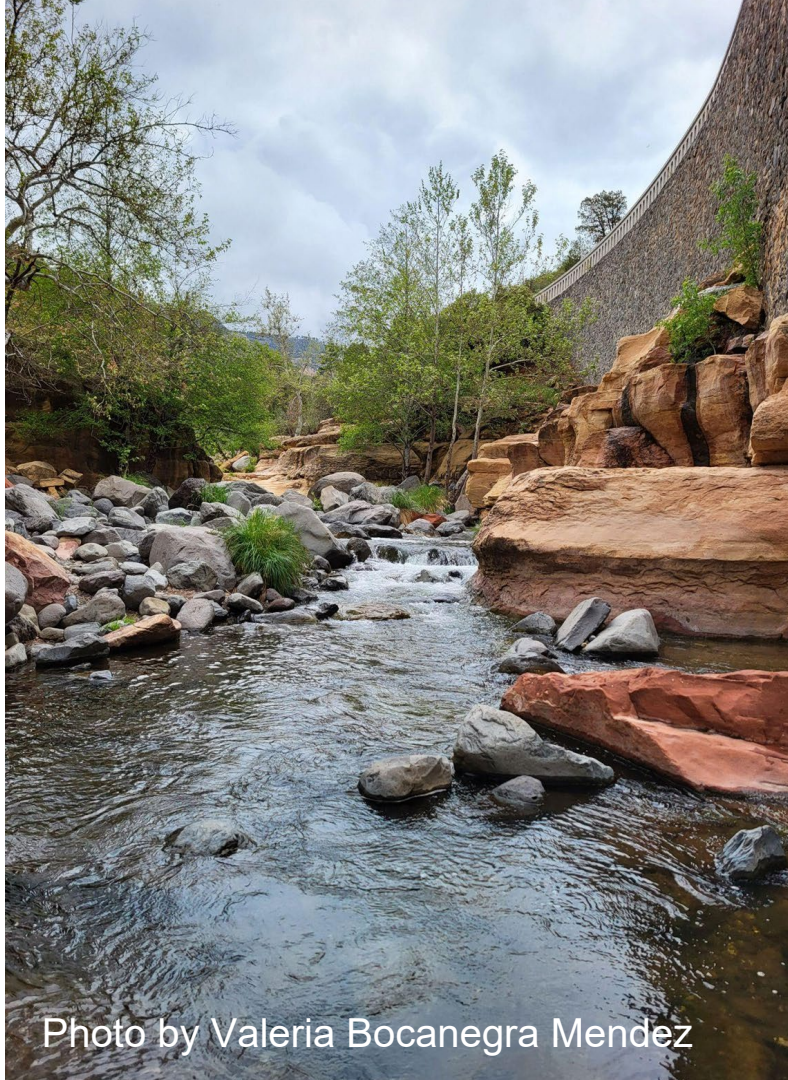


Photo by Valeria Bocanegra Mendez

Permits

"Can you include ranges for each flow category?"

Outcome:
Added a second set of tables to include flow ranges

Table 5. TMDL Numeric Targets for -018A, -018B, and -019

Flow Regime	TMDL Numeric Target (G-cfu/day)
High (0-10%)	1,190
Wet Condition (10-40%)	204
Mid (40-60%)	179
Dry Condition (60-90%)	166
Low (90-100%)	151

Table 5a. TMDL Numeric Targets for -019, -018A, and -018B

Flow Condition	TMDL Numeric Target (G-CFU/day)
High (0 – 10%)	1,190
Wet (10.01 – 40%)	204
Mid (40.01 – 60%)	179
Dry (60.01 – 90%)	166
Low (90.01 – 100%)	151

Table 5b. Flow Condition Ranges for -019, -018A, and -018B

Flow Condition	Minimum Flow Rate (cfs)	Maximum Flow Rate (cfs)
High (0 – 10%)	86	9470
Wet (10.01 – 40%)	32.3	85.9
Mid (40.01 – 60%)	30.3	32.2
Dry (60.01 – 90%)	27.2	30.2
Low (90.01 – 100%)	17.2	27.1

Permits

"Can you expand upon the MS4 Wasteload Allocations?"

Outcome:
Expanded the MS4 WLA table to include allocations in G-CFU/day

MS4 Permittees				
AZS000018	Arizona Department of Transportation (ADOT)	0.1%	High and Wet	-019, -018A, -018B, -018C, -017, and -016
AZG2016-002	City of Sedona	4%	High and Wet	-019, -018A, -018B, -018C, -017, and -016

Segment	Flow Condition	WLA (G-CFU/day)
Arizona Department of Transportation (ADOT) (AZS000018)		
-019	High	1.2
	Wet	N/A
-018A	High	1.2
	Wet	N/A
-018B	High	1.2
	Wet	N/A
-018C	High	13.7
	Wet	0.24
-017	High	13.7
	Wet	0.24
-016	High	13.7
	Wet	N/A
City of Sedona (AZG2021-002)		
-018C	High	54.8
	Wet	9.4
-017	High	54.8
	Wet	9.4
-016	High	54.8
	Wet	N/A

Watershed Improvement

Information on and documentation of ongoing and future restoration efforts in Oak Creek

Additions to the TMDL:

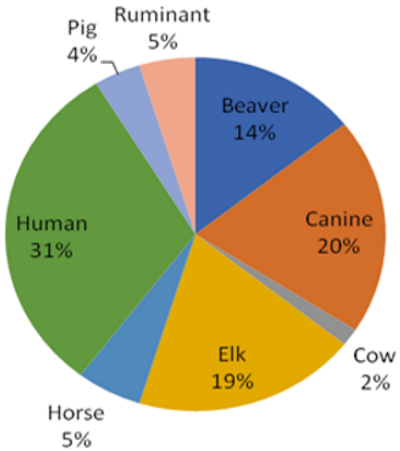


Figure 19. Preliminary Data on the Relative Contribution of Each Host to the Overall Bacteroides Positives Detected in Oak Creek and Surrounding Tributaries (NAU, 2024)

Preliminary data from recent Microbial Source Tracking study of Oak Creek

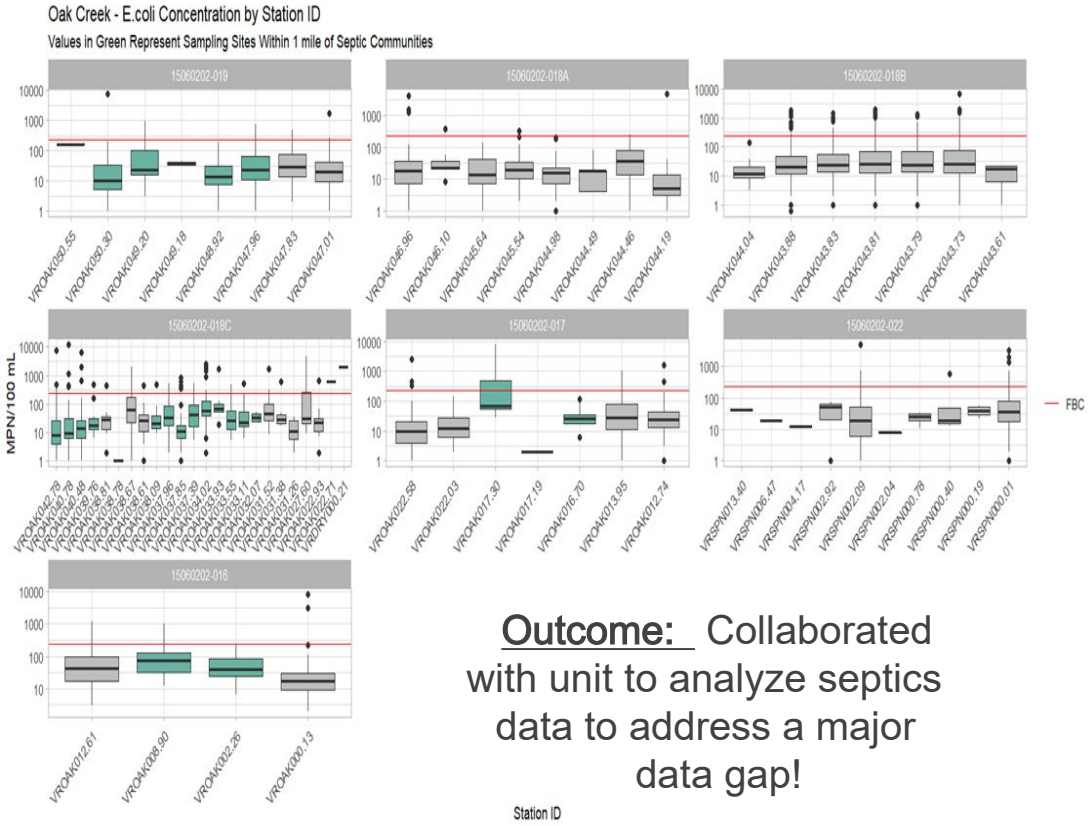
Watershed Improvement

Photo by Richie Graham Photography, courtesy of the National Forest Foundation.

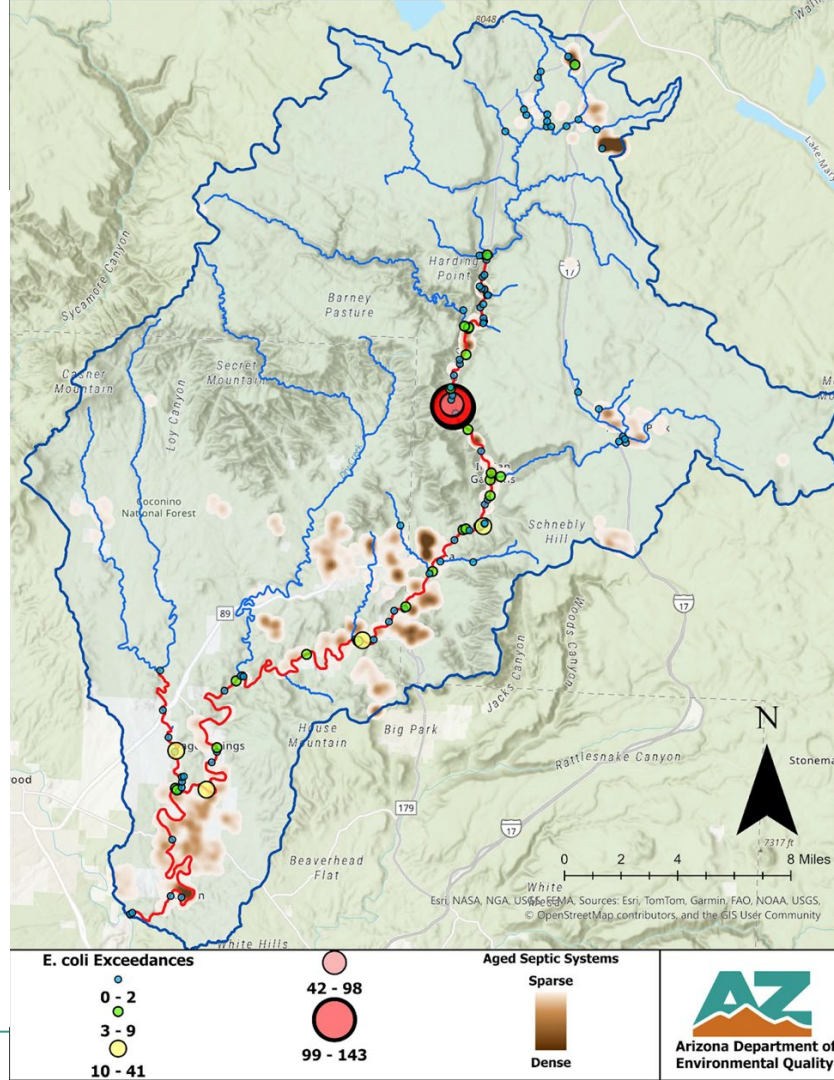
Winter Snowmelt in Oak Creek (Photo from ADEQ and affiliated NGO partners)

Additions to the TMDL: Photos for use in the TMDL report !

Groundwater Protection



Outcome: Collaborated with unit to analyze septics data to address a major data gap!



External Engagement

Statewide Mercury TMDL

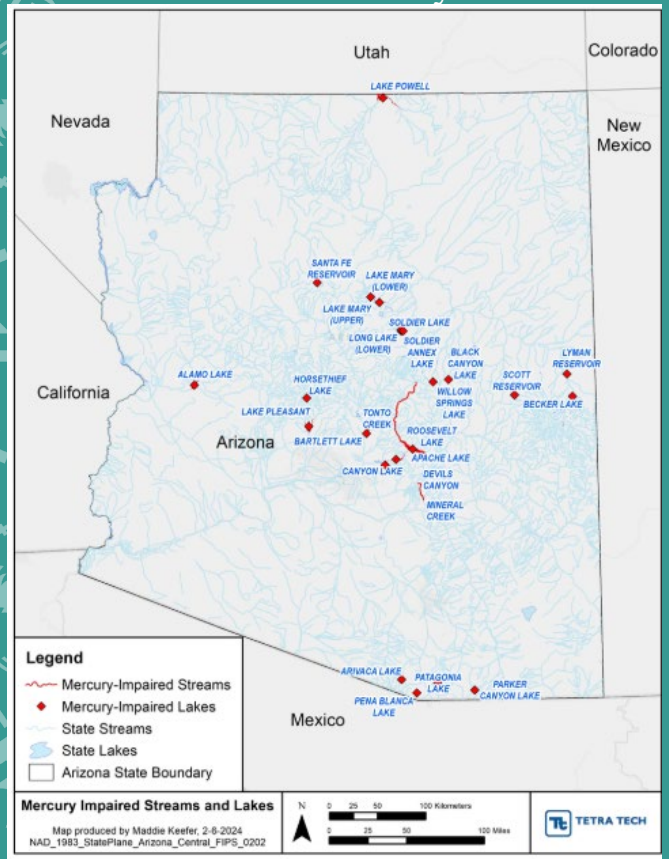


Figure 1. Map of Mercury-Impaired Waters Included in the Statewide TMDL Analysis.

Upper Agua Fria TMDL

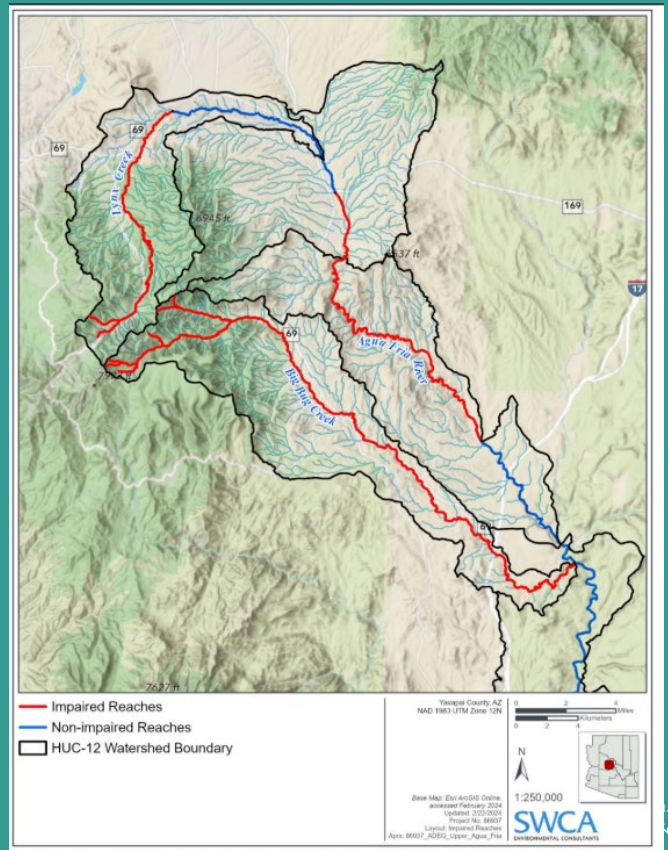
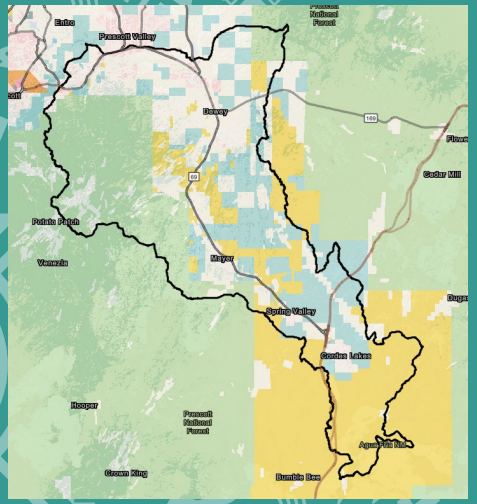
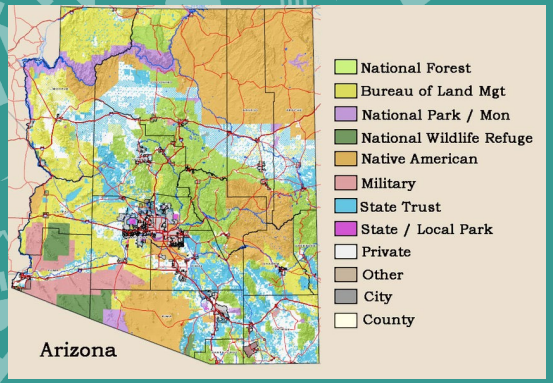


Figure 1. Map of impaired streams and associated HUC-12 watersheds in the Upper Agua Fria River Watershed.

Identifying Stakeholders

Start with land ownership map, reach out, then keep asking!



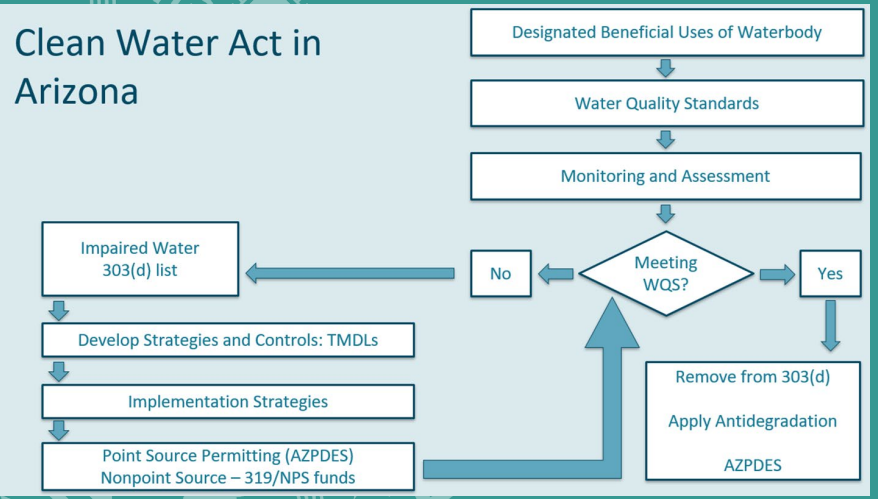


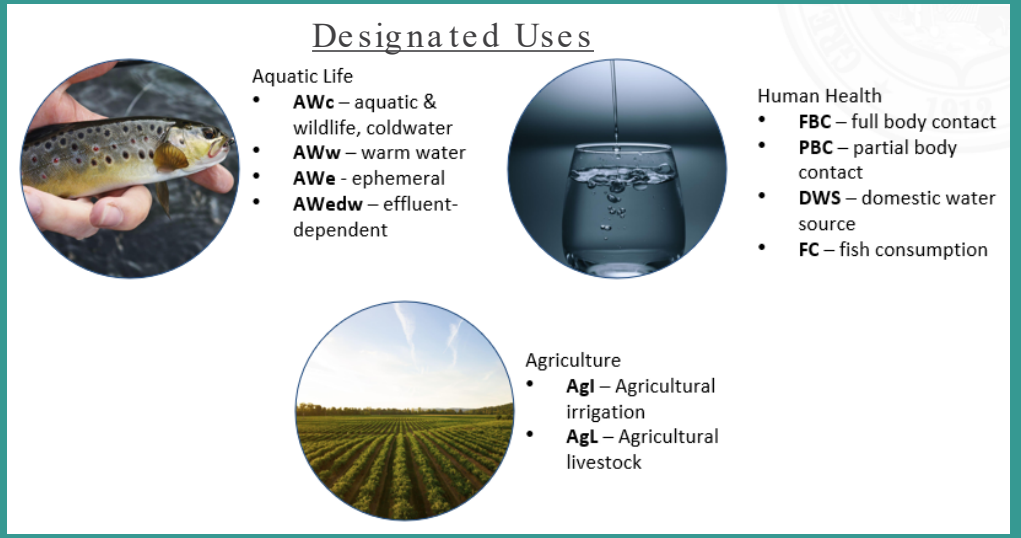
Additionally:

- Permitted dischargers
- Public works depts
- Community environmental boards
- HOAs

Initial Engagement Meeting

- Goal: Go from no prior knowledge to baseline knowledge within an hour





$$TMDL = WLA + LA + MOS$$

Initial Engagement Meeting

- Honesty and humility
- Encourage questions when they arise
- Most important for private citizens
  - Trust
  - Transparency
- Most important for public agencies
  - Will this affect any of my duties?

Goals for Today

- Introduce and establish myself as point of contact for the UAF TMDL
- Engagement - Why am I reaching out?
- Overview – TMDLs
- Overview – UAF TMDL

Stakeholder Engagement – Why?

- Keep stakeholders informed on water quality projects in the state
  - AZGFD, USFS, State Parks, BLM, non-profits, private land owners
- Maintain transparency
- Collaborate and receive input
- Build trust and improve interagency communication

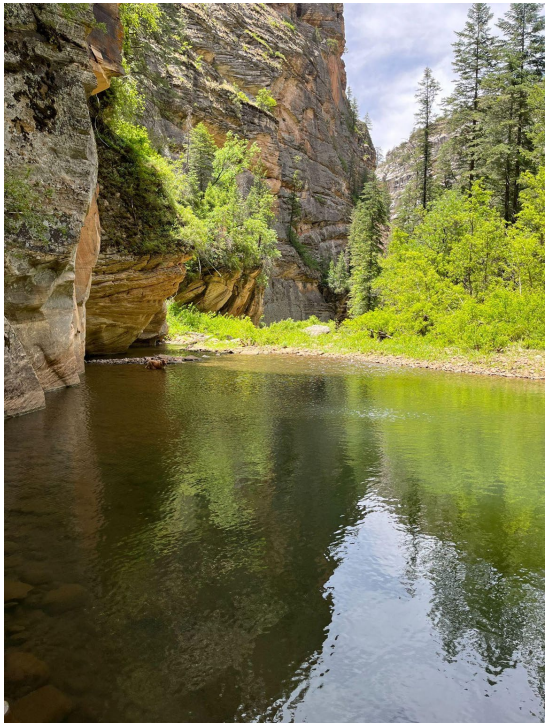
Lessons Learned

- Engage internals **FIRST** and **OFTEN**
  - **First:** Gives a heads up to your permitting folks & others if externals have related questions during engagement (“how will this affect my permit?”)
  - **Often:** Sharing data analyses, tech memos, and other early stage documents with internals can prevent lengthy review and revision cycles during the TMDL drafting phase

- Internals can provide alternative perspectives on your TMDL projects
  - Bridging data gaps that you or your contractor may not be fully equipped to handle alone
  - Adding cohesion that makes the final TMDL a useful tool instead of “just another document”

- Be clear to externals about what a TMDL is and what it is not
- External engagement - hard to identify and contact them all at once - ongoing throughout project
- #1 concern from externals: How does this affect me or my duties?

Water in Arizona!



West Clear Creek

Agua Fria National Monument

Colorado River near Lee's Ferry

West Fork Black River