

# Watershed Planning Update and Tools



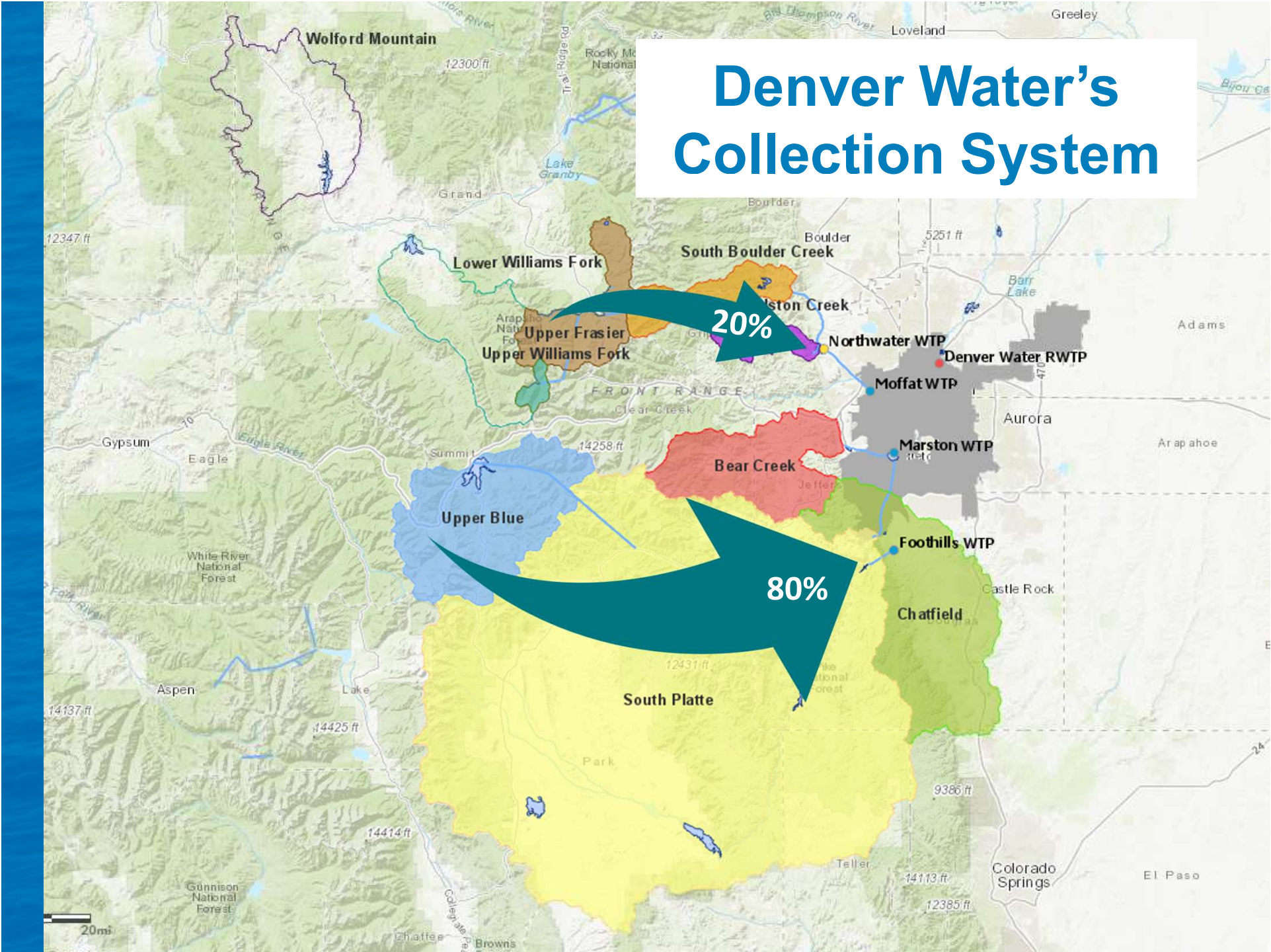
*SPRUWP Quarterly Meeting  
August 18, 2020*

# Denver Water Facts

- Established in 1918
- Governed by Board of Water Commissioners  
(not the City and County of Denver)
- Serve 1.5 million people  
(25% of state's population)
- Less than 2% of water used in the state
- Total watershed area:  
4,000 square miles  
(State's third largest public landowner)

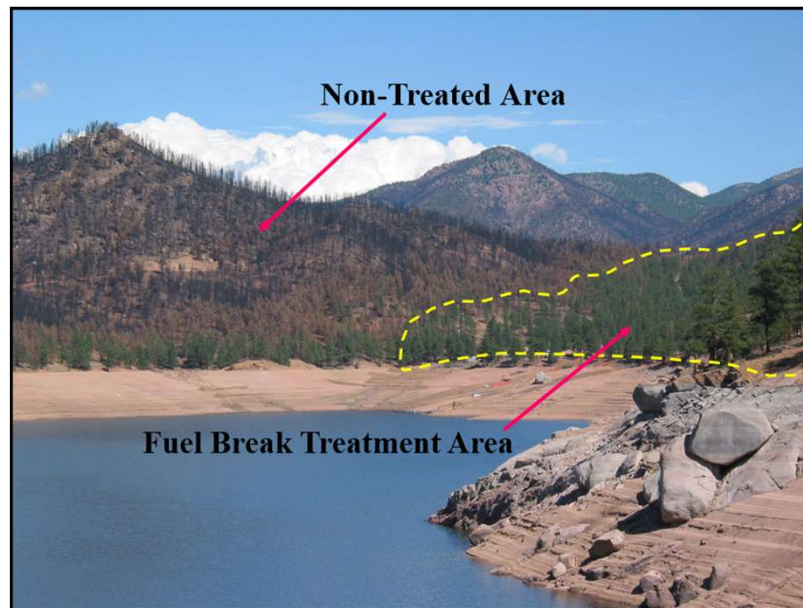


# Denver Water's Collection System



# Denver Water Land Management

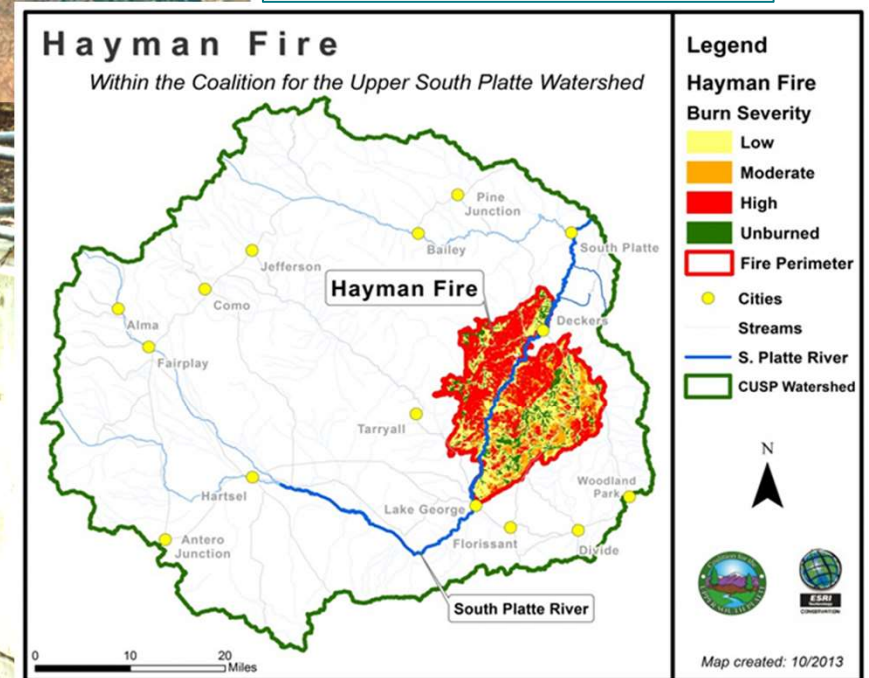
- Own 60,000 acres
- CSFS Denver Water's Forester since 1985
- ~19,000 acres treated in last decade
- Defensible space, fuel breaks, noxious weeds, infrastructure and stand improvements



# From Forests to Faucets Partnership

1996 Buffalo Creek Fire

2002 Hayman Fire



# From Forests to Faucets Partnership

**2010:** Partnership with  
USFS

\$16.5M dollar-for-dollar  
match for:

- Fuels Reduction
- Restoration
- National Forest

**2017:** Partnership with  
USFS, **CSFS, NRCS**

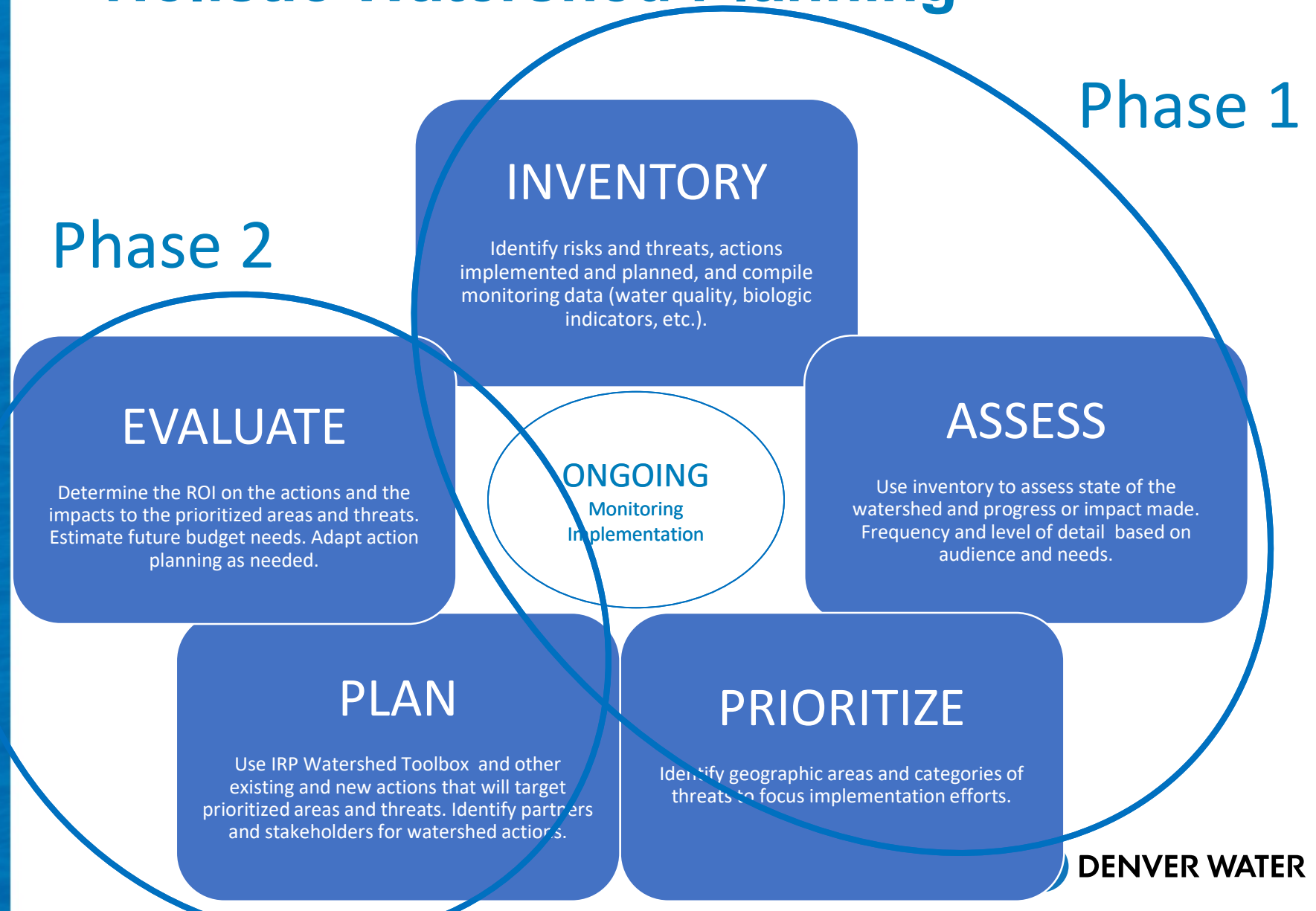
\$16.5M dollar-for-dollar  
match for:

- Fuels Reduction
- Restoration
- National Forest **and  
private lands**



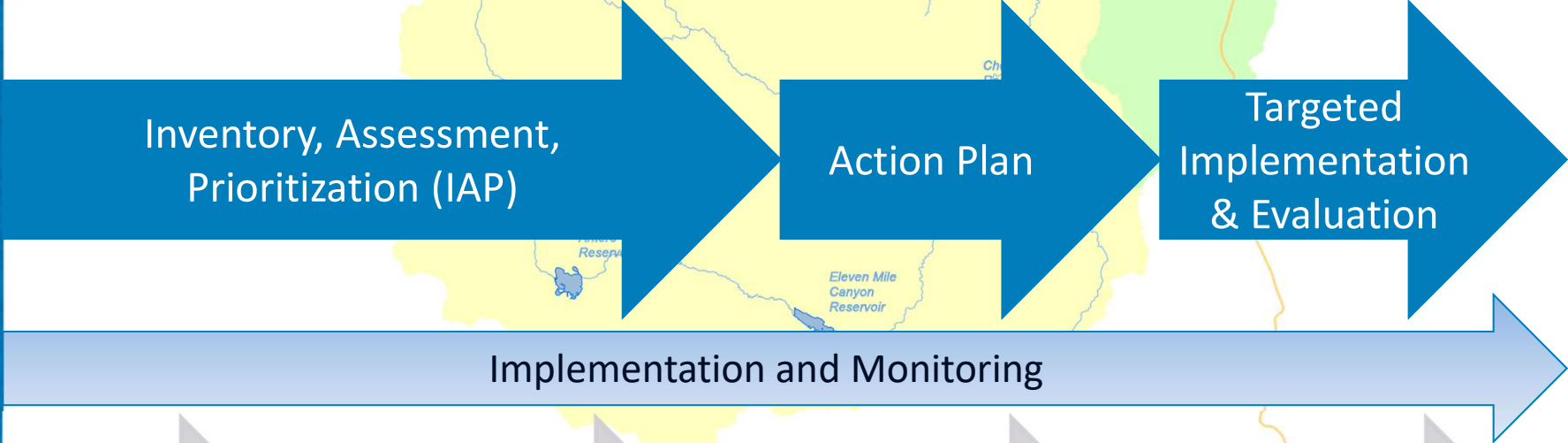
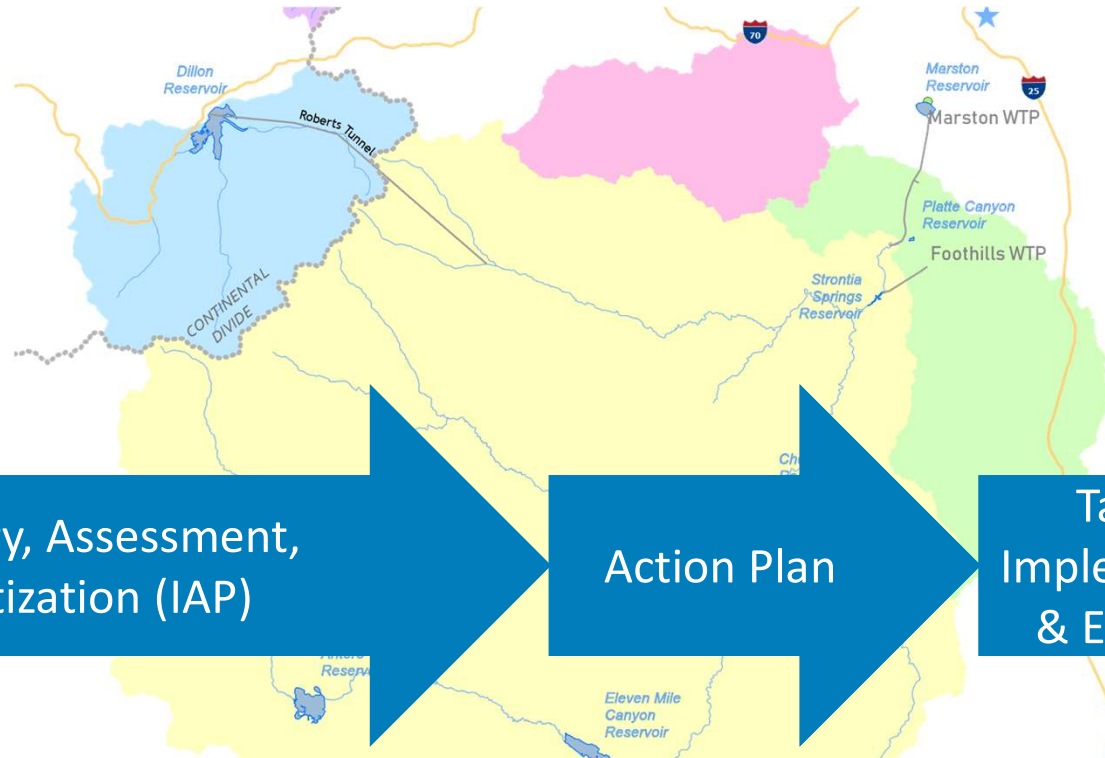
## Denver Water Investment of \$33 Million

# Holistic Watershed Planning



**DENVER WATER**

# Watershed Planning for the South Collection System





# Watershed Planning for the North Collection System



Inventory, Assessment,  
Prioritization (IAP)

Action Plan

Targeted  
Implementation  
& Evaluation

Implementation and Monitoring

June  
2023

North System

Dec  
2024

Priority  
Areas +

2025 -  
2028

Priority  
Areas +

# Denver Water Watershed Values



## Drinking Water Treatability

*Provide high quality water at an affordable rate*



## Infrastructure Protection

*Protect collection system, watershed assets, and access to assets*

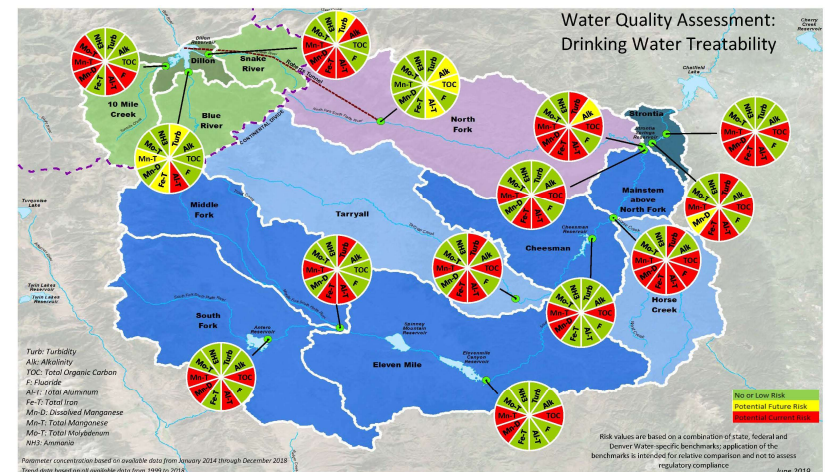


## Community & Environmental Stewardship

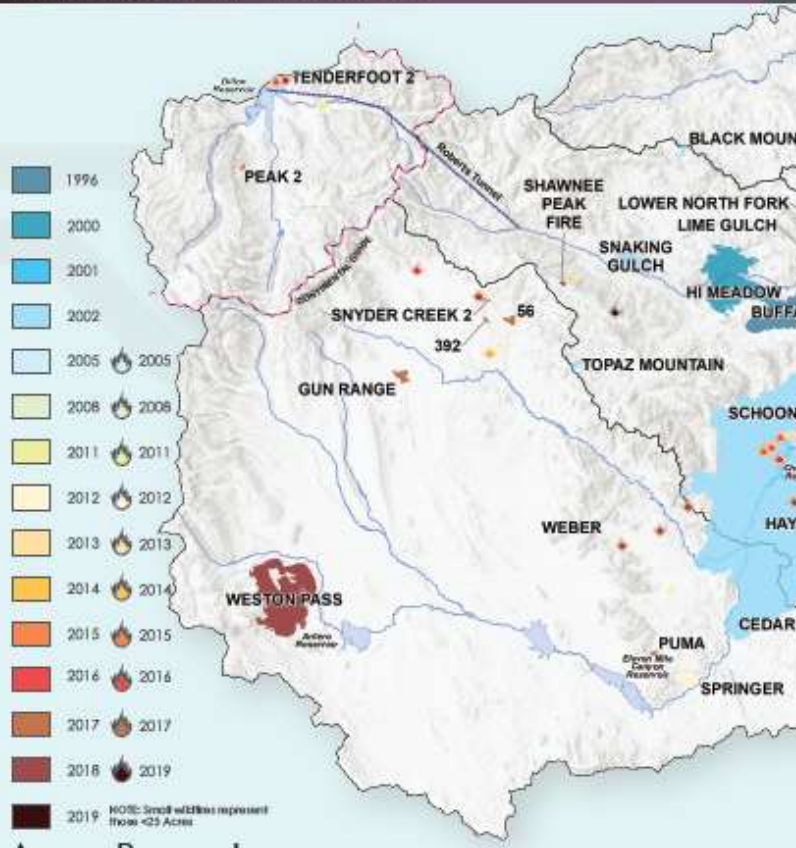
*Foster partnerships to sustain healthy and resilient watersheds*

# Tools and Resources Internal for Now ☹️

- Watershed Steering Committee
- Watershed Document Inventory SharePoint
- Watershed Spatial Inventory (GIS)
- Water Quality Database (LIMS, CDSN, WQX)
- Water Quality Results Tools
  - Summary Tables/Graphics by Basin
  - Constituent Summaries
  - Water Quality Assessment Tool
- Reports/Narratives/Text
  - Detailed Final Report
  - 1 or 2-pagers
  - Story Maps



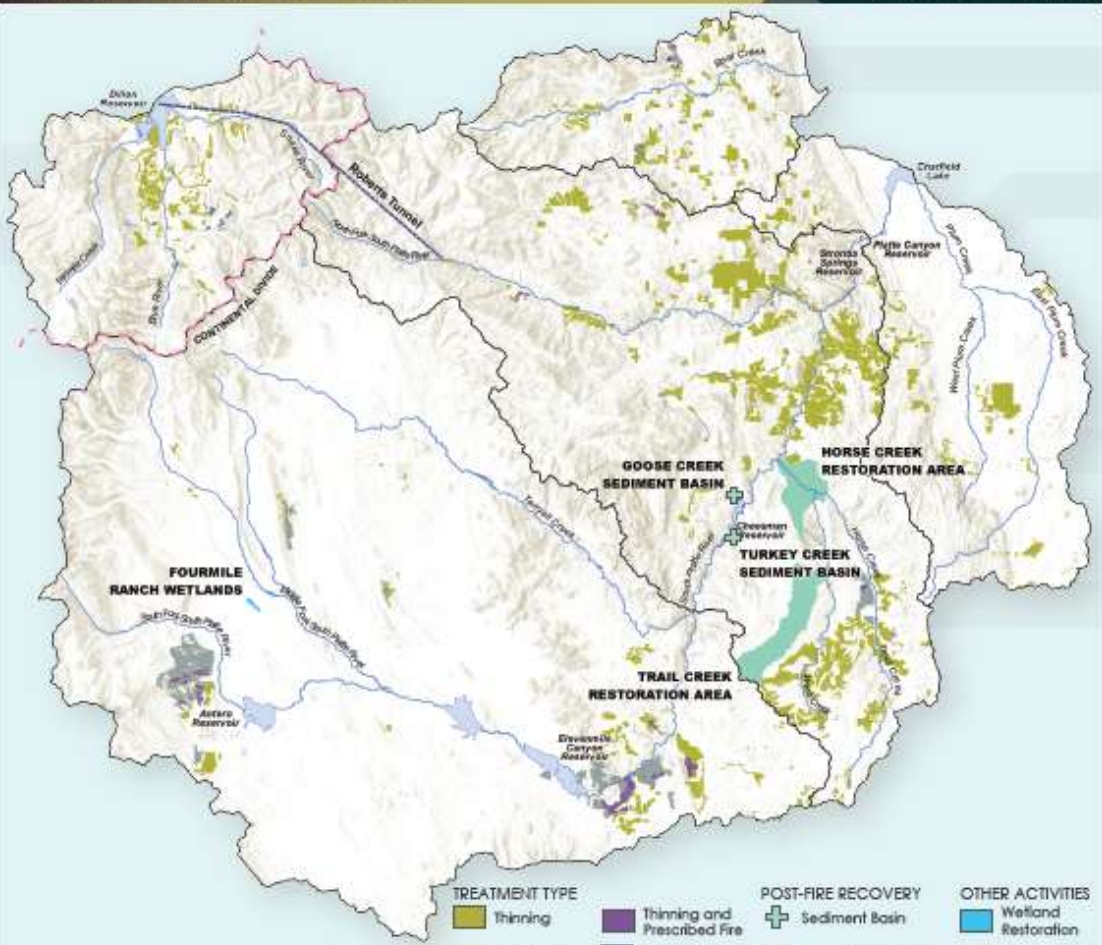
# Watershed at a Glance



## Acres Burned

Year	Upper Blue	South Platte Headwaters	South Platte Mainstem	Bear Creek	Chatfield
1996	0	0	0	11,989	0
2000	0	0	0	10,761	0
2001	0	0	0	0	0
2002	0	23,220	121,383	16	0
2005	16	0	0	0	0
2008	0	0	<1	0	1
2011	17	0	0	0	0
2012	0	1,201	3,218	0	0
2013	0	15	515	0	0
2014	0	2	1	0	4
2015	<1	255	<1	0	0
2016	0	8	16	0	3
2017	110	1,009	47	0	0
2018	0	13,027	0	0	0
2019	0	0	63	0	0
<b>Total</b>	<b>143</b>	<b>36,737</b>	<b>147,994</b>	<b>16</b>	<b>7</b>

# Watershed at a Glance



## Treatment Type & Areas

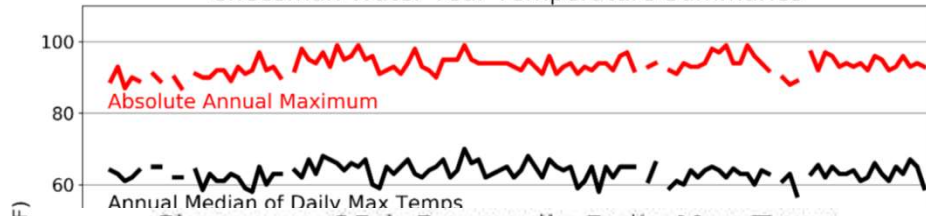
Area	Proactive Forest Treatments	Post-Fire Recovery	Other Treatment/Restoration
Upper Blue	7,863	0	0
South Platte Headwaters	23,886	0	118
South Platte Mainstem	52,845	17,766	0
Bear Creek	9,181	0	0
Chatfield	8,323	0	0
<b>South System</b>	<b>102,098</b>	<b>17,766</b>	<b>188</b>

Treatment: CWR Front Range Fuel Treatment Database (FRFD), 2019  
 Restoration Areas: CUSP, 2018  
 Sedimentation Basins and Wetlands: Denver Water GIS, 2020

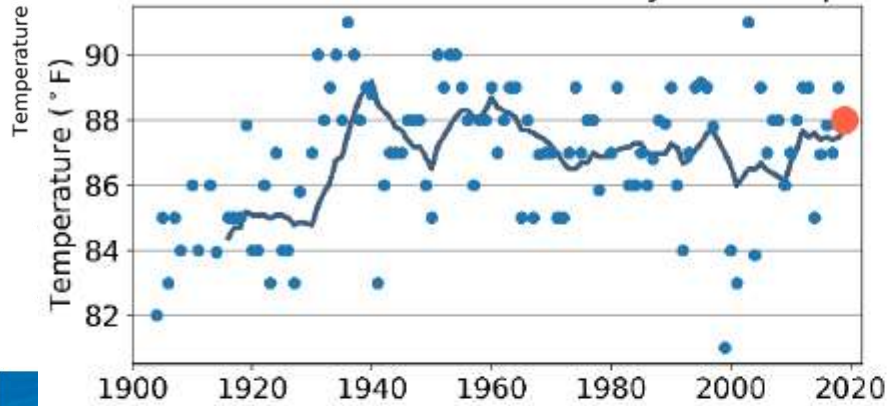
# Treatment & Restoration

# Temperature

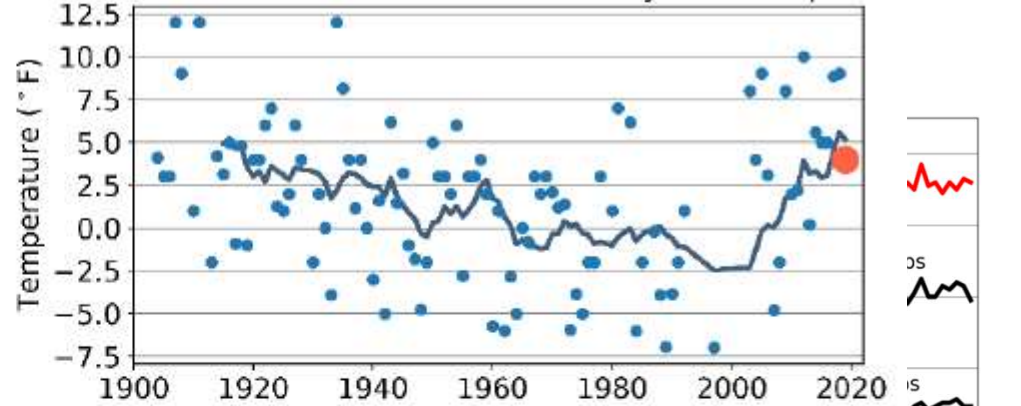
Cheesman Water Year Temperature Summaries



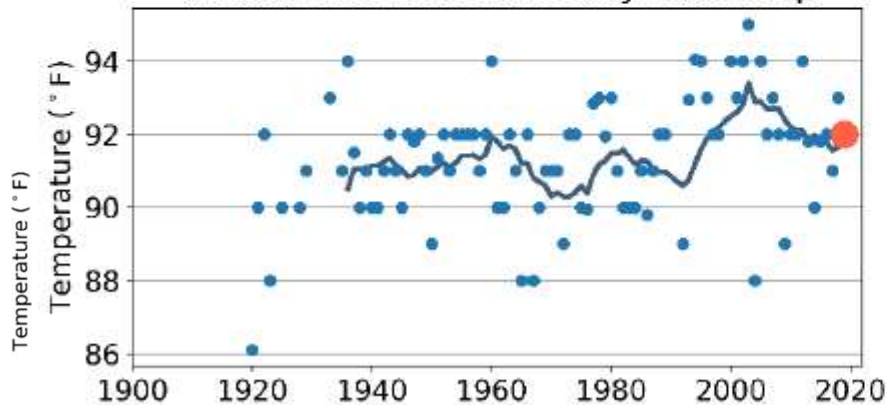
Cheesman 95th Percentile Daily Max Temp



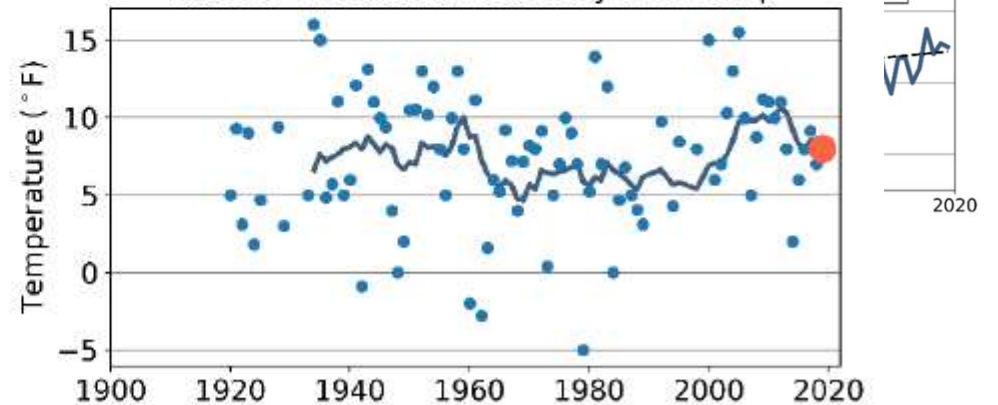
Cheesman 5th Percentile Daily Min Temp



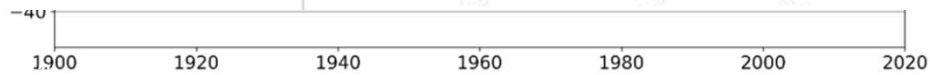
Kassler 95th Percentile Daily Max Temp



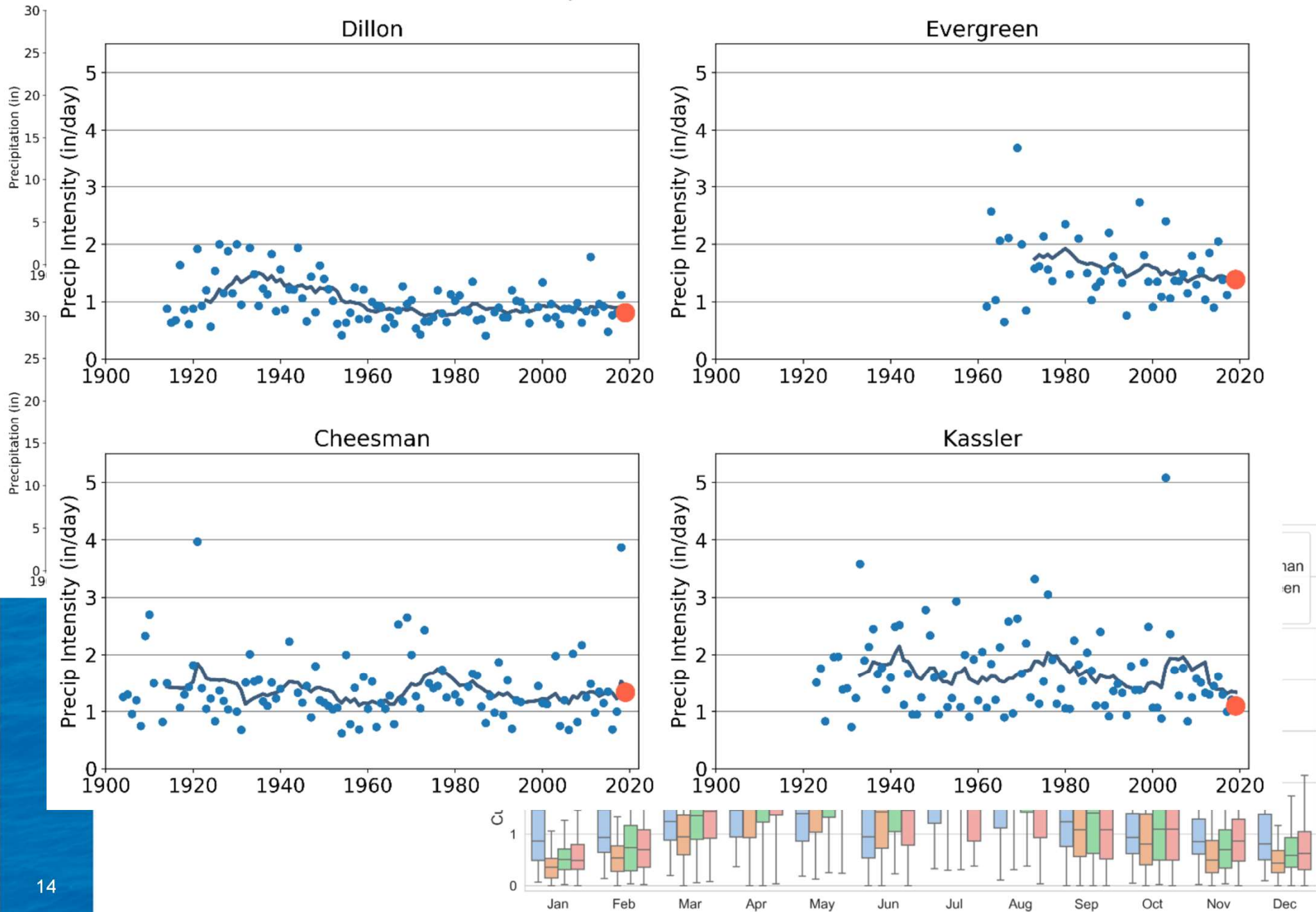
Kassler 5th Percentile Daily Min Temp



— 10-year rolling average    ● Annual value    ● 2019



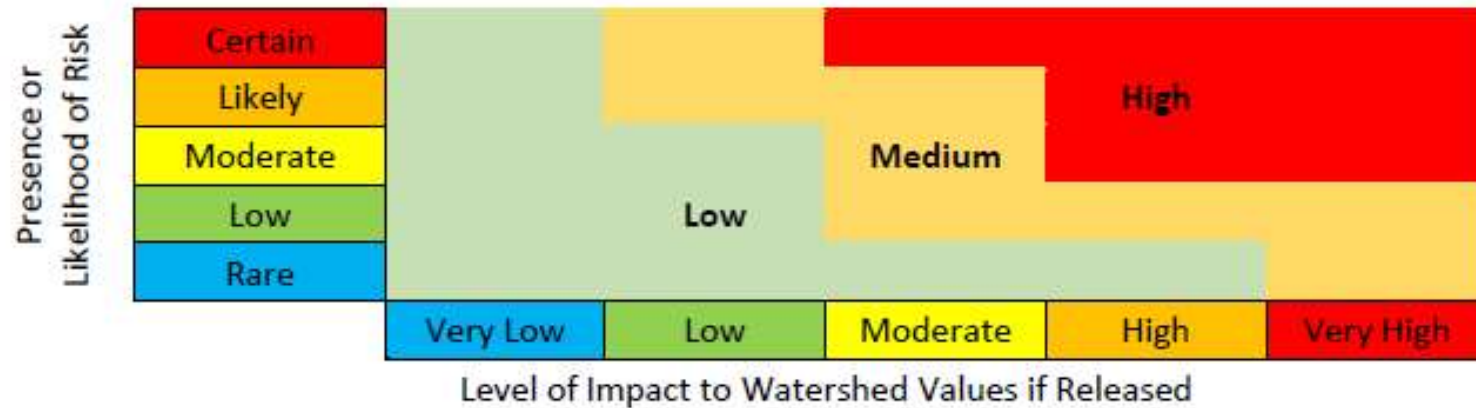
# Maximum Precipitation Event Per Water Year



# Water Quality Assessment

- Data
  - DW LIMS data
  - CDSN
  - EPA Water Quality Portal
- Visualization of data
  - Web-based prioritization tool
  - Lots-o-data analysis

# Risks and Vulnerabilities Assessment



Forest Health and Wildfires

Mining

Population and Development

Transportation and Roadways

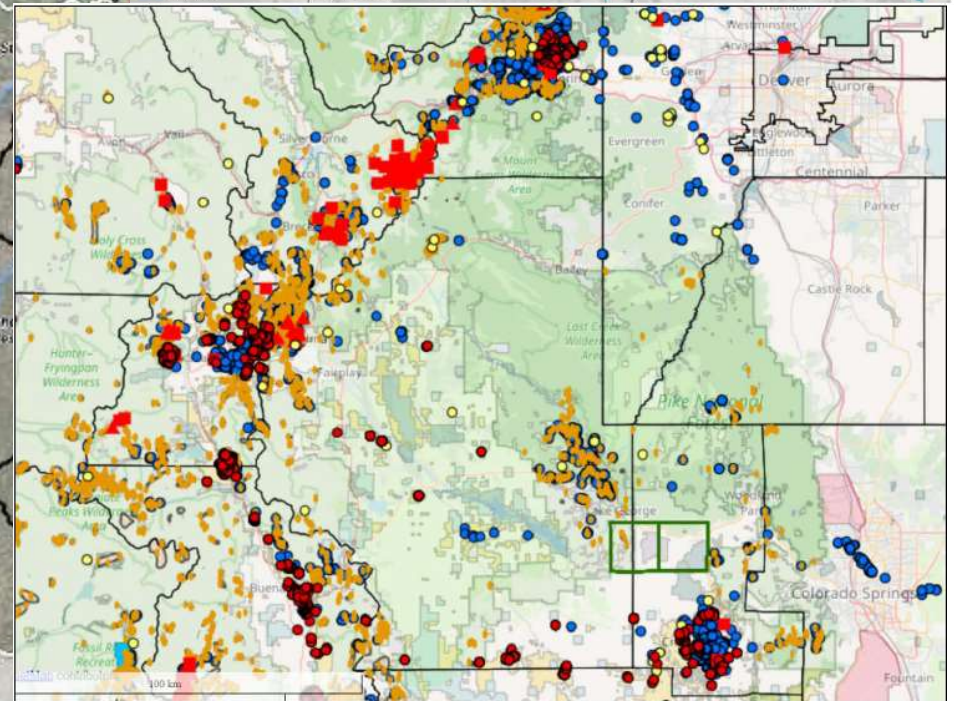
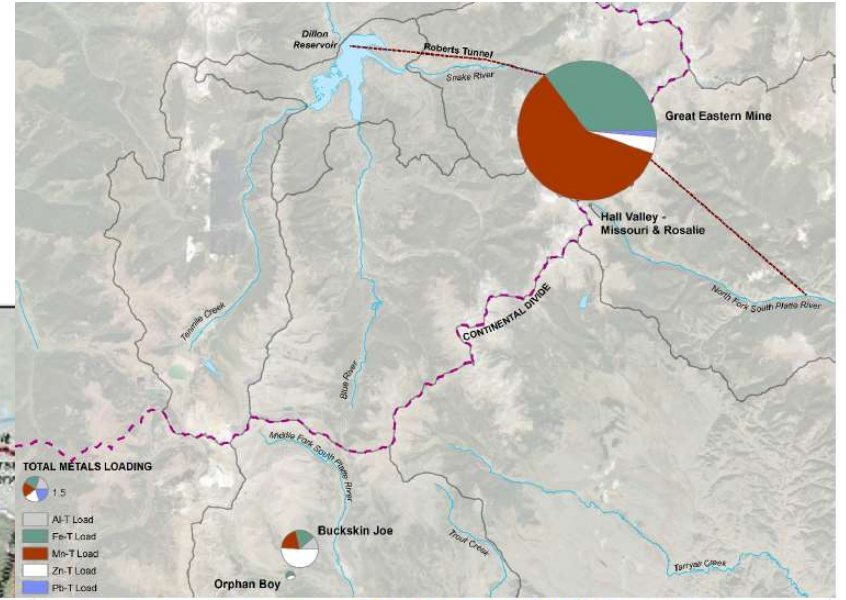
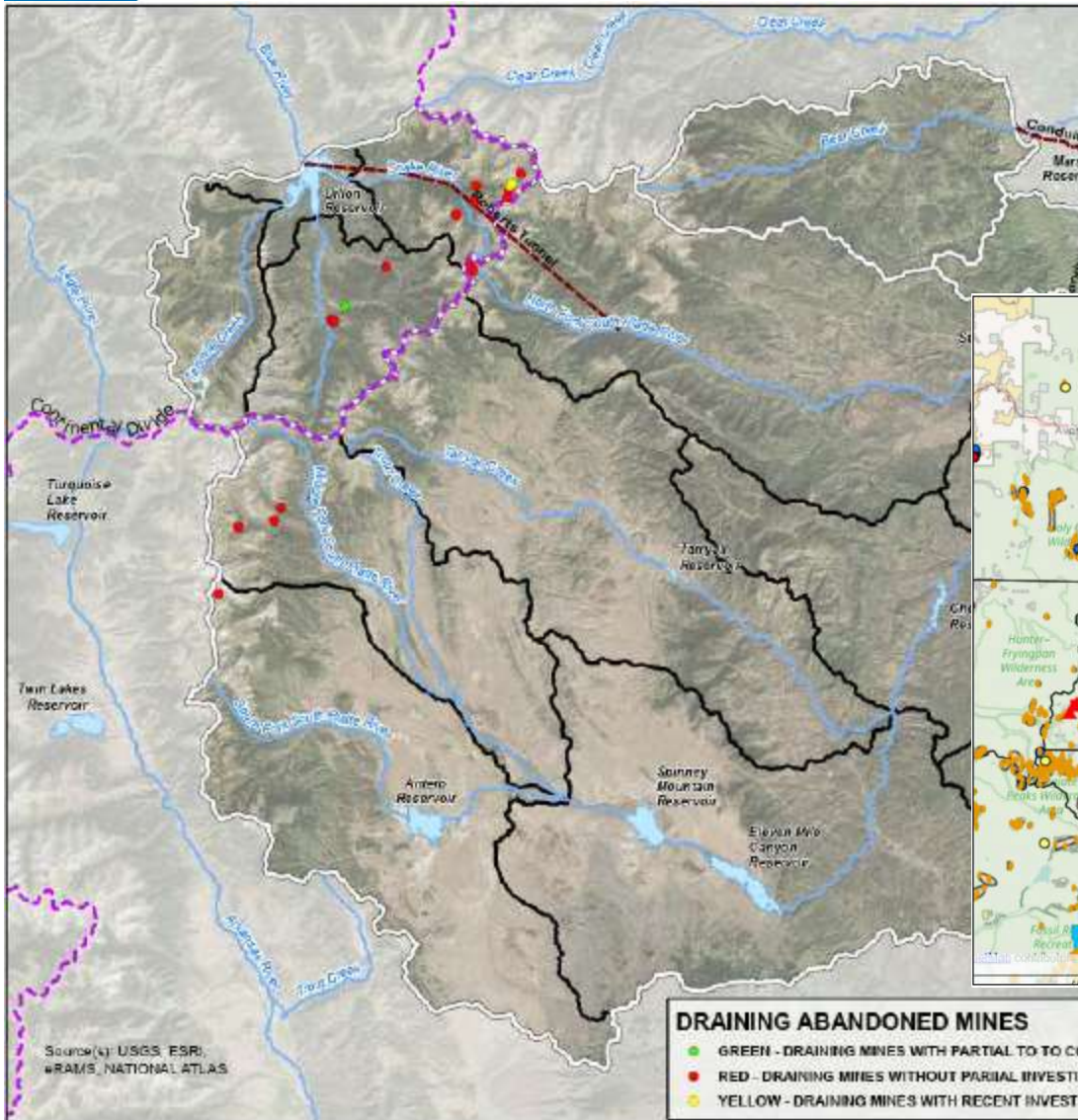
Agriculture

Recreation (includes Aquatic Nuisance Species)

Oil & Gas



# Abandoned Mines



## DRAINING ABANDONED MINES

- GREEN - DRAINING MINES WITH PARTIAL TO COMPLETE RESTORATION
- RED - DRAINING MINES WITHOUT PARTIAL INVESTIGATIONS OR RESTORATIONS
- YELLOW - DRAINING MINES WITH RECENT INVESTIGATION OR RESTORATION PROJECT IN PROCESS

# South Collection System Priorities



Wildfire Risk  
Reduction



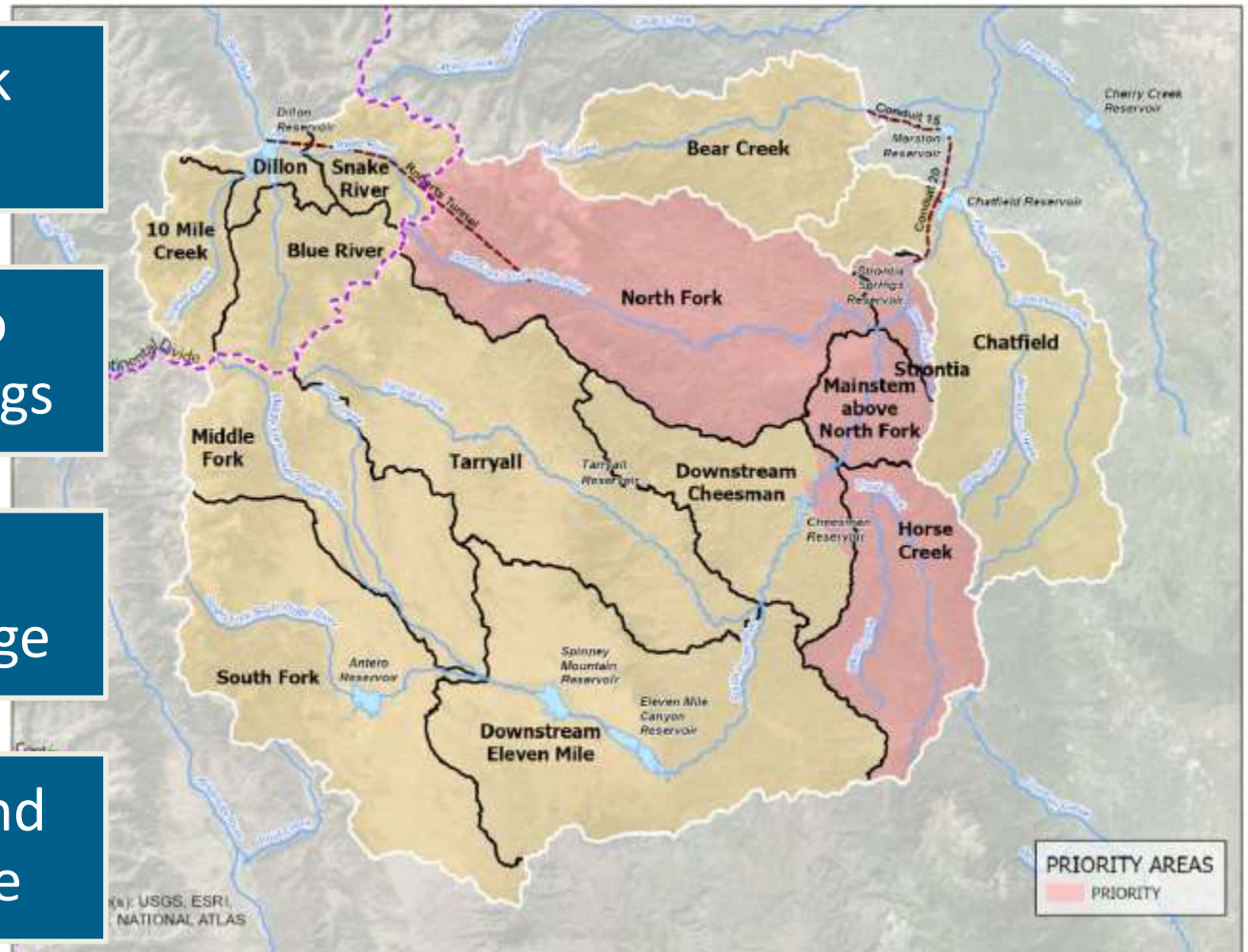
Sediment to  
Strontia Springs



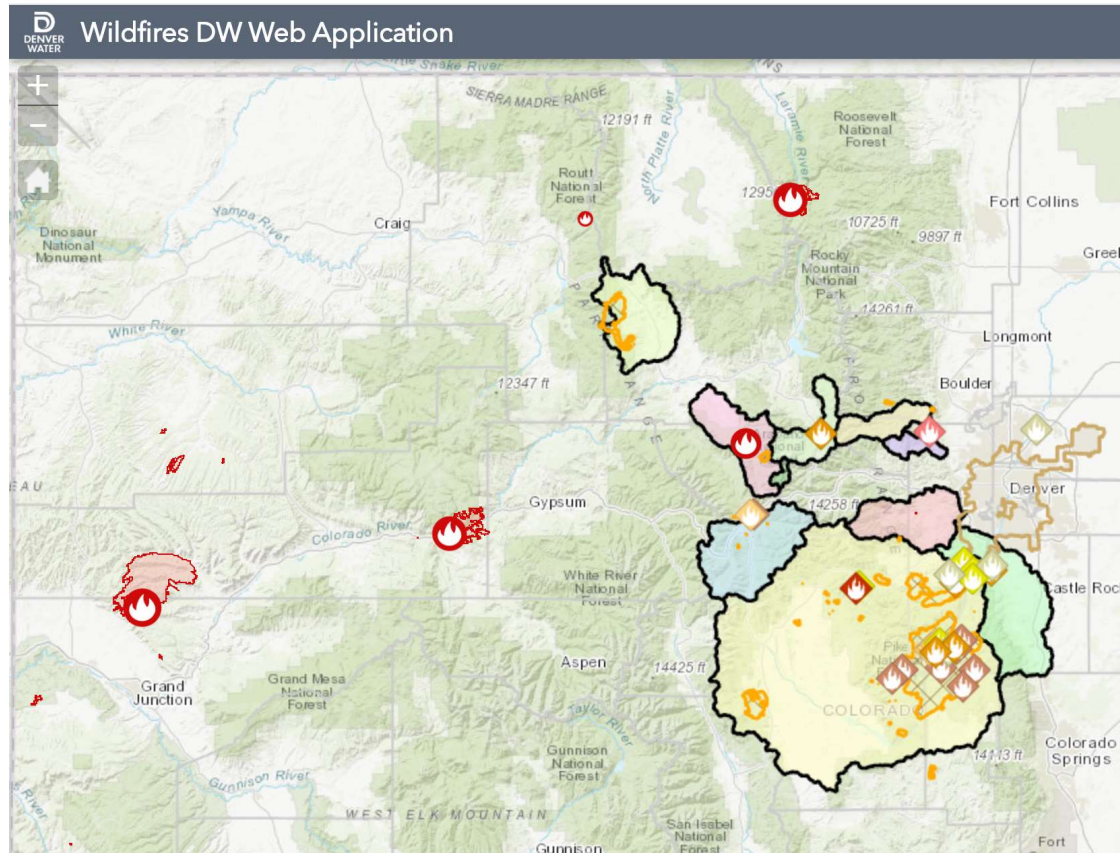
Abandoned  
Mine Discharge



Bear Creek and  
Chatfield Use



# Thank you!!



Alison Witheridge

[Alison.Witheridge@denverwater.org](mailto:Alison.Witheridge@denverwater.org)