

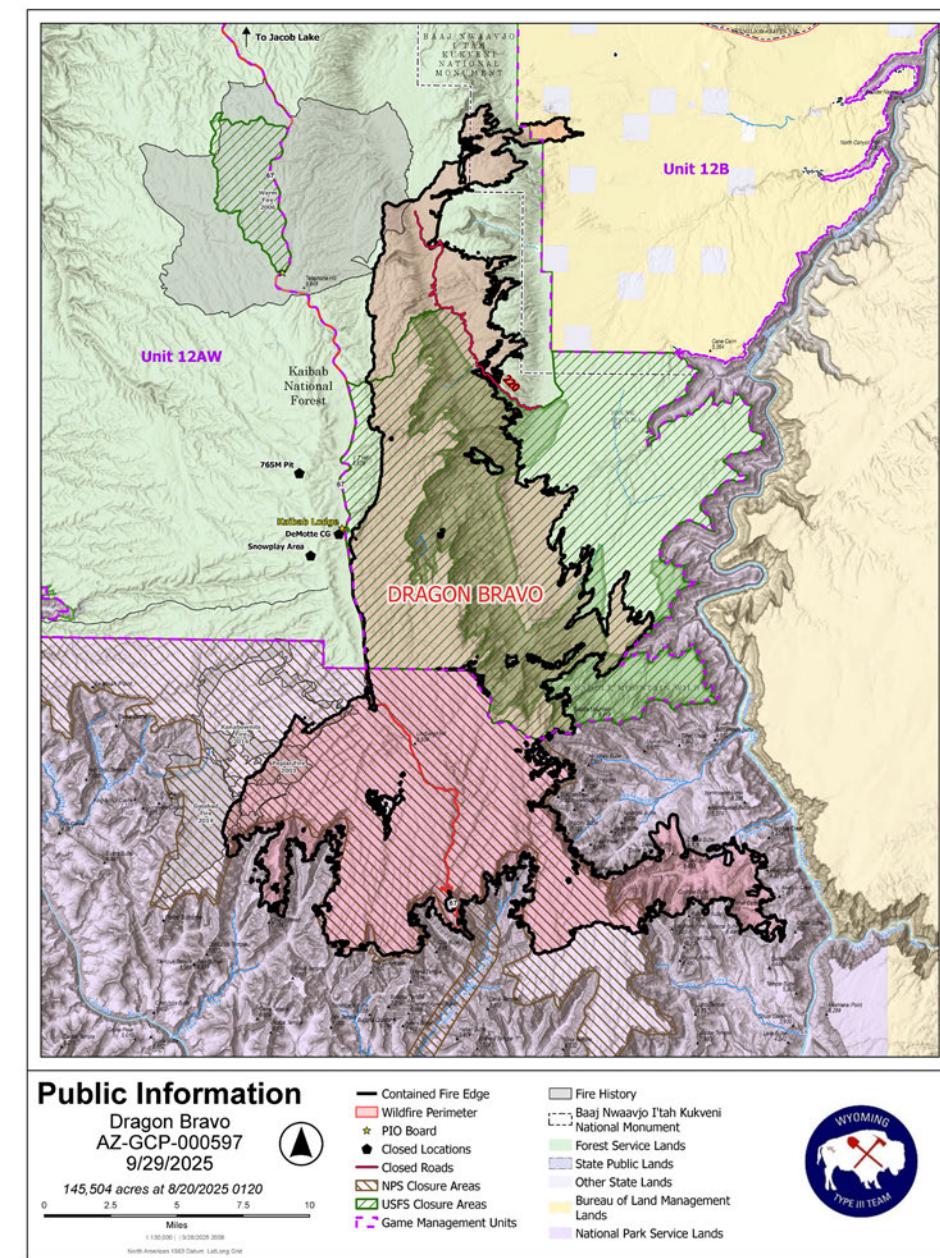
# Dragon Bravo Fire: Post Fire Updates



Dragon Bravo Fire North Rim with Milky Way Night of July 30, 2025 L. Cisneros

# Dragon Bravo Fire: July 4 – Sept 28, 2025

- Lightning strike July 4, 2025
- Declared fully contained on September 28
- >145,000 acres on NPS and USFS
- Losses: 106 structures and critical utilities
- North Rim partially reopened on Oct 1 (closed now)



# Recovery Planning / BAER review (August 19-Sept 4)

- The Burned Area Emergency Response (BAER) team
- Focused on burn severity map and field verification
- Finalized a plan for emergency stabilization to protect life and property & to prevent further degradation of natural and cultural resources



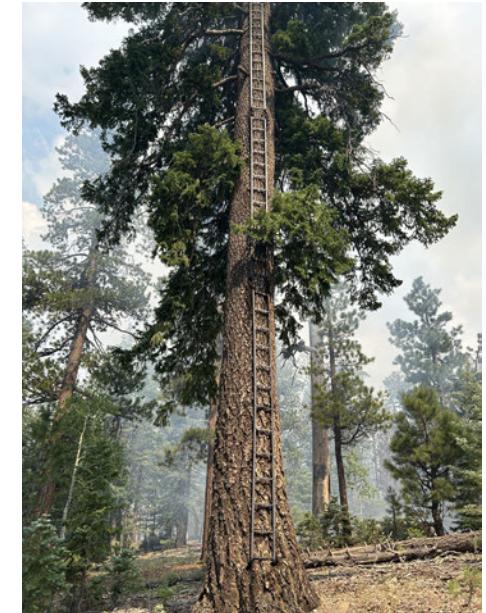
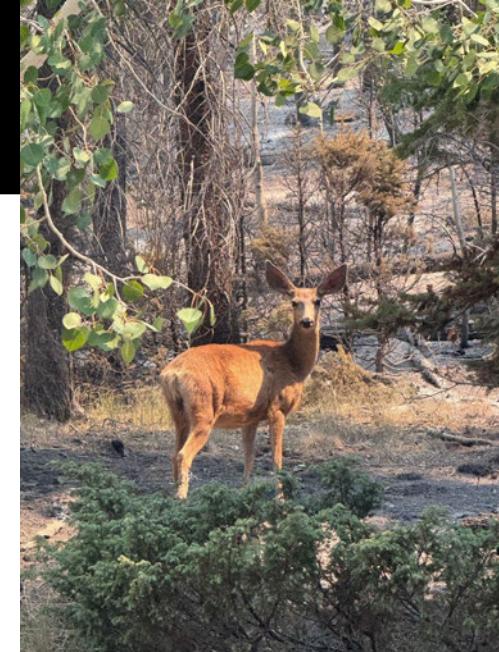


# BAER Review Themes

**Infrastructure  
& Built  
Environment**

**Recreation  
Resources**

**Natural &  
Cultural  
Resources**





# ES/BAR Efforts

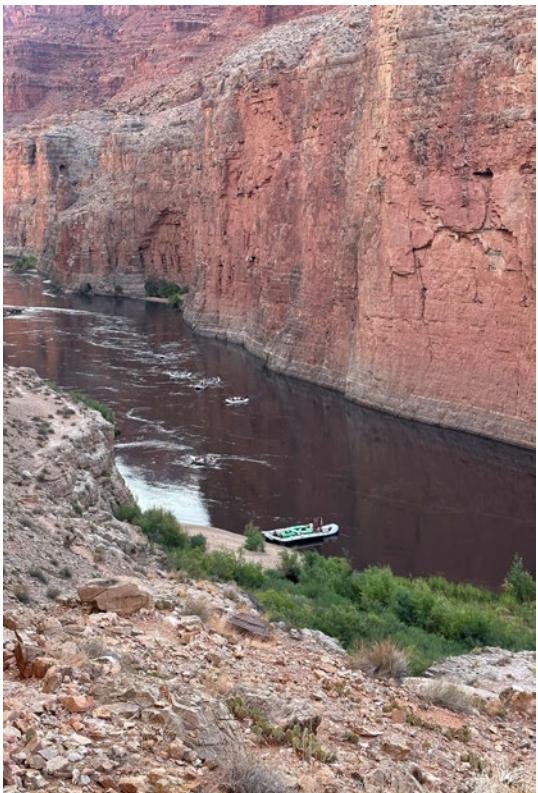
<b>Emergency Stabilization (ES)</b>		ES-12 Storm Patrol
ES-1 Trails Repair & Stabilization		ES-13 Invasive Plant Management
ES-2 Hazard Warning Signs & Messaging		ES-14 Compliance and Consultation
ES-3 Public Safety & Resource Protection		ES-15 BAER Implementation Leader
ES-4 Hazard Trees		
ES-5 Highway Safety Infrastructure Replacement	<b>Burned Area Rehabilitation (BAR)</b>	
ES-6 HAZMAT Stabilization	BAR-1 Trails Repair & Stabilization	
ES-7 Historic Building Stabilization	BAR-2 Replace Minor Assets	
ES-8 Historic Building Safety Fence	BAR-3 Invasive Plant Management	
ES-9 Boundary Signs	BAR-4 Replace Minor Monitoring Equipment	
ES-10 Early Warning System	BAR-5 Monarch Habitat Replacement	
ES-11 Drinking Water System Protection	BAR-6 BAER Implementation Leader	

# 2026 Plans

- Tentative opening for limited visitor services of the North Rim May 15, 2026 (phased reopening / rebuild of infrastructure over the next 5+ years)
- Assessments of North Kaibab trail above Phantom Ranch & updated flood mapping
- Monitoring of cultural resources stabilization, watershed response, fish impacts downstream, wildlife and vegetation



# Monitoring



Mainstem resource impact



Colorado River  
Beaches/Camping



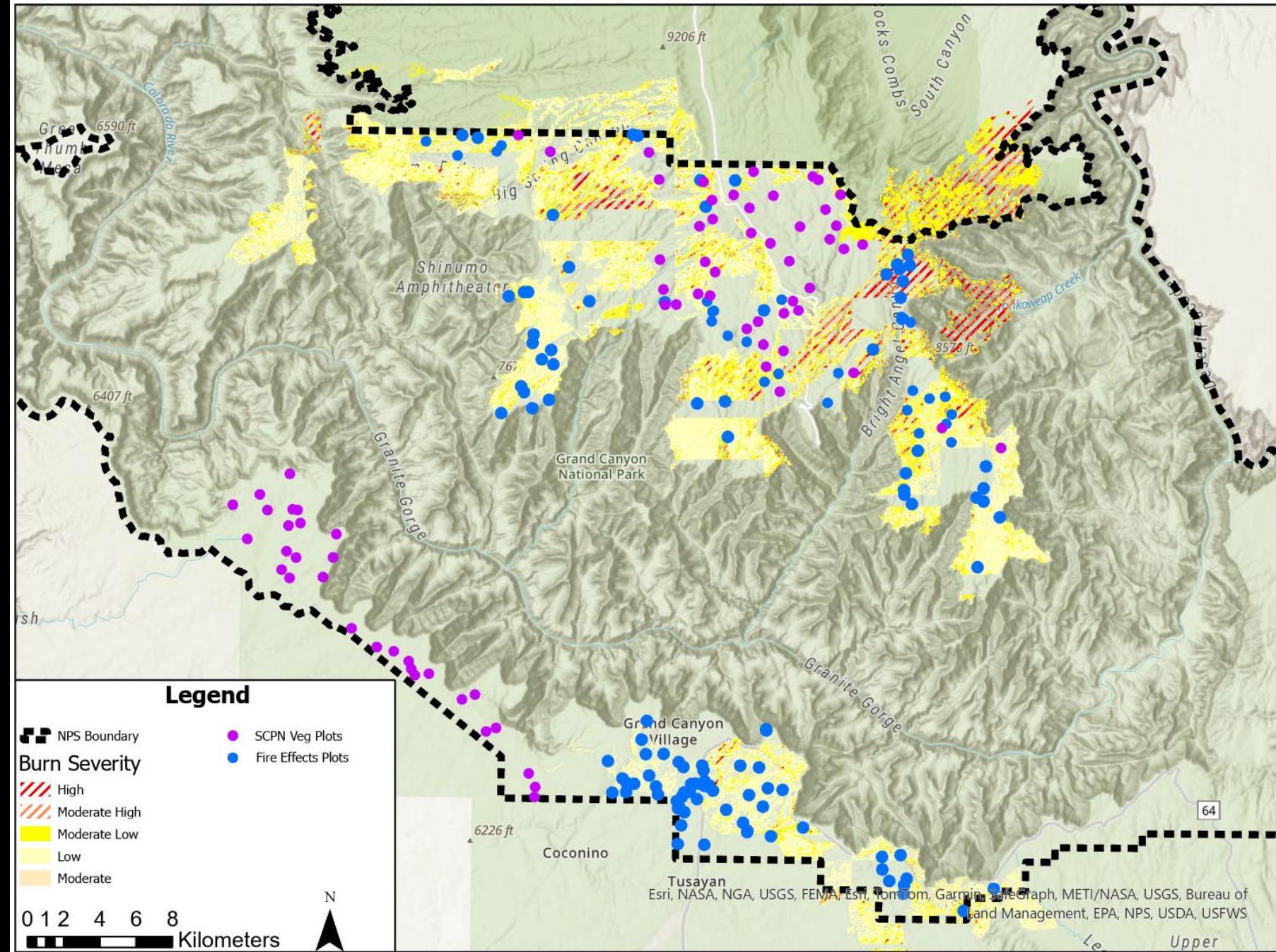
Bright Angel /  
Colorado River fish  
response; water  
quality; flooding



North Rim  
Veg / Wildlife

# GRCA Fire Ecology / Effects Plots & Prior Fire Severity History

(Purple = Partner with  
SCPN/I&M to collect data)



# Monitoring

House Rock, 9/9/2025



North Canyon, 9/9/2025



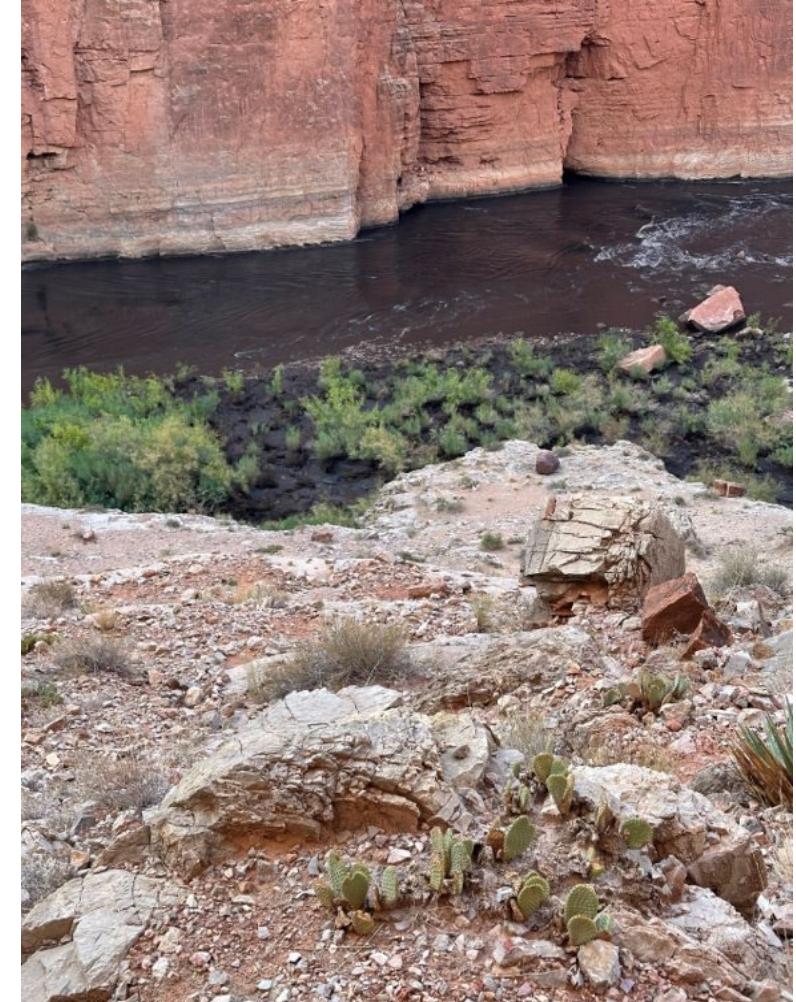
Rider Canyon, 9/9/2025



USGS Photos

# Hydro Work Post Fire: A Collaborative Effort

- Risks to drinking water (Roaring Springs, Bright Angel Creek)
  - Persistent contaminants on North Rim could flush into groundwater system during spring snowmelt/summer monsoon storms
  - Harms human and wildlife health
- Risk of higher magnitude flash flooding and debris flow sediment volumes than in pre-fire conditions
  - Loss of vegetation; hardened, water repelling soils increase rapid runoff after rainfall, especially in burn areas below the rim
  - Affected watersheds: Bright Angel Creek (Phantom Ranch), House Rock, North & South Canyons, Buck Farm Canyon, Nankoweap Creek, Kwagunt Creek, 60-mile, Malgosa, Awatubi, Clear Creek, Tuna Creek, and Crystal Creek
  - Duration of elevated risk at least 2 years
  - Risks to human life and property, wildlife, recreation

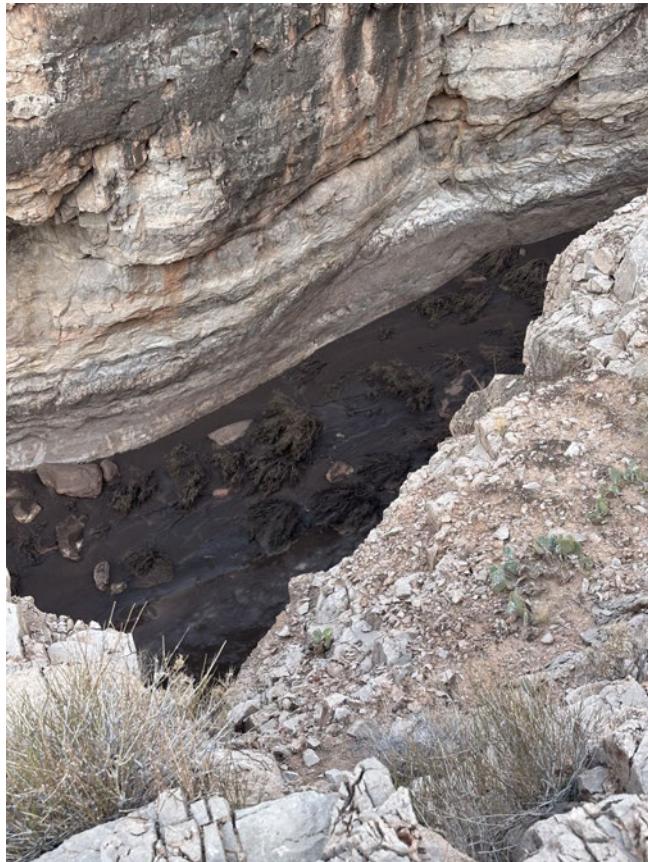




# Hydro Work Post Fire: A Collaborative Effort

- Roaring Springs and Bright Angel Creek actions
  - Intensive telemetered water quality monitoring (NPS), stream gages (AZWSC, GCMRC), and rain gauges (AZWSC) to understand and mitigate flood and WQ impacts
  - Additional floodplain and watershed modeling for Bright Angel Creek (NPS, HDR?) to understand flood risk
  - Potential fish salvage and translocation- humpback chub if encountered & bluehead sucker- before flooding/ debris flows occur (NPS)
  - Protect against invasion or re-colonization of nonnative fish species, evaluating the potential for barriers, mechanical removal, and/or chemical removal (NPS)
- Several other watersheds heavily impacted—water quality, habitat alterations could negatively affect fish populations and recreation in tributaries and the mainstem Colorado River.
  - Remote cameras for daily imagery at the mouth of fire-effected drainages to monitor debris flows (GCMRC)
  - Soil sampling on the north rim for fire-related contaminants, e.g., PAHs, dioxins, metals, charcoal (PCMSC)
  - Additional non-telemetered rain gages, both existing and newly deployed, on the North Rim (GCMRC, PCMSC)

# Native Fish Concerns



Numerous reports from researchers & recreationalists of flash flooding, blackened water in tributaries and the Colorado River, ash deposition, water smelling of smoke, etc., as far downstream as RM 207



# Native Fish Monitoring

- NPS- reconnaissance flight in upper Bright Angel and Crystal watersheds
- NPS- backpack electrofishing and eDNA collection in upper Bright Angel- Angel Springs Creek, Roaring Springs Creek, Bright Angel Creek proper
  - evidence of extensive flash flooding and ash deposition
  - no fish captured or observed
- GCMRC/ FWS- deployed dissolved oxygen sensors above Little Nankoweap Creek (52.02R), above Lava Canyon (Chuar) Rapid (65.60 R), below Upset Rapid (151.15R), and across from Stairway Canyon Camp (171.65L)
- GCMRC/ USU- Lindsay Hansen proposing a chapter in her dissertation with analysis of the impacts of post-fire debris flows on native and nonnative fish communities.
- NPS/ GCMRC- manuscript in prep describing impacts to the Shinumo Creek watershed following the 2014 Galahad Fire

# USGS slides

