



# Inyo National Forest

## Summary of monitoring results from 2022-2023

### Are we meeting our goals?

The Inyo National Forest, like all of California, experienced monsoon summers and a record-breaking winter during this monitoring period. The high snow levels and multiple rain on snow events in 2022-2023, had impacts on Forest resources.

Most notably, the forest road and trail infrastructure experienced extensive damage. The proportion of roads and motorized trails with moderate and high erosion levels exceeded those in good condition. In 2022, we stabilized 600ft<sup>2</sup> of streambank and maintained 536 miles of non-motorized trails (6% more than in 2021) and 13 miles of motorized trails. In 2023, we maintained 486 miles of non-motorized trails and 7 miles of motorized trails.



Mono Lake during the 2022-2023 winter

The high precipitation levels had some beneficial effects. The forest experienced fewer wildfires and nearly all wildfire acres in 2023 were managed for objectives other than full suppression, having ecological benefits. We were able to conduct substantially more prescribed fire. Species like sagebrush, and the associated native vegetation community, showed a positive response to the additional precipitation but a negative response to wildfires larger than just a few acres that remove critical seed sources.

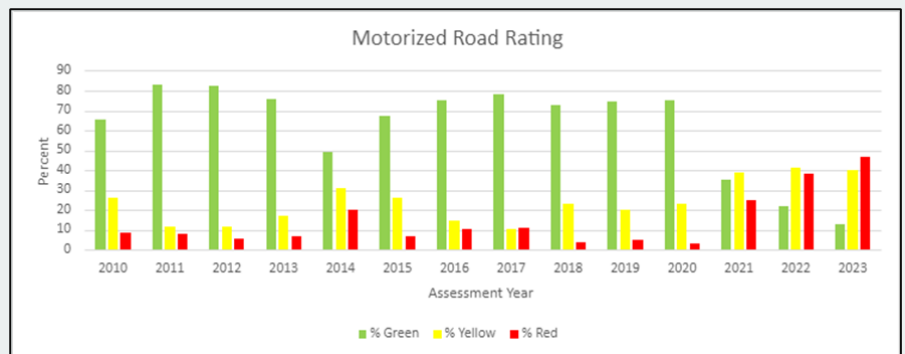
Partnerships are incredibly valuable to our Forest. We recommend continuing to build valuable partnerships to work towards a common goal of repairing roads and trails, monitoring and restoring valuable ecosystems, restoring degraded meadows, and maintaining intact ecosystems.

The trend in pinyon juniper woodlands observed during this monitoring period highlights the need for partnerships to preserve and facilitate adaptation in such a valuable ecosystem. The estimated number of dead pinyon pine trees increased from fewer than ~2,000 trees in 2021 to over 70,000 dead trees in 2022. Most mortality was localized in highly visible locations that are important for recreation and cultural purposes. We recommend working with tribes, partners, other federal agencies, and researchers to monitor and develop restoration and climate adaptation strategies.

## Summary of monitoring results

### Watershed Conditions

- The proportion of roads and motorized trails with moderate and high erosion levels now exceed those in good condition. In 2022, the forest stabilized 600ft<sup>2</sup> of streambank.
- **Key recommendation:** Continue to build partnerships with Off-Highway Vehicle groups to help maintain roads and motorized trails.

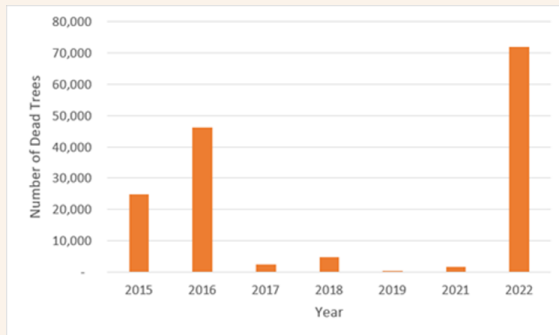


Trend in roads and motorized trails with high (red), moderate (yellow), and low (green) levels of erosion.

## Ecological Conditions and Focal Species

### Pinyon-juniper woodlands

- Total acres of pinyon-juniper woodlands decreased by ~2,000 acres.
- The estimated number of dead pinyon pine trees increased from fewer than ~2,000 trees to over 70,000 dead trees.
- Pinyon pine mortality was concentrated in the White and Inyo mountains, in areas with recreation and cultural significance.
- **Key recommendation:** Continue to work with partners and tribes to develop a monitoring and adaptation plan.



Trend in pinyon pine tree mortality 2015-2022

### Sagebrush

- The percent of surveyed sagebrush in early and late seral stages increased, indicating a positive response to the high precipitation levels.
- A key finding—the regeneration of sage brush in a burned area depends on the presence of a nearby (within 20 meters) seed source. Wildfires larger than just a few acres can wipe out that seed source and delay sagebrush regeneration by >50 years.
- **Key recommendation:** Conduct small, strategically placed prescribed burns (or mechanical treatments) in sagebrush habitat.

### Meadows and Riparian Functional Condition

- Multiple meadows, regardless of grazing status, experienced a decline in functional condition.
- **Key recommendation:** Continue to take corrective action to repair meadow condition.

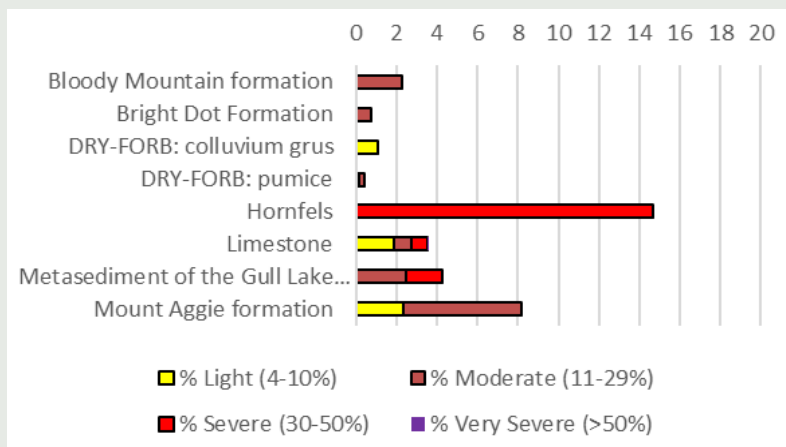


Photo of intact meadow (above) and degraded meadow (bottom).

## Ecological Conditions for At-Risk Species

### Special Habitats

- Gar Watt mine is a special habitat for bats but has high recreation impacts. The forest is going to install bat gates.
- We identified volcanic-warm soil (~8 acres) as a new special habitat.
- Tree-mortality affected 3,989 acres (~4%) of special habitat units in 2022 & 2023 with Hornfels unit (whitebark pine) experiencing the most severe mortality.
- Special habitat units continue to experience disturbance, particularly from OHV trespass and unauthorized routes.



Percent tree mortality in special habitat units (2022)

### Bighorn Sheep Critical Habitat

- 57% of the subalpine/alpine zone is undeparted from the natural fire return interval. We continue to manage wildfire for objectives other than full suppression when feasible which is important for bighorn sheep.

### Sage grouse Seasonal Habitat and Connectivity

- Sagebrush habitat experienced positive effects from the high precipitation but negative effects from wildfires that remove a nearby seed source. Relatively few sagebrush acres were treated.

**Key recommendation:** Prioritize monitoring in dry forb habitat impacted by OHV and whitebark pine mortality throughout special habitats.

## Visitor Use, Satisfaction, and Progress on Meeting Recreation Objectives

- National Visitor Use Monitoring results from 2021 (most recent) indicate a decline in forest visitation, likely due to travel restrictions from the pandemic and forest closures from wildfires.
- The record snowpack in 2023 limited access and resulted in extensive damage to trail infrastructure from avalanches and heavy spring runoff. We maintained 536 miles of non-motorized trails (6% more than in 2021) and 13 miles of motorized trails. In 2023, we maintained 486 miles of non-motorized trails and 7 miles of motorized trails.

Trail types maintained	2021 miles (percent of total)	2022 miles (percent of total)	2023 miles (percent of total)
Non-motorized	477 (45%)	536 (51%)	486 (46%)
Motorized	No data	13 (3%)	7 (2%)

*Miles of motorized and non-motorized trails maintained.*

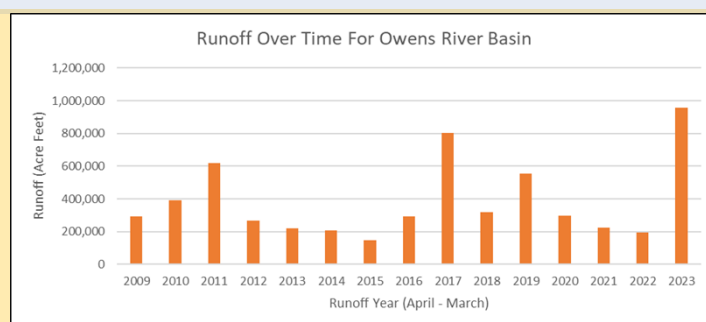
- We continue to engage with tribes and host youth programs as well as outreach to our diverse community members.
- We had fewer volunteers in 2023 due to the shortened operating season after the 2022/2023 winter.

**Key recommendation:** Continue building key partnerships and improve public outreach communication tracking.

## Climate Change

- Run off was extremely high in 2023 following the record-breaking winter.
- There was a slight trend toward earlier season highest daily mean and center mass of runoff indicating snow is melting earlier, streamflow peaks earlier and recedes earlier.

**Key recommendation:** Continue to gather more



Owens River Basin runoff 2009-2023

## Wildfires and Management Actions

- There was little change in the fire return interval departure between the 2020 and 2022 (2023 data unavailable). The montane zone remains highly departed with 78% burning too infrequently.
- There were fewer wildfires. In 2022, all wildfires were fully suppressed, 97% of wildfire acres in 2023 were managed for objectives other than full suppression.
- Fire severity patterns in the montane zone in 2021-2022 are severe and outside the natural range of variation, similar to the previous monitoring period.
- We increased our management actions in 2022-2023 to reduce fuels and apply fire to the landscape.

Management Action	2020—2021	2022—2023
Wildfire—full suppression	20,943	11
Wildfire—objectives other than full suppression	0	323
Fuels Reductions	3,855	5,889
Prescribed fire (includes pile burning 22-23)	362	2,749

**Key recommendation:** consider opportunities to manage wildfires in the montane zone for objectives other than full suppression but utilize full suppression in arid shrublands and woodlands ecological zone.

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Example of good changes to sagebrush ecosystems when a nearby seed source remains after a fire

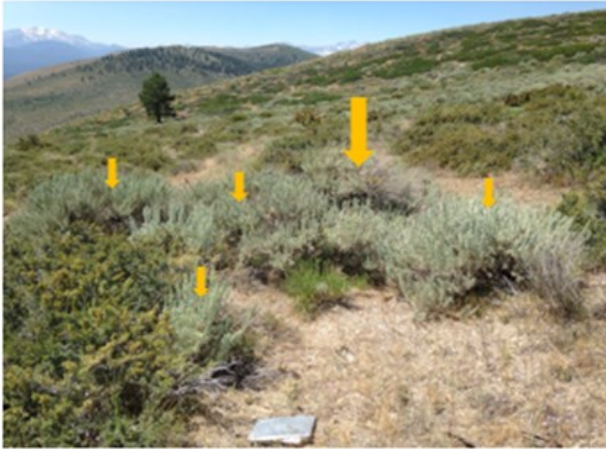
### Good changes: Effect of a nearby parent seeder

Mclaughlin Fire 2001 – Plot 446

2005



2020

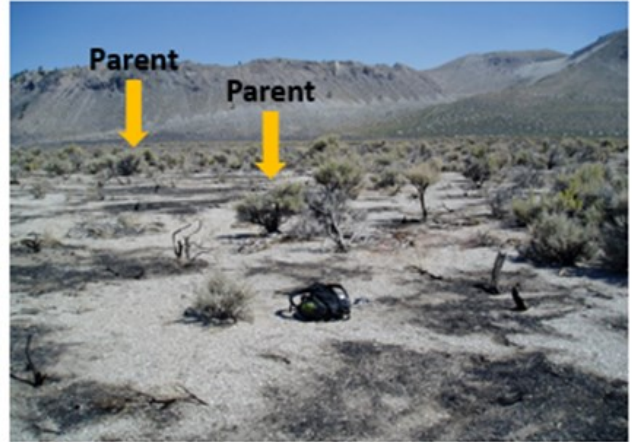


2023: post-fire seedlings now with strong seed production

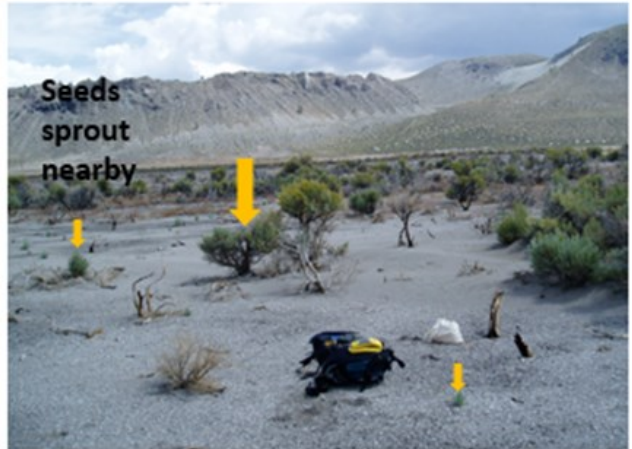


Mono Fire 2010 – Plot 585

2010



2015



2023: abundant infilling established from nearby seed sources

