

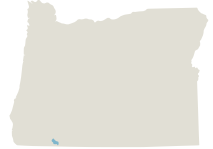


# Ashland Forest

## All-Lands Restoration Partnership

Ashland Forest All-Lands Restoration Initiative

### DRY-TYPE FOREST HABITAT



#### The Ashland Forest All-Lands Restoration

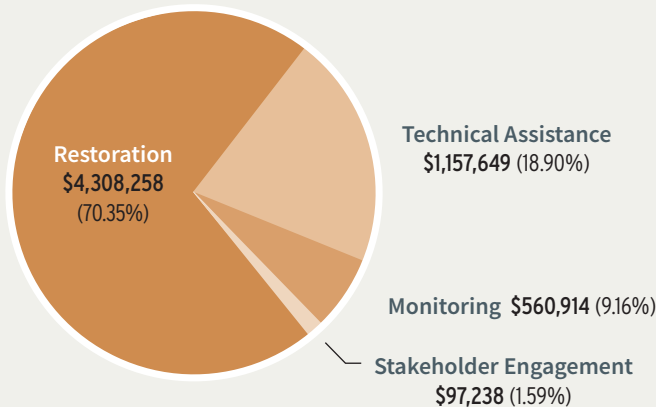
**Partnership** focuses on Dry-Type Forest Habitat outside the City of Ashland, Oregon. It encompasses 58,000 acres centered on Ashland Creek, including the City’s municipal water supply and critical late-seral habitat for sensitive species such as northern spotted owl and Pacific fisher. Over a century of fire exclusion and large-tree timber harvest caused forests to become dense and less diverse. The landscape became more prone to intense wildfires, elevating the risk to the community’s water supply and wildlife habitat. The partners have worked together since 2010 to create a fire-adapted landscape across City, federal, and private lands. In partnership with the community, the project protects a range of values and increased public support for ecological thinning and prescribed fire. Throughout the initiative, partners elevated the role of forest workers, including workforce development opportunities that support local economies and increased capacity for more restoration work. This project also serves as an outdoor classroom for students of all ages—including through partnerships with local universities—and is a national model for successful science-based forest restoration and community engagement.

PHOTO The Nature Conservancy (Evan Barrientos)



### Funding

OWEB awarded \$6,124,058 in funding with \$4,365,725 in matching funds.



### Benefits

- Reduced risk of damaging wildfires and improved fire management options
- Improved dry-type forest health with old-growth trees and open stands
- Increased area ready for controlled burns and implemented burns with minimized smoke impacts
- Protected clean and abundant drinking water and healthy streams
- Sustained habitat for sensitive species, including the Pacific fisher and the Northern spotted owl
- Sustained local, living-wage jobs and regional workforce training
- Engaged community and private landowners in a local, collaborative solution

### ABOUT THIS REPORT

The Focused Investment Partnership (FIP) grant program is a bold, new conservation approach that supports high-performing partnerships to implement strategic restoration actions and measure ecological outcomes through coordinated monitoring. In January 2016, the Oregon Watershed Enhancement Board awarded a FIP grant to the Ashland Forest All-Lands Restoration Partnership. This report documents projects for which funding was obligated in Biennia 2-3 (2017-2021) and cumulative progress since the FIP was initiated in 2016.

Work completed under the FIP grant program is part of a much larger on-going collaborative effort of federal, state and local agencies, private landowners, partners, and non-governmental organizations in the Ashland area.

**Accomplishments included in the report only reflect actions completed with OWEB FIP funding.**

### PARTNERS

**Core Partners:** City of Ashland, Lomakatsi Restoration Project, The Nature Conservancy, US Forest Service Rogue River – Siskiyou National Forest

**All-Lands Partners:** Natural Resources Conservation Service, Oregon Department of Forestry, US Fish and Wildlife Service, Jackson Soil & Water Conservation District

## GOAL

Healthy forest landscape with a mosaic of complex old-growth, open forest, and oak woodlands restoring diverse habitats and increased resilience to fire, insects, and disease. Engaged community supportive of active forest stewardship, with project serving as a place of learning for the public, partners, and workforce.

## STRATEGIES

- Strategically implement ecological thinning, fuels reduction, and prescribed fire

- Foster development of an engaged and supportive citizenry

## IMPLEMENTATION ACTIONS FUNDED (2017-2021)

### Restoration

**2,189**

ACRES OF  
ECOLOGICAL  
THINNING  
(3,179 TOTAL)

**500**

ACRES OF PRESCRIBED  
FIRE PREP COMPLETED

**2,151**

ACRES OF PILE  
BURNING COMPLETED

**205 + 25**

ACRES OF SEEDING + ACRES OF  
INVASIVES REMOVAL

### Planning

**2,677** ACRES IDENTIFIED  
FOR TREATMENT  
(3,779 acres total)

**27** FOREST RESTORATION  
PLANS FOR ENROLLED  
PRIVATE LANDOWNERS  
(46 total)

**1** PRIVATE-LAND  
BURN PLAN

**1,210** ACRES MONITORED  
PRE-TREATMENT

**1,719** ACRES MONITORED  
POST-TREATMENT  
for effectiveness and adaptive  
management (2,821 acres total)

**1,457** ACRES OF UNDER-  
BURNING MONITORED

### Engagement

**27**

LANDOWNERS  
ENROLLED

**79** LANDOWNERS ENGAGED  
from 2018 to 2021 (179 total)

**95** SURVEY PARTICIPANTS  
in second consecutive  
social survey

**28** EDUCATORS PARTICIPATED  
in fire ecology education training  
in spring 2020

**70** STUDENTS PARTICIPATED  
in a day of service learning  
in May 2021

### Monitoring

**5** FIRE EFFECTS MONITORING  
REPORTS PRODUCED

**4** SUPPLEMENTAL MONITORING  
PROJECTS COMPLETED: focusing  
on public perception of the initiative,  
evaluation of fire management options at a  
landscape-scale, stand-scale responses to  
treatment under a changing climate, and  
evaluation of hydrological impacts of AFR  
treatments.

**3,600**

MEMBERS OF THE PUBLIC ATTENDED  
63 community events held online and in-person  
from January 2018 through October 2021.

**13,000**

POSTCARDS MAILED  
on controlled burning education and alerts

**1,830**

SUBSCRIBERS  
to email and text message alerts (3,285 total)

**2,179**

FOLLOWERS  
on social media

Key Events held:

**49** STAKEHOLDERS AND  
EXTENDED PARTNERS  
PARTICIPATED  
in a fire planning in June 2021

(The metrics shown reflect actions that have been completed or for which funding has been obligated in Biennia 2 and 3. Metrics in parentheses include Biennium 1 accomplishments.)

## Observed Near Term 0-10+ YEARS

## OUTCOMES

### ECOLOGICAL PROGRESS

#### Stand-scale Outcomes

##### OWEB-funded surface and ladder fuel treatments resulted in:

- Reduced small tree density by 47% and basal area by 10%, while increasing average tree size by 27%.
- Reduced canopy closure by 18% from 77% pre-treatment to 63% post-treatment, and increased canopy base height by 20% following fuels treatments.
- Predicted diminished fire intensity with declines in flame lengths under mild and extreme weather scenarios of 27% and 24%, respectively.

##### Prescribed fire in previously treated units resulted in added changes:

- Reduced canopy closure by 8%, while canopy base height increased 15%.
- Declines in predicted fire behavior with flame lengths under mild and extreme weather scenarios falling an additional 25% and 32%, respectively.

### OTHER OUTCOMES

#### Water

- AFR monitoring, in partnership with the Southern Oregon University, detected no impact on erosion and sediment based on bioassays of creeks feeding Reeder Reservoir, the source of the City of Ashland's drinking water.

#### Social Monitoring

- AFR partners and Southern Oregon University social monitoring survey shows significantly increased support for science-based commercial tree thinning, non-commercial fuels reduction, and proactive prescribed fire use.

#### Landscape Outcomes

- Across the Ashland watershed wildfire risk to high-value resources and assets was reduced by reducing fire hazard. In treated units potential flame length was reduced by 25% by treatments that include removal of merchantable material, 27% by strictly non-merchantable treatments, and an additional >9% when ecological thinning is followed by underburning.
- Fire suppression effectiveness and safety was improved. Suppression difficulty index was reduced by 25% by treatments that included removal of merchantable material, 21% by strictly non-merchantable treatments, and >35% when ecological thinning was followed by underburning.
- Assessment showed that water yield was not increased, and analysis indicates that thinning extent would need to be increased dramatically to significantly reduce transpiration and increase yield (Kurzweil et al. 2021)<sup>1</sup>.

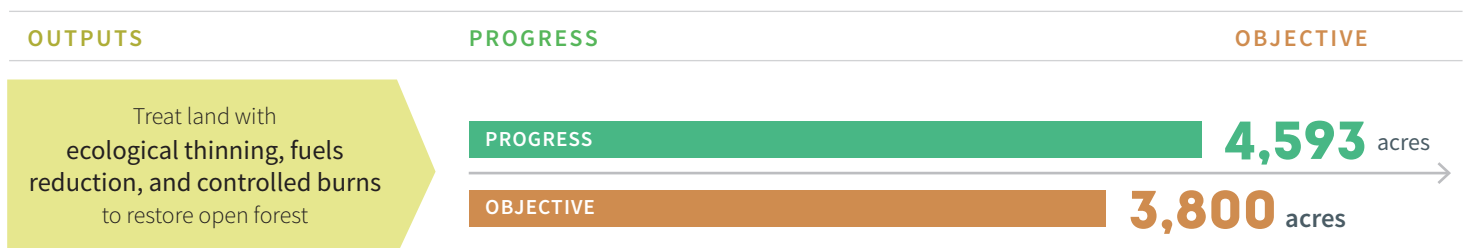
## Expected Long Term 20+ YEARS

- Open and closed habitats are sustained by landscape prescribed fire use and support wildlife dependent on complex forests, open forests, and oak woodlands
- Maintain water quality and aquatic habitat conditions

<sup>1</sup>Kurzweil, J. R., K. Metlen, R. Abdi, R. Strahan, and T. S. Hogue. 2021. Surface water runoff response to forest management: Low-intensity forest restoration does not increase surface water yields. *Forest Ecology and Management* 496:119387. <https://doi.org/10.1016/j.foreco.2021.119387>

## FIP Initiative Progress, Biennia 1-3

Progress on metrics reflects implementation supported by OWEB funding, and does not represent all progress achieved via other funding sources.



### Monitoring Approach

- Defines where treatments occur and tracks changes in habitats and species over time for reporting and to support additional monitoring efforts
- Collects pre- and post-treatment data for monitoring the effectiveness of restoring open habitats while protecting old growth
- Uses changes in fuel loads and tree canopy base height in fire behavior models to monitor effectiveness in reducing potential wildfire spread and intensity
- Evaluates changes in social understanding and support for ecological thinning and managed fire with rigorous surveys
- The partnership is seeking funding to support monitoring efforts as guided by the Rogue Forest Restoration Initiative. Ashland is one of the projects tracked by the Rogue Forest Partners and the Rogue Forest Partner Monitoring Plan. Data from the Ashland project area are being incorporated into the Rogue Forest Partner monitoring databases.

# Adaptive Management

## Restoration

CHALLENGES / OPPORTUNITIES	LESSONS LEARNED	ADAPTATIONS
Severe drought and annual fire risks continue to challenge conservation values	New assessments, and collaborative science with new partners (OSU and Rocky Mountain Research Station) highlighted places where efforts could be strengthened (e.g., using Potential Wildfire Operational Delineation, potential control lines and suppression difficulty index)	Leveraging AFARI relationships, continuing to build partnerships, and applying existing monitoring data to increase the pace and scale of restoration through the Rogue Forest Partners and the Rogue Forest Restoration Initiative FIP
Treated units require maintenance to retain desired conditions	Units treated early in the project are requiring inexpensive maintenance follow-up	Partners are planning for ongoing maintenance with underburning or low-density thinning The City of Ashland water fee supports ongoing maintenance Partners secured Oregon Emergency Funding in 2021 for maintenance
Sensitivity of large old trees to burning impacts	Legacy trees can be negatively impacted by pile burning or underburns where residual burn piles are too many or too near legacy trees	Observed risks to legacy trees led to adaptation of how burn piles are placed and ignited, as well as the formation of a team to work on legacy tree protection during burn operations

## Engagement

CHALLENGES / OPPORTUNITIES	LESSONS LEARNED	ADAPTATIONS
Weather and smoke management are a challenge when using prescribed fire around the Smoke Sensitive Receptor Area and are drivers in both the timeline and community outreach	Strong social interest and concern about escalating fire and smoke impacts helped coalesce support for tolerating smoke from prescribed fires, and generated interest and investment in a new consortium to develop a fire ecology curriculum for schools	Engagement has shifted to emphasize proactive planning and best science to guide maintenance and strengthening existing investments to help mitigate future fires
Restoration of open forest and associated fire hazard and landscape resilience objectives are challenged by misguided expectations to retain relatively high levels of canopy cover	Increasing emphasis on community collaboration and subsequent investments in monitoring and public engagement through site visits, discussions, science delivery and other engagement improved transparency in planning and project implementation, ultimately yielding improved public perception and support for the initiative	Additional grant funds for youth programs, prescribed fire training exchanges, fire curriculum education, and landowner outreach education projects were applied to facilitate social support Monitoring has identified opportunities to fine-tune future prescriptions and promote climate adaptation on future projects The partnership has avoided point by point responses to public criticism, and instead addressed concerns in the context of telling their own story with monitoring results

## Partnership Capacity

CHALLENGES / OPPORTUNITIES	LESSONS LEARNED	ADAPTATIONS
Staffing retention and turnover	FIP investment sustained staff stability and was a long-term success The project tracking database has been challenged by a piecemeal approach which followed several staff turnovers	Partners improved staffing consistency by pooling funding and crafting positions to better retain personnel Codification in monitoring methods and protocols has facilitated on-boarding and strengthened consistency

# Adaptive Management, continued

## Planning and Funding

### CHALLENGES / OPPORTUNITIES

Development of Dry Forest restoration theory of change and associated results chain

OWEB funding propelled appropriate ecological thinning and fuels reduction, including pile burning, but there was not enough funding to provide for follow up prescribed underburning, particularly on private lands

### LESSONS LEARNED

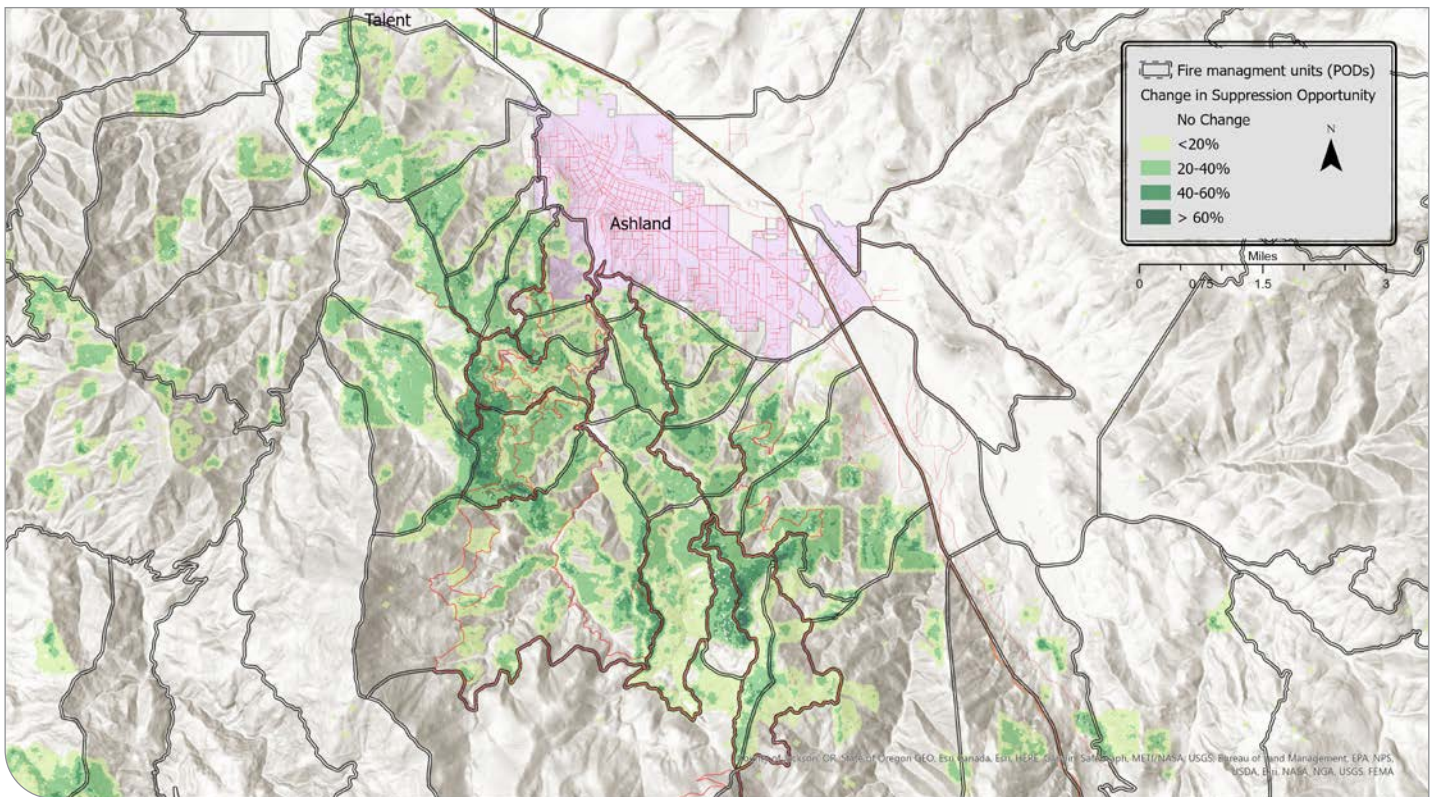
The results chain informed supplemental monitoring to address concerns around climate, water, fire behavior, and social support

Rigorous science indicated that underburned units perform better, and this was further confirmed later with OSU assessments (funded by OWEB Supplemental Monitoring) of suppression difficulty index

### ADAPTATIONS

The results chain provided a foundation for development of the Rogue Forest Restoration Initiative

The partners pursued federal sources in support of the Fire Learning Network and deployment of annual Prescribed Fire Training Exchanges in which a workforce and prescribed burn plans allowed for underburning on several private tracts in AFARI. The Partners also secured and deployed USFS State and Private Forestry to successfully burn 300 acres on a critical fire management zone on private land on the west perimeter of AFARI



## Addressing Climate Change

- Project planning has promoted climate resiliency by decreasing the probability of severe fires, increasing the ability of forests to recover from predicted fires, droughts, and other disturbances. Climate change has elevated the urgency of implementing forest restoration, maintaining conservation actions, and expanding the work throughout the region. With the monitoring data collected by AFARI, the partnership has begun using models to evaluate the effectiveness of prescriptions and current treatments to ameliorate disturbance impacts under the changing climate and generated a baseline for observing changes in the treated landscape. Such assessments could help identify new density and species composition targets, as well as provide recommendations for the proportion of area that should be treated.
- More extensive and intensive thinning to address climate adaptation will likely require a new biological assessment, possibly a new NEPA analysis and consultation with the USFWS around the extent of complex, closed canopy that can reasonably be sustained under an increasingly volatile fire climate.
- Constraints on implementation of more directly climate-adaptive prescriptions include budgets, capacity, and societal and agency willingness to make transformational changes. A shift to a transformational mindset is needed to support, plan for, and implement treatments with sufficient intensity to affect a change in how these forests resist or respond to disturbances. Through implementation and monitoring of the AFARI the partners are building a foundation for climate adaptation of southwestern Oregon forests and this work led to the development of the Rogue Basin Cohesive Forest Restoration Strategy (Metlen et al. 2021)<sup>2</sup> which provides a scalable model that can be applied to other landscapes.

For More Information  
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<sup>2</sup> Kerry L. Metlen, T. Fairbanks, M. Bennett, J. Volpe, B. Kuhn, M. P. Thompson, J. Thrailkill, M. Schindel, D. Helmbrecht, J. Scott, and D. Borgias. Integrating forest restoration, adaptation, and proactive fire management: Rogue River Basin case study. *Canadian Journal of Forest Research*. 51(9): 1292-1306. <https://doi.org/10.1139/cjfr-2020-0480>

PHOTO The Nature Conservancy (Kerry Metlen)

