



Council Study Session Agenda

**ASHLAND CITY COUNCIL
STUDY SESSION AGENDA
Monday, March 18, 2024
Council Chambers, 1175 E Main Street**

Live stream via rvtv.sou.edu select RVT Prime. Recorded meetings are available on our [website](#).

Public testimony will be accepted for both public forum items and agenda items.

If you would like to submit **written testimony** or if you wish to **speak electronically** during the meeting, please complete the **Public Testimony Form** no later than 10 a.m. the day of the meeting.

5:30 p.m. Study Session

- 1. Public Input (15 minutes – Public input or comment on City business not included on the agenda)**
- 2. Fire Code Update**
- 3. City Forestlands Climate Adaption Project**
- 4. Adjournment of Study Session**

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the City Manager's office at 541.488.6002 (TTY phone number 1.800.735.2900). Notification 72 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to the meeting (28 CFR 35.102-35.104 ADA Title I).



Council Study Session

March 18, 2024

Agenda Item	Fire Code Resolution	
From	Mark Shay	Fire Marshal
Contact	Mark.shay@ashland.or.us , (541) 552-2217	
Item Type	Requested by Council ☐ Update ☐ Request for Direction ☐ Presentation ☒ Consent ☐ Public Hearing ☐ New Business ☐ Old Business ☐	

SUMMARY

On February 21, 2023 the City of Ashland adopted the 2022 Oregon Fire Code and approved the addition of a fulltime Fire Marshal. It is necessary to revise the ordinance adopting the 2022 Oregon Fire Code to adequately reflect the City employing a full time fire code official and the planned frequency of fire safety inspections of regulated occupancies.

POLICIES, PLANS & GOALS SUPPORTED

Analyze City departments / programs to gain efficiencies, reduce costs and improve services.
Support innovative programs that protect the community.

BACKGROUND AND ADDITIONAL INFORMATION

The current fire code through ORS was adopted in February 2023, replacing the 2019 Oregon Fire Code with the 2022 Oregon Fire Code. It is necessary to revise the ordinance adopting the 2022 Oregon Fire Code to adequately reflect the City employing a full time fire code official and the planned frequency of fire safety inspections on regulated occupancies within the boundaries of the City.

- Section 1: No Change
- Section 2: No Change
- Section 3: Added the following definition: for Fire Prevention Organization
- Section 4: No Change
- Section 5: No Change
- Section 6: Deleted section "S" relating to Mobile and Temporary Cooking Operations, which are now regulated by the Oregon Fire Code section 319 and implied with adoption of the 2022 Oregon Fire Code.
- Section 7: No Change
- Section 8: No Change
- Section 9: No Change
- Section 10: No Change
- Section 11: No Change
- Section 12: No Change
- Section 13: Establishes the Fire Prevention Organization within the fire department in compliance with National Fire Protection Association 1730. The standard on Organization and deployment of Fire Prevention and Code Enforcement, Plan Review, Investigation and Public Education Operations. Sets minimum inspection frequency in conjunction with the occupancy classification.
- Section 14: No Change





Council Study Session

FISCAL IMPACTS

None

DISCUSSION QUESTIONS

None

SUGGESTED NEXT STEPS

Information provided for Business Meeting on March 19, 2024

REFERENCES & ATTACHMENTS

Ordinance Bill No. 3233

**AN ORDINANCE TO AMEND THE ASHLAND FIRE PREVENTION CODE;
REPEALING AND REPLACING AMC CHAPTER 15.28**

WHEREAS, the Fire Chief wishes to amend the Ashland Municipal Fire Code to adopt the current 2022 Oregon Fire Code and to allow the addition of an inspection program in compliance with NFPA 1730 the Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Education Operations

SECTION 1. 15.28.010 Adoption of Oregon Fire Code

SECTION 2. 15.28.020 Establishment of Duties

SECTION 3. 15.28.030 Definitions

1. "Jurisdiction," as used in the Oregon Fire Code, means the City of Ashland ("Ashland").
2. "Department of Fire Prevention," as used in the Oregon Fire Code, means ".Wildfire and Community Risk Reduction Division"
3. "Fire Code Official," as used in the Oregon Fire Code, means the Fire Chief or designee.

1 4. "Apparatus cost" means the standardized cost, including repairs and depreciation, for the use
2 of Ashland Fire and Rescue ("AF&R") and public works apparatus or equipment, as set forth in
3 adopted regulations of the State Fire Marshal or in City resolution, and the cost for the use of
4 apparatus or equipment of another jurisdiction which may respond to an incident pursuant to
5 statute or intergovernmental agreement.

6 5. "Direct costs" means those costs of supplies, apparatus and labor incurred by the City or
7 another jurisdiction in responding to an incident and as may be set forth in adopted regulations of
8 the State Fire Marshal or in City resolution.

9 6. "Direct fire or rescue services" means any service provided by employees of the City (1) to a
10 person whose person or property is injured or threatened with injury; or (2) to a person whose
11 property has injured or threatens to injure another person or another person's property, for which
12 a charge is not otherwise imposed under this code. "Direct fire or rescue services" includes, but
13 is not limited to, the suppression of fires, the rescue of persons or property, the provision of
14 medical assistance, and containment and cleanup of hazardous materials.

15 7. "Indirect costs" means those costs that are set forth in adopted regulations of the State Fire
16 Marshal or in City resolution, and which are the product of the state "average response
17 availability rate" and the time spent responding to an incident, together with the state "average
18 support services cost per incident," as defined by the State Fire Marshal.

19 8. "General costs" means direct or indirect costs that are not attributable to any particular
20 person who received direct fire and rescue services.

21 9. "Gross negligence" means conduct with conscious indifference to or reckless disregard of the
22 rights of others.

23 10. "Labor costs" means the compensation paid by the City to its employees, including but not
24 limited to base pay, overtime pay and fringe benefits, during the time spent responding to an
25 incident.

26
27 **11: "Fire prevention organization" (FPO) means the organization or the individual, within**
28 **the City of Ashland or otherwise delegated, that has the authority to provide fire**
29 **prevention, inspection and code enforcement, plan review, investigation, and fire and life**
30 **safety education.**

1 12. Occupancy Classification:

2 Low-Risk Occupancy. An occupancy that has a history of low frequency of fires and
3 minimal potential for loss of life or economic loss. Examples of low-risk occupancies
4 could include storage, mercantile, and business.

5 Moderate-Risk Occupancy. An occupancy that has a history of moderate frequency of fires or
6 a moderate potential for loss of life or economic loss. Examples of moderate- risk occupancies
7 could include ambulatory health care and industrial occupancies that do not maintain, store, use,
8 or handle hazardous materials in excess of exempt amounts.

9
10 High-Risk Occupancy. An occupancy that has a history of high frequency of fires, high
11 potential for loss of life or economic loss, or that has a low or moderate history of fires or
12 loss of life but the occupants have a high dependency on the built-in fire protection
13 features or staff to assist in evacuation during a fire or other emergency. Examples of
14 high-risk occupancies could include multiple-family dwellings, high-rise buildings, hotels,
15 dormitories, lodging and rooming, assembly, child care, detention, educational, health
16 care, and industrial.

17 Critical Infrastructure. The assets, systems, and networks, whether physical or virtual,
18 that are so vital to the community that their damage or destruction would have a
19 debilitating effect. Examples of critical infrastructures could include water treatment
20 plant, special structures, public safety buildings, and power plants.

21
22 12.. "Railroad right-of-way" means a right-of-way used for rail transportation.

23 13. Scope. Establishes the organization and deployment of fire prevention resources for
24 fire prevention inspection and code enforcement activities in existing occupancies, new
25 construction and renovation inspections.

26 14. "Transportation route" means a roadway or waterway against which no taxes or assessments
27 for fire protection are levied by the City. (Ord. 3161 § 2, amended, 02/05/2018; Ord. 3081,
28 amended, 04/02/2013)

29
30 **SECTION 4. 15.28.050 Fire Protection System Maintenance**

1 Fire protection systems service providers providing inspections, tests, and maintenance required
2 by OFC 901.6, and the referenced standards shall be qualified and shall provide the inspections,
3 tests, and maintenance in accordance with the referenced standards and section 108.3. Failure by
4 a company or individual service provider to follow the referenced standards is a Class I violation.
5 (Ord. 3161 § 3, amended, 02/05/2018; Ord. 3104, amended, 2014)

6 **SECTION 5. 15.28.060 Restricted Uses During Fire Season**

7 A. The City of Ashland will follow the Oregon Department of Forestry (“ODF”) burn
8 restrictions and regulations during fire season. Open flame and fire pits are prohibited at high fire
9 index.

10 Exemption: A seasonal permit for contractors can be obtained for use within the City of Ashland
11 to allow for powered equipment use during fire season (i.e., landscape, construction, etc.).

12 Working on or within one-eighth (1/8) of a mile of ODF-protected property requires an
13 additional permit issued from ODF.

14 B. The Fire Code Official or designees may issue a permit which allows a person to conduct a
15 restricted activity as long as specified fire prevention measures are taken to reduce the potential
16 for fire ignition. Contractors, such as those performing landscape or construction work, may
17 obtain a seasonal permit for use within the City to allow for powered equipment used during fire
18 season. Working on or within one-eighth (1/8) of a mile of ODF-protected property requires an
19 additional permit issued by ODF. (Ord. 3161 § 4, amended, 02/05/2018; Ord. 3037, amended,
20 09/07/2010; Ord. 2944, amended, 11/06/2007; Ord. 2929, amended, 08/18/2006; Ord. 2925,
21 amended, 04/18/2006; Ord. 2921, amended, 01/05/2006)

22 **SECTION 6. 15.28.070 City of Ashland Modifications to the Oregon Fire Code 2019 2022**
23 **Edition**

24 Ashland Fire Prevention Code incorporates the Oregon Fire Code 2022 Edition except that the
25 following referenced OFC sections are modified as set forth below:

26 A. OFC Section 104.6.3 is modified by the addition of the following language:

27
28 Fire Investigation Reports for fires that are under investigation will not be released until the
29 investigation is complete. Exception: The Fire Chief may release incomplete Fire Investigation
30 Reports if warranted.

B. OFC Section 106.2 is modified by the addition of the following language:

1 1. Inspections outside of normal business hours: The Wildfire and Community Risk Reduction
2 Division will make every attempt to conduct inspections during normal business hours (Monday
3 thru Friday 8 am to 5 pm). If the applicant or business owner's agent requests an inspection
4 outside of normal business hours, or if the Fire Code Official determines a permit inspection is
5 required and there is no other alternative but to conduct the inspection outside of normal business
6 hours, the Fire Code Official shall inform the applicant or business agent there will be an after-
7 hours inspection fee of \$150.00. The inspection will not be performed until the required fees
8 have been paid.

9 For additional information see City of Ashland Fee Schedule.

10 2. Re-Inspection Fees, each Fire & Life Safety inspection is provided with one additional re-
11 inspection at no additional cost to the business. If a second re-inspection is required, a fee of the
12 base inspection plus \$100 shall be assessed. If a third re-inspection is required, a fee of the base
13 inspection plus \$200.00 shall be assessed. If a fourth re-inspection is required, a fee of the base
14 plus \$400.00 shall be assessed.

15 For additional information see City of Ashland Fee Schedule.

16 C. OFC Section 105.1.1 is modified by the addition of the following language:

17 A schedule of permit and service fees not more than the actual or average cost of providing
18 service shall be established by resolution of the City Council and periodically amended by
19 Council resolution and kept at Ashland Fire & Rescue and in the City Recorder's office.

20 Required permits include, but may not be limited to, the following list:

21 1. Operational Permits:

22 a. Fireworks, public display of

23 b. Exhibits and trade shows

24 c. Fumigation and thermal insecticidal fogging

25 d. Liquid or gas-fueled vehicles or equipment in assembly buildings

26 e. Pyrotechnic and special effects material

27 f. Temporary membrane structures, tents and canopies over 400 square feet

28 g. Activities involving open flames

1 h. Haunted Houses

2 i. Marijuana processing

3
4 2. Construction/Use Permits:

5 a. Automatic fire-extinguishing systems

6 b. Battery Systems

7 c. Compressed gases

8 d. Fire alarm and detection systems

9 e. Fire Pumps

10 f. Flammable and Combustible Liquid Storage

11 g. Hazardous Materials

12 h. Industrial Ovens

13 i. LP-gas >125 gallons

14 j. Private Fire Hydrants

15 k. Spraying or dipping operations

16 l. Standpipe systems

17 m. Fire Sprinkler Systems

18
19 D. OFC Section 105.6.30, Open Burning, is modified by deleting the current language of this
20 OFC provision entirely and adding the following language: See Ashland Municipal Code [10.30](#).

21
22 E. OFC Section 503.4 is modified by the addition of the following language:

23
24 1. The Ashland Police Department shall have the authority to issue fire code citations for the
25 following offenses on public and private properties:

26
27 a. Obstruction of marked fire apparatus access roads and fire lanes (Ref. OFC 503.4; 503.2.1)

28
29 b. Failure to maintain existing NO PARKING – FIRE LANE signs/markings (Ref. OFC 503.3;
30 D103.6)

1 c. Obstruction of fire hydrants and fire protection equipment (Ref. OFC 507.5.4; ORS [811.550](#)
2 (16))

3 d. The Ashland Police Department may cite the registered owner of the vehicle if the vehicle is
4 found to be standing in violation or tow the vehicle if in the opinion of the officer the parked
5 vehicle is creating a hazard to the community.

6 F. *Section 506.1.* Add the following sentence:

7
8 The key box shall be installed and maintained in accordance with the manufacturer's
9 instructions, and shall contain keys to gain necessary access as required by the Fire Code
10 Official.

11 G. *OFC Section 507.5.1.* Delete and replace with the following:

12 Where required. Where a portion of the facility or building hereafter constructed or moved into
13 or within the jurisdiction is more than 300 feet from a hydrant on a fire apparatus access road, as
14 measured by an approved route around the exterior of the facility or building, on-site fire
15 hydrants and mains shall be provided where required by the Fire Code Official.

16 Exceptions:

17 1. For Group R-3 and Group U occupancies, the distance requirement shall be 300 feet.

18 2. For buildings equipped throughout with an approved automatic sprinkler system
19 installed in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3, the distance
20 requirement shall be 600 feet (183 m).
21

22 H. OFC Section 307 is modified by deleting the current language of this OFC provision entirely
23 and adding the following language: Refer to AMC [10.30](#).

24 I. OFC Section 901.6, Records, is modified by deleting the current language of this OFC
25 provision entirely and adding the following language:

26 Records of all system inspections, tests, and maintenance required by the referenced standards
27 shall be maintained on the premises for a minimum of three years and service contractors shall
28 send reports of tests to the City of Ashland Fire & Life Safety Division within 30 days of
29 performing the inspection and test. The manner in which contractors shall submit ITM reports to
30 Ashland Fire & Rescue shall be specified by the Fire Code Official.

J. OFC Section 904.1.1 is modified by the addition of the following language:

1 Fire protection system service providers providing inspections, tests, and maintenance required
2 by OFC 901.6 and the referenced standards shall be qualified and shall provide the inspections,
3 tests and maintenance in accordance with the referenced standards. Where the manufacturer
4 requires only manufacturer certified technicians to conduct inspection, testing and maintenance
5 service on their engineered fire protection systems, uncertified technicians shall not service the
6 system. Prior to conducting service in the City of Ashland the technicians shall provide a current
7 manufacturer certification in a manner specified by the Fire Code Official.

8 K. OFC Section 5601.1.3 is modified by the addition of the following language:

9 Notwithstanding ORS [480.110](#) through ORS [480.165](#) and OAR [837-012-0600](#) through OAR
10 [837-012-0675](#), the sale of retail fireworks as defined in OAR [837-012-0610](#) is prohibited within
11 the City of Ashland.

12 1. The sale and/or use of retail fireworks as defined in OAR [837-012-0610](#) is prohibited at all
13 times;

14 2. The sale and/or use of sparklers as defined in ORS [480.110](#) is prohibited at all times;

15 3. The storage of retail fireworks within the City of Ashland is prohibited at all times; and

16 4. The advertising of retail fireworks or sparklers is prohibited within the City of Ashland in
17 accordance with ORS [480.152](#) and OAR [837-012-0665](#).

18 5. As a limited exception from the prohibitions in provisions 1 through 4 above, the use of
19 fireworks for public display is allowed in conformance with NFPA 1123 Code for Fireworks
20 Display, current edition, with a valid Ashland Fire & Rescue Fireworks Permit.

21 L. OFC Section 5601, Storage of Explosives – Prohibited, is modified by the addition of the
22 following language:

23 The scope referred to in Chapter 5601 of the Oregon Fire Code which references the Oregon
24 Revised Statutes and Oregon Administrative Rules related to explosives is amended as follows.
25 The sale, manufacture, possession, transfer and storage of explosives as defined by ORS
26 [480.200\(3\)](#) are prohibited in all areas within the City of Ashland except as specifically permitted
27 in writing by the Fire Code Official.

28 M. OFC Section 5704, Above-Ground Storage of Flammable or Combustible Liquids, is
29 modified by the addition of the following language:
30

1 The limits referred to in Section 5704.2.9.6.1 of the Oregon Fire Code in which the storage of
2 flammable or combustible Class I and II liquids in above-ground tanks outside of buildings is
3 restricted are established as follows: All City of Ashland residential and historical district areas
4 as defined in the Comprehensive Plan. All installation and removal of above ground storage units
5 requires an operational permit from Ashland Fire & Rescue. New above-ground bulk storage
6 plants for flammable or combustible liquids are prohibited within this jurisdiction.

7 N. The City of Ashland is prohibiting section 5707 On-Demand Mobile Fueling Operations
8 within the City Limits.

9 O. OFC Section 6104, Storage of Liquefied Petroleum Gases – Restricted:

10 The limits referred to in Section 6104.2 of the Oregon Fire Code, in which storage of liquefied
11 petroleum gas is restricted, are established as follows: All City of Ashland residential and
12 historical district areas as defined in the Comprehensive Plan are limited to the aggregate
13 capacity of any one installation shall not exceed a water capacity of 500 gallons.

14 Exception: In particular installations, this capacity limit shall be determined by the Fire Code
15 Official, after consideration of special features such as topographical conditions, nature of
16 occupancy, and proximity to buildings, capacity of proposed containers, degree of fire protection
17 to be provided and capabilities of the City of Ashland Fire & Rescue Department.

18 P.OFC Appendix A101.11 is modified by the addition of the following language:

19
20 A decision by the Ashland Fire Code Official may be appealed to a Board of Appeals established
21 pursuant to Oregon Fire Code Section 108 of the Oregon Fire Code. An appellant aggrieved by
22 the decision of the Board of Appeals may appeal to the Oregon State Fire Marshal as provided in
23 ORS 479.180 if the subject of the appeal concerns a matter governed exclusively by the Oregon
24 Fire Code and the appeal is filed within 10 days of the Board's final order. If an appeal from the
25 decision of the Board of Appeals, however, concerns a matter reserved by this Ashland Fire
26 Prevention Code (Ashland Municipal Code Chapter 15.28) for local decision-making, such an
27 appeal must be submitted in writing to the Ashland City Council within 10 days of the Board's
28 final order. A decision by the City Council shall be the final decision of the City and may not be
29 appealed to the State Fire Marshal.

30 Q. OFC Appendix D105.1, Aerial Fire Apparatus Access Roads, is modified by deleting the
current language of this OFC provision entirely and adding the following language:

1 Where required. (Buildings or portions of buildings or facilities exceeding 24 feet in height
2 above the lowest level of fire department vehicle access shall be provided with approved fire
3 apparatus access roads capable of accommodating fire department aerial apparatus.) Where the
4 vertical distance between the grade plane and the highest roof surface exceeds 24 feet approved
5 aerial fire access roads shall be provided. For the purposes of this section, the highest roof
6 surface shall be determined by measurement to the eave of a pitched roof, the intersection of the
7 roof to the exterior wall, or the top of parapet walls, whichever is greater. Overhead utility and
8 power lines shall not be located within the aerial fire apparatus access roadway or between the
aerial fire access road and the building.

9 R. OFC Appendix D105.2 is modified by deleting the current language of this OFC provision
10 entirely and adding the following language:

11 Width. Fire apparatus access roads shall have a minimum unobstructed width of 26 feet in the
12 immediate vicinity of any building or portion of building more than 24 feet in height. (Ord. 3161
13 § 5, amended, 02/05/2018; Ord. 3104, amended, 2014; Ord. 3059, amended, 04/17/2012; Ord.
14 3037, amended, 09/07/2010; Ord. 3006, amended, 03/02/2010; Ord. 2944, amended, 11/06/2007;
15 Ord. 2932, amended, 10/18/2006; Ord. 2929, amended, 08/18/2006; Ord. 2925, amended,
16 04/18/2006; Ord. 2921, amended, 01/05/2006; Ord. 2876, amended, 09/04/2001; Ord. 2871,
17 amended, 08/07/2001)

18 ~~**S. Mobile and Temporary Cooking Operations**~~

19 ~~**The City of Ashland will follow nationally referenced standards of inspection and**~~
20 ~~**maintenance provided by the National Fire Protection Agency (NFPA 1 National Fire Code**~~
21 ~~**section 50.7) for Mobile and Temporary Cooking Operations.**~~

22 **SECTION 7. 15.28.090 New Materials, Processes or Occupancies – Permits Required**

23 The Building Official, the Fire Chief and the Fire Marshal shall act as a committee to determine
24 and specify, after giving affected persons an opportunity to be heard, any new materials,
25 processes or occupancies for which permits are required in addition to those now enumerated in
26 the Oregon Fire Code. The Building Official, in accordance with Section 104.9 of the Oregon
27 Structural Specialty Code, shall record and enter in the files of the Building Department any
28 action granting approval of new or alternate materials. (Ord. 3161 § 6, amended, 02/05/2018;
29 Ord. 2929, amended, 08/18/2006; Ord. 2925, amended, 04/18/2006; Ord. 2921, amended,
30 01/05/2006)

SECTION 8. 15.28.100 Penalties

1 A. Any person violating or causing violation of any of the provisions of this chapter has
2 committed a Class I violation and, upon conviction thereof, is punishable as prescribed in AMC
3 [1.08.020](#). Such person, firm or corporation is guilty of a separate violation for each and every
4 day during which any violation of this chapter is committed or continued by such person, firm or
5 corporation. This violation can be retroactively applied to the first day the occupant or owner
6 was made aware of the violation by the Fire Code Official.

7 B. For any violations of this chapter deemed to be life-threatening, a citation can be issued for
8 each and every occurrence, including multiple occurrences in one (1) day. Life-threatening
9 hazards include but are not limited to overcrowding, locking or obstructing doors designated to
10 remain unlocked, and shutting off or removing designated fire protection equipment.

11 C. The application of the above penalty shall not be held to prevent the enforced removal of
12 prohibited conditions. (Ord. 3161 § 7, amended, 02/05/2018; Ord. 3059, amended, 04/17/2012;
13 Ord. 2929, amended, 08/18/2006; Ord. 2925, amended, 04/18/2006; Ord. 2921, amended,
14 01/05/2006)

15 **SECTION 9. 15.28.110 Severability**

16 Should any section, paragraph, sentence or word of this ordinance or of the Code hereby adopted
17 be declared for any reason to be invalid, it is the intent of the City of Ashland that it would have
18 passed all other portions of this ordinance independent of the elimination here from of any such
19 portion as may be declared invalid. (Ord. 2929, amended, 08/18/2006; Ord. 2925, amended,
20 04/18/2006; Ord. 2921, amended, 01/05/2006)

21 **SECTION 10. 15.28.120 Firefighting Outside City - Authorized**

22 In accord with ORS [476.290](#), the Fire Chief or representative is authorized to extinguish
23 uncontrolled fires that are found to be burning in unprotected areas situated outside the
24 boundaries of the City and that are causing or may cause an undue jeopardy to life or property if,
25 in the opinion of the Fire Chief or representative, such fire is causing or may cause an undue
26 jeopardy to life or property. (Ord. 2929, amended, 08/18/2006; Ord. 2925, amended, 04/18/2006;
27 Ord. 2921, amended, 01/05/2006; Ord. 1698 § 1, amended, 1971)

28 **SECTION 11. 15.28.130 Firefighting Outside City – Resources**

29 In extinguishing a fire pursuant to Section [15.28.120](#), the Fire Chief or representative may
30 employ the same means and resources used by them to extinguish similar fires within the City.

(Ord. 2929, amended, 08/18/2006; Ord. 2925, amended, 04/18/2006; Ord. 2921, amended, 01/05/2006)

SECTION 12. 15.28.150 Plan Review/Permits – Fees

For application in this City, Oregon Fire Code plan review fees shall be established by resolution of the City council. (Ord. 2929, amended, 08/18/2006; Ord. 2921, amended, 01/05/2006; Ord. 2906, added, 04/06/2004)

SECTION 13. 15.28.160 Code Compliance Inspection / Fees

A. **The City of Ashland will follow nationally referenced standards on fire prevention inspection and code enforcement as provided by the National Fire Protection Agency (NFPA 1730). This standard contains minimum requirements relating to the organization and deployment of fire prevention inspection and code enforcement, plan review, investigation, and public education operations. This standard also addresses the strategic and policy issues involving the organization and deployment of fire prevention programs and does not address methods for carrying out specific fire prevention services, activities, and programs.**

B. **The City of Ashland shall maintain a written statement or policy that establishes the following:**

- (1) **Existence of the FPO**
- (2) **Services that the FPO will provide**
- (3) **Basic organizational structure**
- (4) **Expected number of FPO members**
- (5) **Functions that FPO members are expected to perform**

C. **General Requirements: Fire prevention inspection and code enforcement services, including department personnel, equipment, and all support and resources, shall be structured to meet the organizational objectives. Fire prevention inspection and code enforcement shall be conducted to ensure compliance with adopted codes and standards. Personnel responsible for fire prevention and code enforcement activities shall meet the job performance requirements in NFPA 1031 and the**

1 certification and training requirements for conducting fire code
2 enforcement found in OAR 837-039-0016 for the inspection duties they
3 perform.

4
5
6 D. Minimum Inspection Frequency: Existing occupancy fire prevention
7 inspection and code enforcement inspection frequencies shall not be less
8 than:

<u>Occupancy Classification</u>	<u>Frequency of Inspections</u>
<u>High:</u>	<u>Annually</u>
<u>Moderate:</u>	<u>Biennially</u>
<u>Low:</u>	<u>Triennially</u>
<u>Critical Infrastructure:</u>	<u>Per the City of Ashland</u>

14
15 The schedule for fire code compliance inspections shall be established by resolution of the City
16 Council. (Ord. 3161 § 8, amended, 02/05/2018; Ord. 2929, amended, 08/18/2006; Ord. 2921,
17 amended, 01/05/2006; Ord. 2906, added, 04/06/2004)

18 **SECTION 14.15.28.170 Cost Recovery Fees**

19
20 ***A. Fire and Rescue Service Charges Imposed.***

- 21
22 1. Any person receiving direct fire and rescue services from AF&R as a result of a motor
23 vehicle collision, a hazardous materials incident, a victim rescue or an occurrence on a
24 railroad right-of-way or transportation route that requires AF&R service, shall be liable to
25 the City for the direct and indirect costs incurred by the City in responding to the incident.
- 26 2. Whenever a fire is extinguished or attempted to be extinguished by AF&R outside the
27 City of Ashland, the owner of the property involved in such fire shall be liable to the City for
28 the direct and indirect costs of fire and rescue services incurred by the City in responding to
29 the incident.
- 30 3. When more than one person receives direct fire and rescue services from AF&R in a
single incident, the general costs incurred may be apportioned pro rata among the recipients
of the services not otherwise exempt from payment or among the parties involved in the

1 incident, or through any other apportionment which reasonably allocates the costs of the
2 benefits received.

3 B. *Exemptions from Charges.*

4
5 1. Except as provided in this section, a person liable for a charge imposed under Section
6 [15.28.170](#) shall be excused from paying the charge if the person presents satisfactory proof
7 to the City that, at the time of the incident giving rise to the charge, the person was a resident
8 of the City, owned real property within the City, or was the holder of a valid license from the
9 City issued under Chapter [6.04](#).

10 2. The exemptions of this section do not apply to:

- 11 a. Drivers of vehicles under the influence of alcohol or drugs;
- 12 b. Persons who commit acts of gross negligence or are otherwise in violation of local
13 law or state statute;
- 14 c. Persons causing incidents that require hazardous materials clean-up; or
- 15 d. Fire extinguishment efforts by AF&R on property outside the City of Ashland.

17 C. *Interest on Charge.* Any charge imposed under this section shall be due to the City upon
18 demand or billing by the City. Any person who fails to pay such charge within ninety (90) days
19 of receipt of a bill from the City shall also pay interest on the charge from the date of the billing
20 at the rate of 12 percent (12%) per year; interest for a fraction of a year shall be prorated.

21 D. *Use of Payments Received.* Fire and rescue service charges collected by the City shall be
22 deposited in accounts designated for such payments. Funds in such accounts shall be expended
23 only for operational costs of the fire department, police department, or the public works
24 department, to reimburse the City for costs of administering and collecting charges for fire and
25 rescue services.

26 E. *Failure to Pay Charge – Violation.*

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28 1. Any person who fails to pay a fire and rescue service charge within ninety (90) days of
29 receipt of a bill from the City, or within such additional time as may be allowed by a written
30 extension of time by the Fire Chief, is in violation of this code. The issuance and
enforcement of a citation for this violation is governed by the provisions of AMC Chapters [1](#)
and [15](#), and any other remedy provided by municipal or state law.

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Council Study Session

March 18th, 2024

Agenda Item	Ashland Forestland Climate Change Adaptation Project: Phase I Update		
From	Chris Chambers	Forestry Officer	
Contact	Chris.chambers@ashland.or.us		
Item Type	Requested by Council ☐ Update ☒ Request for Direction ☐ Presentation ☒		

SUMMARY

This update continues previous Council actions including the adoption of the 2023 City Forestlands Climate Change Addendum to the Ashland Forest Plan and recent contract with Lomakatsi Restoration Project to mark trees for helicopter removal. Staff will present current planning and data showing outcomes from tree marking, anticipated timelines, budget implications, three options for project implementation, community outreach, plans for trail and road closures, and a grant funding update from project partner Lomakatsi Restoration Project. Staff will also describe work to use by-product logs and chips for salmon habitat and local parks projects.

POLICIES, PLANS & GOALS SUPPORTED

City Council Goal: Address Climate Change

City Council Goal: Reduce Wildfire and Smoke Risk

City Plans: Ashland Natural Hazard Mitigation Plan, Community Wildfire Protection Plan, 2016 Ashland Forest Plan and 2023 Forest Plan Climate Change Addendum.

Citizen Budget Goals: Wildfire Safety was the highest budget priority from resident in-person and online polling in spring 2023

BACKGROUND AND ADDITIONAL INFORMATION

Recent drought and extreme heat have created what researchers call a "[decline spiral](#)" in Douglas-fir trees, a species that has proliferated on lower elevation City and APRC lands due to past logging and cessation of indigenous burning practices. In response to a significant uptick in dead and dying trees, the City commissioned a [drone-based survey](#) of impacted municipal forestlands. We found just over 20% of Douglas-fir were dead or visibly dying. Further data from local U.S. Forest Service researchers has since shown at least an additional 25% (range of 20% to 60%) of trees that appeared green during summer of 2023 were already infested with bark beetles and will likely die this coming spring. Climate change projections for coming years show that Douglas-fir will continue to die, making it imperative that the City respond quickly to prevent the build-up of fuels shown to cause significant ecological and private property damage during fires.





Council Study Session

Following guidance in the 2016 Ashland Forest Plan and 2023 Climate Change Addendum, staff and the Ashland Forestlands Management Advisory Committee proposed Phase One of a Climate Change Adaptation Project to quickly address increased fire danger from dead/dying trees and begin the critical work of helping our forests adapt to changing conditions. Public meetings and tours were offered to help inform the planning effort. In November, Council approved a contract with Lomakatsi Restoration Project to assist the City with marking dead, dying, and overcrowded forests for a future helicopter-based thinning project, part of Phase One implementation. A proposed contract with Timberline Logging Enterprises, LLC represents a significant investment in the safety of our community and the sustainability and [long-term survival of our local forests](#) that are a cornerstone of Ashland's local culture and economy.

The project addresses safety concerns along trails and roads where hundreds of dead trees need to be removed for public safety. Importantly, the project also reduces risk to critical infrastructure at the City's Water Treatment Plant and along the course of Ashland Creek where dead trees falling into the flood zone threaten the City's water supply pipelines, road crossings, culverts, and downstream to the plaza itself.

Forests across the west are under significant stress from climate change, resulting in permanent loss of forest cover in the southwest and the southern Sierra Nevada, and a shifting of climate zones resulting in ["zombie forests"](#) all the way into Northern California and likely Southern Oregon as well. Proactively addressing these issues is the most fiscal, ecological, and protective course of action for the community's interest and safety.

FISCAL IMPACTS

The current budget dedicated to wildfire and forest management is insufficient to pay for this unexpected cost. City Administration and Finance have identified additional funding to cover the added cost of this work. Project partner Lomakatsi Restoration Project recently pledged \$100,000 of federal funding and future in-kind labor to assist with prescribed burning, invasive species management, and replanting. Revenue from log sales as a by-product of this work will also offset a significant portion of the costs. The final mill pricing results (due March 15th) will be presented at the Council meeting with several courses of action with varying costs.

Given current market trends, projected costs, and the Timberline pricing proposal for this project, staff predicts a net need of between \$500,000 and \$715,000 this biennium to make this project "fly" between now and the end of the fiscal year.



Council Study Session

DISCUSSION QUESTIONS

What are potential outcomes if the City does not act now?

How do we measure success?

How are we mitigating potential impacts to wildlife during this project?

How does removing trees in our forest help protect homes in our community?

SUGGESTED NEXT STEPS

An Special Procurement contract will be presented to Council at the March 19th business meeting for decision. If approved, we expect work to start quickly after contract execution.

REFERENCES & ATTACHMENTS

[2023 Ashland Forest Plan Climate Change Addendum](#)

[November 2023 Lomakatsi Restoration Project Contract](#)

[Why our Forests Are Declining: Trees on the Edge OSU Extension Research Publication](#)

**Final Climate Change Addendum to the
2016 Ashland Forest Plan**
Approved by Ashland City Council in April 2023

I. Introduction

The 2016 Ashland Forest Plan ([AFP](#)) contained a chapter on climate change, but it was general in nature and limited by uncertainty as to the impact climate change would have on the approximately 1,200 acres of forest lands managed by the City of Ashland and Ashland Parks and Recreation Commission (APRC). The increased research and rapid rate of climate change induced impacts on Ashland's forest lands over the past six years have added considerably to the Forest Lands Commission's (FLC, now a management advisory committee) understanding of the urgent need to address climate change impacts through recommendations to the Ashland City Council for planning direction and management actions over the next 25 years. Current drought and temperature-related changes to vegetation on municipal forest lands warrant an improved and more comprehensive analysis of climate-adaptive planning and management beyond what was addressed in the AFP. Adaptive management is a key overarching strategy addressed throughout this addendum to assess both new and changing resource conditions and land management goals, as well as those that remain unchanged at this time.

Specific examples of necessary adaptive management updates in planning direction and management actions that this addendum will add to the AFP include:

- Shifting from the restoration paradigm that guided previous forest planning and management to an enhanced adaptive management strategy that incorporates new science and technology to effectively address climate change-induced forest land conditions that are likely without historic reference.
- Utilize existing data from attribute tables and encourage contractors to both review data and update it as appropriate.
- Maintaining and promoting refugia conditions and stand characteristics to buffer against climate change impacts to allow diverse habitats to persist. Develop a finer scale approach to refugia¹ delineation, where appropriate.
- Enhance a variable mosaic of forest structure conditions and fuel loads. For example, creating openings in the forest canopy to reduce potential crown or ground fire intensity from continuous tree canopies or surface fuels. Growing shade intolerant and fire tolerant species would be balanced with higher tree densities and fuel loading in other areas such as riparian areas.
- Managing to promote and maintain healthy, functional, and productive soil conditions. This addendum will add soils as a stand-alone chapter with equal standing with other resources addressed in the AFP.
- Planning for increasing frequency and intensity of extreme precipitation events that could negatively impact soils and aquatic resources, resulting in the loss of ecosystem services in Ashland's built environment including road systems, trails, infrastructure, and other downstream assets and values.

¹ Refugia: Locations that experience less severe or less frequent disturbances than the surrounding landscape.

- Anticipating and proactively treating tree mortality events to reduce excessive fuel accumulations. Additionally, implementing a rapid response for the strategic and timely removal of dead and dying trees will reduce overall costs of treatment, enhance public safety, and contribute to the local timber supply (only as a by-product of ecosystem management).
- Mitigating the increasing impact of habitat loss on wildlife populations from wildfire, weather pattern changes, insects and disease outbreaks, and pressures from recreational use on city forest lands because of climate change while considering adjacent land ownerships.
- Monitoring, evaluation, and regulation of recreation resource users to protect ecosystems from the additive stressors of climate change and to protect the recreation resource itself.
- Improving coordination and partnerships between various city departments, APRC, the Rogue River-Siskiyou National Forest, neighboring communities, volunteer and advocacy organizations, and various stakeholder groups.

II. Ashland Forest Plan Climate Change Addendum Development

The FLC has a long history, dating back to the mid-1990s, of public engagement and the development of professional and implementable planning and management documents listed below:

- [City Forestlands Restoration Phase II \(2004\)](#)
- [Coordination and contribution to the Ashland Forest Resiliency Community Alternative on U.S. Forest Service lands in the Ashland Watershed under the Ashland Forest Resiliency Stewardship project \(2004\)](#)
- [City Forestlands Restoration Phase III for the City's Winburn parcel \(2009\)](#)
- [Ashland Forest Plan \(2016\)](#)

To create this addendum to the AFP for climate change-specific adaptative management recommendations on City and APRC forest lands, the FLC took the following steps to research, author, review, and prepare this document for presentation to the City Council:

- Consultant Marty Main of Small Woodland Services, Inc. compiled and presented an [extensive literature review](#) of predicted climate change impacts on vegetation, wildfire behavior, soils, hydrology, wildlife, recreation, and carbon storage to the FLC, within the context of 25 years of past management. Main suggested changes to the AFP based on his assessment of existing research compared to policy and science in the 2016 Ashland Forest Plan.
 - Forest Lands Committee members reviewed and discussed each recommendation to determine if a change to the AFP was needed or if current direction in the AFP was sufficient.
 - Planning direction and management actions to adapt or change are described in this addendum.
 - A public review period of the draft addendum occurred prior to finalization and presentation to the City Council.
-

III. Ashland Forest Plan Climate Change Addendum

This section describes recommendations by the FLC for changes to planning direction and management actions for the city's forest lands and resources. Unless otherwise stated, guidance in the [2016 AFP](#) (www.ashland.or.us/forestplan) remains in effect.

A. Vegetation

- Increase individual tree and stand-level resilience and diversity of Plant Association Groups (PAGs) more tolerant of climate-induced high-severity disturbance and predicted future conditions.
- Identify unique vegetation types that are currently under stress and implement management strategies to maintain them within a refugia framework. Promote refugia to buffer against climate change impacts and to allow at-risk species to persist and expand.
- Emphasize fuel treatments adjacent to refugia to minimize risk of high severity fire in refugia.
- Consider adding deferred or untreated units to the refugia framework.
- Rate the refugia potential of units based on temperatures, moisture, aspect, and site productivity. Consider refugia subtypes to rate units across multiple refugia categories. Develop a finer scale approach to refugia ratings and delineation.
- Modify silvicultural prescriptions to produce a more variable structural mosaic including more open forests to reduce density-related tree stress and mortality. Emphasize uneven-aged stand structure to encourage vigor in multiple crown classes and seral stages, without compromising hardwood development and ground shading.
- Prioritize pre-emptive treatment of vulnerable and mortality-prone sites to avoid outbreak-level mortality using [Main's risk rating system](#).
- Increase scope and intensity of fuels reduction treatments on and adjacent to AFP parcels for more wildfire management effectiveness, (as referred to in the [Potential Operational Delineations \(PODs\) analysis](#)) during predicted increasing higher-severity wildfire disturbances. Emphasize area-wide treatments taking advantage of control features over linear treatments (fuel breaks) to maximize suppression success and footprint of climate-adapted forests.
- Identify and reduce potential vectors for invasive species. Aggressively monitor, inventory, and manage invasive species using an integrated pest management approach.
- Use prescribed burning to reduce stand density, increase heterogeneity of vertical and horizontal stand structure and fuel loading, and promote tree species and individuals better adapted to predicted climate change and the resulting disturbance regimes.
- When updating the AFP and for future project documents:
 - Define and discuss the term refugia.
 - Define and discuss the term pyrosilviculture.
 - Define and discuss the PODs rating system.
 - Update existing plant list.

B. Soils

- Add a stand-alone soils chapter to the AFP during the next update.
 - Reduce erosion potential by maintaining higher root-holding capacity on sites vulnerable to excessive erosion through increased occupancy of vegetation.
-

- On sites vulnerable to erosion, consider alternative management such as radial thinning only around vigorous retention trees, thinning in strips across the contour, and creating small openings (< 1 acre).
- Manage for endemic, rather than outbreak, levels of tree mortality to maintain sufficient amounts of Coarse Woody Material (CWM) for soil health while avoiding an excess of snags and CWM which may result in long duration fires.
- Increase protection and enhancement of below-ground soil functions and processes, particularly for enhancement of water and carbon retention.
- Reduce the likelihood of slope failure and landslides by applying site-specific management strategies in areas designated as landslide hazards by the State of Oregon.
- Increase the scale and intensity of prescribed underburning to decrease possibility of soil loss from high-severity fire. Reduce the likelihood of erosion by implementing mosaic burns to retain unburned patches and minimize large areas of bare soil exposure.
- Increase the creation and retention of partially burned CWM and biochar through light underburning.
- Define and discuss biochar when updating the AFP.

C. Carbon Sequestration and Storage

- Consider carbon sequestration and storage as a resource to be managed.
- Develop CWM budgets based on management priorities and PAGs.
- Assign two CWM budgets for PAGs within riparian areas: (1) streamside moist PAG and (2) upland dry PAG.
- Explore options to generate revenue from carbon sequestration and storage while recognizing that lower elevation dry forests are predicted to lose carbon as vegetation type shifts. Carbon storage is more appropriate in the wettest Plant Association Groups in riparian areas and the Winburn Parcel.
- Though the Ashland Climate Energy Action Plan calls for carbon neutrality, we recognize that this may not be possible on City forestlands, where goals of community wildfire safety and maintaining forested ecosystems intact are higher priorities.

D. Hydrology

- Monitor changes in stream condition classes and focus management on perennial and intermittent streams. Update inventory if climate change causes alterations to stream condition classes.
 - Evaluate, upgrade, and maintain forest road system (7 lane miles) in partnership with U.S. Forest Service. Improve drainage systems and increase culvert sizes where needed in anticipation of likely increase in peak flows. Minimize sediment discharge from roads and ditches into the hydrologic network.
 - Create and maintain more canopy openings for longer retention of snow at the ground surface, where appropriate.
 - Manage organic matter amounts, specifically CWM and biochar, to increase water holding capacity.
 - The combination of the projected extension of the dry season and the fire season, and more extreme precipitation events during the wet season with higher peak flows, presents an urgent need for adaptive management in Riparian Management Areas (RMA).
 - Target stands for thinning and promote more shade intolerant species higher in hydrologic
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- networks (regardless of elevation) in intermittent and ephemeral portions of streams.
- Utilize RMAs as corridors connecting mid- and late-seral habitats across all land ownerships.
- FLC recommends that APRC designate the Ashland Ponds parcel as anadromous fish critical habitat to manage for salmon and steelhead spawning and rearing habitat.
- Manage for terrestrial and aquatic RMA communities, based on PAGs and stream class.
- Prioritize the reduction of fuel continuity adjacent to major riparian areas (especially along Ashland Creek) to discourage high-severity disturbance from occurring within RMAs.

E. Wildlife

- All management actions, including refugia enhancement, will consider vulnerable and at-risk species and their habitat as identified by federal and/or state agencies such as coho salmon and pacific fisher.
- Increase public awareness of wildlife moving into the city to seek water sources during the dry season. Establish and maintain water sources away from the city to reduce human/wildlife conflicts.
- Maintain landscape level habitat connectivity as ranges shift by implementing broader landscape level analysis and partnerships with adjacent landowners, especially along RMAs connecting with cooler aspects.
- Reduce pressures on wildlife species from additive sources other than climate change.

F. Recreation

- Protect recreation resources from the additive stressors of climate change.
- Establish and codify the relationship between FLC and APRC to further define roles and responsibilities for planning direction and management actions. Specifically, develop procedures for FLC to maintain AFP consistency and provide advisory input to APRC when modifications or additions to the city trail network is proposed.
- Increase public awareness of potential human-caused high-severity disturbance that can be exacerbated by climate change in order to protect amenity values, user experience, public safety, and access.
- Recommend that city emergency evacuation plans are updated to include trail users in the watershed.
- With higher predicted summer temperatures, expect increased demand for recreational use of city lands in cooler locations and along RMAs. In other areas, higher summer temperatures may modify the amount, timing, or seasonality of some recreation uses.
- Improve user awareness of:
 - climate change
 - wildfire safety
 - potential ignition sources
 - forest management objectives
 - trail etiquette
 - invasive species
 - reducing negative resource impacts

- Through partnerships, manage recreation to reduce negative impacts to vulnerable species, climate refugia integrity, and forest lands stressed by climate change.
 - Increase monitoring, inventory, and management of invasive species introduced by recreation, especially along trails and parking areas.
 - Plan for increased maintenance of access roads, parking areas, trails, and other recreational infrastructure due to more frequent and intense extreme precipitation events and increased use during the wet season.
-

Council Business Meeting

Date: November 7, 2023

Agenda Item	Special Procurement Request for Approval for Contract to Lomakatsi Restoration Project	
From	Chris Chambers	Forestry Officer
Contact	Chris.chambers@ashland.or.us (541) 552-2066	

SUMMARY

The Fire Department is seeking approval of a Special Procurement to Lomakatsi Restoration Project (LRP) to implement wildfire safety and forestry work on municipal lands governed by the Ashland Forest Plan. Lomakatsi will implement the first phase of climate change adaptation work necessary for community safety, ecological integrity, and watershed protection. City forestlands management was previously provided by long-time contractor Small Woodland Services, Inc that no longer hosts a workforce. Lomakatsi has a long relationship with the City and community from decades of work in and around Ashland including as a partner under a Master Stewardship Agreement for the Ashland Forest Resiliency Stewardship Project in the Ashland Watershed. Through this experience, Lomakatsi has acquired unique and highly desirable skills and knowledge that will benefit the City's interest in adapting our forests to the changing climate.

POLICIES, PLANS & GOALS SUPPORTED

City Council Goal: Address Climate Change

City Council Goal: Reduce Wildfire and Smoke Risk

City Plans: Ashland Natural Hazard Mitigation Plan, Community Wildfire Protection Plan, 2016 Ashland Forest Plan and 2023 Forest Plan Climate Change Addendum.

Citizen Budget Goals: Wildfire Safety was the highest budget priority from resident in-person and online polling in spring 2023.

PREVIOUS COUNCIL ACTION

Council approved Special Procurements for past contracts utilizing City and federal funds to support the AFR project, including in BN13-15, BN15-17, and BN17-19 with Lomakatsi Restoration Project.

Council created the AFR project water fee funding source with associated Resolution during the 2013-15 Biennium. The fee was increased with an updated Resolution for the 2019-2021 Biennium.

Council unanimously passed the 2023 Ashland Forest Plan Climate Change Addendum.

BACKGROUND AND ADDITIONAL INFORMATION

Since the initial 1992 Ashland Forest Plan, the City and Ashland Parks and Recreation Commission (APRC) have taken a proactive approach to forest ecosystem management to reduce wildfire threat to the community and municipal watershed while maintaining other critical ecosystem values such as habitat and recreation. Over those decades, work has involved restoration projects (I,II,III) aimed at reversing trends of accumulating fuels, species changes, and the lack of regular, low-intensity fires. Climate change, including unprecedented tree die-off, has now forced a different paradigm of forest stewardship as adaptation to heat, drought, and intensifying fires requires us to change course. To that end, Council passed the 2023 Forest Plan Climate Change Addendum in April. That addendum acknowledged the escalating and projected effects of climate change and anticipated project work that would need to take place to adapt our forests to the changing climate.

This contract will allow the City to work with long-time partner Lomakatsi Restoration Project on the first phase of climate adaptation, made more urgent by the recent die-off of as much as 45% of dominant trees across the lower Ashland watershed and adjacent Siskiyou Mountain Park.

Lomakatsi will assist the City's wildfire division by assessing areas of dead, dying, and overly dense trees, marking trees that need to be removed, tallying trees, assisting with helicopter yarding and fuels management, and collecting data to help report outcomes to the community and Council.

Beginning in the 2013-2015 biennium, the City Council elected to contribute funding to the AFR Project from an assessment placed on water meters throughout Ashland. During the 2019 budget process, the City Council expanded the application of water fee dollars to include all lands (only federal in the past) strategic to the City's interest in wildfire safety, including municipal lands.

Given their history of partnership with the City, good community standing, and experience in the forest ecosystems of the Ashland Watershed, Lomakatsi Restoration Project is a unique asset that would benefit the City and citizens as a contractor on this phase of climate adaptation work.

FISCAL IMPACTS

Available funding in the Wildfire Division and a recent budget supplement passed by City Council adding over \$141,000 of previously unappropriated funds are sufficient at this point to fund this contract in full.

STAFF RECOMMENDATION

Staff recommends approval of the Special Procurement to Lomakatsi Restoration Project for forestry services.

ACTIONS, OPTIONS & POTENTIAL MOTIONS

"I move that the City Council, acting as local contract review board, approve this special procurement contract to Grayback Forestry, Inc not to exceed \$250,000 through June 30, 2025 for forestry work critical to our watershed and community safety."

REFERENCES & ATTACHMENTS

Contract for Good and Services

Form for Special Procurement, Request for Approval

Determination of Feasibility Memo from Staff

2023 Ashland Forest Plan Climate Change Addendum

GOODS & SERVICES AGREEMENT (GREATER THEN \$25,000)

CITY OF ASHLAND

20 East Main Street
Ashland, Oregon 97520
Telephone: 541/488-5587
Fax: 541/488-6006

PROVIDER: Lomakatsi Restoration Project

PROVIDER'S CONTACT: Marko Bey

ADDRESS: 645 Washington Street
Ashland, OR 97520

PHONE: (541) 488-0208

This Goods and Services Agreement (hereinafter "Agreement") is entered into by and between the City of Ashland, an Oregon municipal corporation (hereinafter "City") and Lomakatsi Restoration Project., a domestic business corporation ("hereinafter "Provider"), for wildfire fuels reduction and forestry services.

1. PROVIDER'S OBLIGATIONS

1.1 Provide resources as ordered by the City to accomplish objectives set forth by the City and the Ashland Forest Resiliency Partnership to accomplish prescribed burning, forest thinning, piling, and other forestry related activities as set forth in the "SUPPORTING DOCUMENTS" attached hereto and, by this reference, incorporated herein. Provider expressly acknowledges that time is of the essence of any completion date set forth in the SUPPORTING DOCUMENTS, and that no waiver or extension of such deadline may be authorized except in the same manner as herein provided for authority to exceed the maximum compensation. The goods and services defined and described in the "SUPPORTING DOCUMENTS" shall hereinafter be collectively referred to as "Work."

1.1.1 **Supporting Documents/Conflicting Provisions:** This Agreement and any exhibits or other supporting documents shall be construed to be mutually complimentary and supplementary wherever possible. In the event of a conflict which cannot be so resolved, the provisions of this Agreement itself shall control over any conflicting provisions in any of the exhibits or supporting documents.

1.2 Provider shall obtain and maintain during the term of this Agreement and until City's final acceptance of all Work received hereunder, a policy or policies of liability insurance including commercial general liability insurance with a combined single limit, or the equivalent, of not less than \$2,000,000 (two million dollars) per occurrence for Bodily Injury and Property Damage.

1.2.1 The insurance required in this Article shall include the following coverages:

- Comprehensive General or Commercial General Liability, including personal injury, contractual liability, and products/completed operations coverage; and
- Automobile Liability.

1.2.2 Each policy of such insurance shall be on an "occurrence" and not a "claims made" form, and shall:

- Name as additional insured "the City of Ashland, Oregon, its officers, agents and employees" with respect to claims arising out of the provision of Work under this Agreement;
- Apply to each named and additional named insured as though a separate policy had been issued to each, provided that the policy limits shall not be increased thereby;

- Apply as primary coverage for each additional named insured except to the extent that two or more such policies are intended to "layer" coverage and, taken together, they provide total coverage from the first dollar of liability;
- Provider shall immediately notify the City of any change in insurance coverage
- Provider shall supply an endorsement naming the City, its officers, employees and agents as additional insureds by the Effective Date of this Agreement; and
- Be evidenced by a certificate or certificates of such insurance approved by the City.

1.3 All subject employers working under this Agreement are either employers that will comply with ORS 656.017 or employers that are exempt under ORS 656.126. As evidence of the insurance required by this Agreement, the Provider shall furnish an acceptable insurance certificate prior to commencing any Work under this Agreement.

1.4 Provider agrees that no person shall, on the grounds of race, color, religion, creed, sex, marital status, familial status or domestic partnership, national origin, age, mental or physical disability, sexual orientation, gender identity or source of income, suffer discrimination in the performance of this Agreement when employed by Provider. Provider agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. Further, Provider agrees not to discriminate against a disadvantaged business enterprise, minority-owned business, woman-owned business, a business that a service-disabled veteran owns or an emerging small business enterprise certified under ORS 200.055, in awarding subcontracts as required by ORS 279A.110.

1.5 In all solicitations either by competitive bidding or negotiation made by Provider for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Providers of the Provider's obligations under this Agreement and Title VI of the Civil Rights Act of 1964 and other federal nondiscrimination laws.

1.6 **Living Wage Requirements:** If the amount of this Agreement is \$21,507.75 or more, Provider is required to comply with Chapter 3.12 of the Ashland Municipal Code by paying a living wage, as defined in that chapter, to all employees performing Work under this Agreement and to any Subcontractor who performs 50% or more of the Work under this Agreement. Provider is also required to post the notice attached hereto as "Exhibit A" predominantly in areas where it will be seen by all employees.

2. CITY'S OBLIGATIONS

2.1 City shall pay Provider at the rates specified in the pricing portions in the SUPPORTING DOCUMENTS as full compensation for all Work to be performed pursuant to this agreement.

2.2 In no event shall Provider's total of all compensation and reimbursement under this Agreement exceed the sum of \$250,000 without express, written approval from the City official whose signature appears below, or such official's successor in office. Provider expressly acknowledges that no other person has authority to order or authorize additional Work which would cause this maximum sum to be exceeded and that any authorization from the responsible official must be in writing. Provider further acknowledges that any Work delivered or expenses incurred without authorization as provided herein is done at Provider's own risk and as a volunteer without expectation of compensation or reimbursement.

3. GENERAL PROVISIONS

3.1 This is a non-exclusive Agreement. City is not obligated to procure any specific amount of Work from Provider and is free to procure similar types of goods and services from other providers in its sole discretion.

- 3.2 Provider is an independent contractor and not an employee or agent of the City for any purpose.
- 3.3 Provider is not entitled to, and expressly waives all claims to City benefits such as health and disability insurance, paid leave, and retirement.
- 3.4 This Agreement embodies the full and complete understanding of the parties respecting the subject matter hereof. It supersedes all prior agreements, negotiations, and representations between the parties, whether written or oral.
- 3.5 This Agreement may be amended only by written instrument executed with the same formalities as this Agreement.
- 3.6 The following laws of the State of Oregon are hereby incorporated by reference into this Agreement: ORS 279B.220, 279B.230 and 279B.235.
- 3.7 This Agreement shall be governed by the laws of the State of Oregon without regard to conflict of laws principles. Exclusive venue for litigation of any action arising under this Agreement shall be in the Circuit Court of the State of Oregon for Jackson County unless exclusive jurisdiction is in federal court, in which case exclusive venue shall be in the federal district court for the district of Oregon. Each party expressly waives any and all rights to maintain an action under this Agreement in any other venue, and expressly consents that, upon motion of the other party, any case may be dismissed or its venue transferred, as appropriate, so as to effectuate this choice of venue.
- 3.8 Provider shall defend, save, hold harmless and indemnify the City and its officers, employees and agents from and against any and all claims, suits, actions, losses, damages, liabilities, costs, and expenses of any nature resulting from, arising out of, or relating to the activities of Provider or its officers, employees, contractors, or agents under this Agreement.
- 3.9 Neither party to this Agreement shall hold the other responsible for damages or delay in performance caused by acts of God, strikes, lockouts, accidents, or other events beyond the control of the other or the other's officers, employees or agents.
- 3.10 If any provision of this Agreement is found by a court of competent jurisdiction to be unenforceable, such provision shall not affect the other provisions, but such unenforceable provision shall be deemed modified to the extent necessary to render it enforceable, preserving to the fullest extent permitted the intent of Provider and the City set forth in this Agreement.
- 3.11 Deliveries will be F.O.B destination. Provider shall pay all transportation and handling charges for the Goods. Provider is responsible and liable for loss or damage until final inspection and acceptance of the Goods by the City. Provider remains liable for latent defects, fraud, and warranties.
- 3.12 The City may inspect and test the Goods. The City may reject non-conforming Goods and require Provider to correct them without charge or deliver them at a reduced price, as negotiated. If Provider does not cure any defects within a reasonable time, the City may reject the Goods and cancel this Agreement in whole or in part. This paragraph does not affect or limit the City's rights, including its rights under the Uniform Commercial Code, ORS Chapter 72 (UCC).
- 3.13 Provider represents and warrants that the Goods are new, current, and fully warranted by the manufacturer. Delivered Goods will comply with SUPPORTING DOCUMENTS and be free from defects in labor, material and manufacture. Provider shall transfer all warranties to the City.

4. SUPPORTING DOCUMENTS

The following documents are, by this reference, expressly incorporated in this Agreement, and are collectively referred to in this Agreement as the "SUPPORTING DOCUMENTS:"

- The Provider's "*Proposal for Implementation of Ashland Forestlands Climate Change Adaptation Project*" document

5. REMEDIES

5.1 In the event Provider is in default of this Agreement, City may, at its option, pursue any or all of the remedies available to it under this Agreement and at law or in equity, including, but not limited to:

5.1.1 Termination of this Agreement;

5.1.2 Withholding all monies due for the Work that Provider has failed to deliver within any scheduled completion dates or any Work that have been delivered inadequately or defectively;

5.1.3 Initiation of an action or proceeding for damages, specific performance, or declaratory or injunctive relief;

5.1.4 These remedies are cumulative to the extent the remedies are not inconsistent, and City may pursue any remedy or remedies singly, collectively, successively or in any order whatsoever.

5.2 In no event shall City be liable to Provider for any expenses related to termination of this Agreement or for anticipated profits. If previous amounts paid to Provider exceed the amount due, Provider shall pay immediately any excess to City upon written demand provided.

6. TERM AND TERMINATION

6.1 Term

This Agreement shall be effective from the date of execution on behalf of the City as set forth below (the "Effective Date"), and shall continue in full force and effect until June 30th, 2025 unless sooner terminated as provided in Subsection 6.2.

6.2 Termination

6.2.1 The City and Provider may terminate this Agreement by mutual agreement at any time.

6.2.2 The City may, upon not less than thirty (30) days' prior written notice, terminate this Agreement for any reason deemed appropriate in its sole discretion.

6.2.3 Either party may terminate this Agreement, with cause, by not less than fourteen (14) days' prior written notice if the cause is not cured within that fourteen (14) day period after written notice. Such termination is in addition to and not in lieu of any other remedy at law or equity.

7. NOTICE

Whenever notice is required or permitted to be given under this Agreement, such notice shall be given in writing to the other party by personal delivery, by sending via a reputable commercial overnight courier, or by mailing using registered or certified United States mail, return receipt requested, postage prepaid, to the address set forth below:

If to the City:

City of Ashland – Fire Department
Attn: Chris Chambers, Forestry Officer
455 Siskiyou Boulevard
Ashland, Oregon 97520
Phone: (541) 482-2770

With a copy to:

City of Ashland – Legal Department
20 E. Main Street
Ashland, OR 97520
Phone: (541) 488-5350

If to Provider:

Lomakatsi Restoration Project
Attn: Marko Bey
645 Washington Street, Ashland, OR 97520
marko@lomakatsi.org
(541) 482-0208

8. WAIVER OF BREACH

One or more waivers or failures to object by either party to the other's breach of any provision, term, condition, or covenant contained in this Agreement shall not be construed as a waiver of any subsequent breach, whether or not of the same nature.

9. PROVIDER'S COMPLIANCE WITH TAX LAWS

9.1 Provider represents and warrants to the City that:

9.1.1 Provider shall, throughout the term of this Agreement, including any extensions hereof, comply with:

- (i) All tax laws of the State of Oregon, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318;
- (ii) Any tax provisions imposed by a political subdivision of the State of Oregon applicable to Provider; and
- (iii) Any rules, regulations, charter provisions, or ordinances that implement or enforce any of the foregoing tax laws or provisions.

9.1.2 Provider, for a period of no fewer than six (6) calendar years preceding the Effective Date of this Agreement, has faithfully complied with:

- (i) All tax laws of the State of Oregon, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318;
- (ii) Any tax provisions imposed by a political subdivision of the State of Oregon applicable to Provider; and
- (iii) Any rules, regulations, charter provisions, or ordinances that implement or enforce any of the foregoing tax laws or provisions.

9.2 Provider's failure to comply with the tax laws of the State of Oregon and all applicable tax laws of any political subdivision of the State of Oregon shall constitute a material breach of this Agreement. Further, any violation of Provider's warranty, as set forth in this Article 9, shall constitute a material breach of this Agreement. Any material breach of this Agreement shall entitle the City to terminate this Agreement and to seek damages and any other relief available under this Agreement, at law, or in equity.

IN WITNESS WHEREOF the parties have caused this Agreement to be signed in their respective names by their duly authorized representatives as of the dates set forth below.

CITY OF ASHLAND:

By: _____
City Manager

Printed Name

Date

Lomakatsi Restoration Project (PROVIDER):

By: _____
Signature

Printed Name

Title

Date

Purchase Order No. _____

(**W-9** is to be submitted with this signed Agreement)

APPROVED AS TO FORM:

Assistant City Attorney

Date

**SPECIAL PROCUREMENT
REQUEST FOR APPROVAL****To:** City Council, Local Contract Review Board**From:** Chris Chambers, Fire Department**Date:** October 30, 2023**Subject:** REQUEST FOR APPROVAL OF A SPECIAL PROCUREMENT

In accordance with ORS279B.085, this request for approval of a Special Procurement is being presented to the City Council for approval. This written request for approval describes the proposed contracting procedure and the goods or services or the class of goods or services to be acquired through the special procurement and the circumstances that justify the use of a special procurement under the standards set forth ORS 279B.085(4).

1. **Requesting Department Name:** Ashland Fire & Rescue
2. **Department Contact Name:** Chris Chambers, Forestry Officer
3. **Type of Request:** Class Special Procurement X Contract-specific Special Procurement
4. **Time Period Requested:** From 11/07/23 To: 6/30/2025
5. **Total Estimated Cost:** Not to exceed \$250,000
6. **Short title of the Procurement:** Ashland Forestlands Climate Adaptation Project

Supplies and/or Services or class of Supplies and/or Services to be acquired:

The services will include project boundary layout, tree marking, cruising, technical support, project monitoring and data collection, inspection and reporting, and accounting. . Lomakatsi will provide the workforce necessary to accomplish these tasks using experienced, trained personnel.

Background and Proposed Contracting Procedure: Provide a description of what has been done in the past and the proposed procedure. The Agency may, but is not required to, also include the following types of documents: Notice/Advertising, Solicitation(s), Bid/Proposal Forms(s), Contract Form(s), and any other documents or forms to be used in the proposed contracting procedure. Attach additional sheets as needed.

Background: The City has contracted with Lomakatsi Restoration as a partner in the Ashland Forest Resiliency Stewardship Project under a Master Agreement starting in 2013 and lasting until 2019. During that time the City Council approved two contracts via Special Procurement.

8. Justification for use of Special Procurement: Describe the circumstances that justify the use of a Special Procurement. Attach relevant documentation.

Lomakatsi Restoration Project has been a trusted non-profit partner of the City of Ashland through 13 years of the Ashland Forest Resiliency Stewardship Project and various grant programs before AFR. Lomakatsi's AFR project experience is specific to the Ashland Watershed, a diverse and challenging setting to conduct forestry operations. Given the skills and tasks now needed by the City for work on its own forestlands, Lomakatsi Restoration is uniquely qualified to meet the City's needs using their years of work experience in the same landscape as a partner to the City of Ashland. The City lacks the internal capacity to field a workforce that would accomplish the project outcomes outlined by the Ashland Forest Plan and as spelled out in the City Council's goals for watershed and community wildfire safety.

9. Findings to Satisfy the Required Standards: This proposed special procurement:

 X (a) will be unlikely to encourage favoritism in the awarding of public contracts or to substantially diminish competition for public contracts because:

Regionally, there are no other workforce options who provide ecologically sensitive skill sets and expertise that Lomakatsi has accumulated over decades of work with local governments, federal agencies, tribes, and water districts. As a non-profit, Lomakatsi is a known community entity that has developed community trust that will benefit the City in carrying out challenging work on our publicly owned forests.

(Please provide specific information that demonstrates how the proposed Special Procurement meets this requirement.); **and**

 X (b)(i) will result in substantial cost savings to the contracting agency or to the public because:

As mentioned above, Lomakatsi Restoration, as a non-profit, will charge the City actual operating costs plus an accepted federal overhead rate.

(Please provide the total estimate cost savings to be gained and the rationale for determining the cost savings); **or**

 X (b)(ii) will otherwise substantially promote the public interest in a manner that could not practicably be realized by complying with the requirements of ORS 279B.055, 279B.060, 279B.065, or 279B.070, or any rules adopted there under because:

Lomakatsi's experience in the Ashland Watershed has allowed them to accumulate site-specific knowledge of local ecology, public expectations, and tested methods of implementation that have yielded excellent outcomes on over 7,000 acres of previous work. With nearly three decades of community-based forestry on municipal lands, the public has an expectation of quality, ecologically informed work. Lomakatsi, as a partner in the AFR project since 2010, understands the community, our history of high-quality work, and the expectations to continue with the same quality of work. This is unique and highly valued by Ashland's citizens.

(Please provide specific information that demonstrates how the proposed Special Procurement meets this requirement.)

Public Notice:

Pursuant to ORS 279B.085(5) and OAR 137-047-0285(2), a Contracting Agency shall give public notice of the Contract Review Authority's approval of a Special Procurement in the same manner as a

public notice of competitive sealed Bids under ORS 279B.055(4) and OAR 137-047-0300. The public notice shall describe the Goods or Services or class of Goods or Services to be acquired through the Special Procurement and shall give such public notice of the approval of a Special Procurement at least seven (7) Days before Award of the Contract.

After the Special Procurement has been approved by the City Council, the following public notice will be posted on the City's website to allow for the seven (7) day protest period.

Date Public Notice first appeared on www.ashland.or.us –November 8th, 2023

PUBLIC NOTICE

Approval of a Special Procurement

First date of publication: November 8th, 2023

A request for approval of a Special Procurement was presented to and approved by the City Council, acting as the Local Contract Review Board, on April 5th, 2016.

This Special Procurement is a "Contract- specific Special Procurement". The proposed contracting procedure is direct award to Lomakatsi Restoration Project for site specific forestry work on land owned by the citizens of Ashland. Lomakatsi has unique experience as a partner in the Ashland Forest Resiliency project and has completed over 7,000 acres of similar work in the Ashland Watershed in conjunction with the Ashland citizenry and City staff.

It has been determined based on written findings that the Special Procurement will be unlikely to encourage favoritism in the awarding of public contracts or to substantially diminish competition for public contracts, and result in substantial cost savings or substantially promote the public interest in a manner that could not be realized by complying with the requirements that are applicable in ORS 279B.055, 279B.060, 279B.065, or 279B.070.

An affected person may protest the request for approval of a Special Procurement in accordance with ORS 279B.400 and OAR 137-047-0300. A written protest shall be delivered to the following address: City of Ashland, Kari Olson, Purchasing Representative, 90 N. Mountain, Ashland, OR 97520. The seven (7) day protest period will expire at 5:00pm on November 15th, 2023.

This public notice is being published on the City's Internet World Wide Web site at least seven days prior to the award of a public contract resulting from this request for approval of a Special Procurement.

Memo

DATE: October 30, 2023

TO: City Council

FROM: Chris Chambers, Forestry Officer/Ashland Fire & Rescue

RE: Ashland Forest Adaptation Project: Lomakatsi Restoration Project contract

The Ashland Municipal Code requires additional justification for any Special Procurement over \$350,000. Per ORS 279B.036, *Determination of feasibility of procurement*, which in first part states that “a contracting agency may proceed with a procurement if the contracting agency reasonably determines in writing that using the contracting agency’s own personnel or resources to perform the services that the contracting agency intends to procure is not feasible.”

A cost analysis is unnecessary if the contracting agency finds it “lacks the specialized capabilities, experience or technical or other expertise necessary to perform the services.” ORS 279B.036 (1)(a). Ashland Fire & Rescue (AF&R) must still “compare [AF&R’s] capability, experience or expertise in the field most closely involved in performing the services with a potential contractor’s capability, experience or expertise in the same or a similar field.” *Id.*

Staff analysis: Ashland Fire & Rescue’s internal expertise and workforce capacity does not fit the need for the identified work either by skills possessed or capability to perform the identified tasks. The vast majority of AF&R’s workforce are firefighter/paramedics who have little technical forestry expertise or training that would lend to accomplishment of the pertinent outcomes in Ashland’s forestlands and watershed. In addition, the AF&R workforce is necessarily tied to emergency response duties and cannot be out of the City where response time would be reduced, which would endanger public safety. Due to these factors, using our own personnel is not feasible.





Lomakatsi Restoration Project

Restoring Ecosystems, Sustaining Communities

645 Washington Street, Ashland, OR, 97520

(541) 488-0208 | FAX (541) 488-4909

www.lomakatsi.org

Special Funding Request to City of Ashland

October 30, 2023

To: Chris Chambers, Forest Officer, Ashland Fire & Rescue

From: Marko Bey, Executive Director, Lomakatsi Restoration Project

RE: Proposal for Implementation of *Ashland Forestlands Climate Change Adaptation Project*

Chris,

Please share this proposal prepared for the Ashland City Council by Lomakatsi Restoration Project (Lomakatsi) to provide technical support services for forest health treatments on City forestlands as part of the Ashland Forestlands Climate Change Adaptation Project (AFCCAP) with funding from the City of Ashland. Thank you for your time and consideration.

Lomakatsi Restoration Project Role in AFCCAP Stewardship Project Partnership

Lomakatsi provides expertise and capacity in project development, planning, management, fine-scale ecological forestry treatment design for commercial thinning activities, monitoring, and implementation for ecosystem restoration projects. Lomakatsi employs a highly specialized local technical team of foresters, ecosystem management technicians, forest ecologists, and forestry operations specialists trained specifically to implement ecological prescriptions while working in complex social settings.

Lomakatsi has been a partner of the City of Ashland (COA) for over 25 years on various forest and riparian restoration and fuel hazard reduction projects as part of multiple COA programs and initiatives. Since 2010, Lomakatsi has served as one of the principal partners on the nationally recognized Ashland Forest Resiliency Stewardship Project, working with the COA, U.S. Forest Service, and The Nature Conservancy. Lomakatsi now proposes to use COA funds to support forest health activities on City forestlands to address the impacts of flatheaded fir borers and Douglas fir mortality, and the associated impacts to soils and fire risk for the community of Ashland and ecosystem services. Working under the direction of the COA Forestry Division, Lomakatsi will provide technical capacity in project planning, conduct ecological monitoring, and assist with quality control during commercial thinning contract operations.

About Lomakatsi Restoration Project

Lomakatsi Restoration Project is a nonprofit, grassroots organization that develops and implements forest and watershed restoration projects in Oregon and northern California (www.lomakatsi.org). Lomakatsi has a proven record of success implementing restoration projects for the past 28 years across thousands of acres of forests and miles of streams. Lomakatsi provides expertise and capacity in project development, planning, management, fine-scale ecological treatment design, monitoring, and implementation for ecosystem

restoration projects. Lomakatsi coordinates closely with multiple funding partners and manages a diverse workforce in complex social settings supported by critical community outreach.

Scope of work, strategic location, and cost

Lomakatsi is proposing to accomplish commercial ecological forestry presale preparations for future salvage treatments that the COA will contract to timber operators and forestry service providers. End results of the presale work will include the removal of trees that are recently dead or are dying due to drought and beetle infestation. It is expected that the schedule of payments for the proposed scope of work will be split between the project-type cost scenarios described below, with flexibility to adjust the proportions to scenarios as dictated by the AFCCAP. The AFCCAP partnership has agreed on the need for additional COA funding to support the accomplishment of these project type acres.

1. Pre-sale Administration (\$125,000)

Lomakatsi will conduct pre-sale administration tasks to prepare the project area for implementation. This includes field activities to support ecological timber removal operations and prepare pertinent data to contractors and log buyers.

- Boundary Marking
- Tree Marking
- Cruising
- Technical Support (Marking guides)

2. Sale Administration (\$50,000)

During implementation, Lomakatsi will ensure that standards and specifications are met by the contractor and communicated appropriately to AFCCAP staff.

- Implementation Monitoring:
- Field Inspection and Reporting
- Log Load Accounting

3. Post-Sale (\$25,000)

Conditions post-treatment will be monitored to evaluate the effectiveness of treatment activities and determine whether goals and objectives were met and to what degree.

- Effectiveness monitoring and reporting

Costs for above tasks and others as directed as part of AFCCAP **are not to exceed \$250,000.**

Thank you for your consideration of this special procurement request. I welcome you to reach out with any questions or concerns.

Marko Bey

Executive Director

Lomakatsi Restoration Project

645 Washington St., Ashland, OR, 97520

www.lomakatsi.org

Office (541) 488-0208

Trees on the Edge

Understanding Douglas-fir Decline and Mortality in Southwest Oregon

Max Bennett and Christopher Adlam

CONTENTS

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Douglas-fir](#)

[Causes of mortality](#)

[Responding to the
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Figure 1. Dead Douglas-fir in the Applegate Valley of southwest Oregon in spring 2022.

Credit: Chris Adlam, © Oregon State University

The importance of Douglas-fir

Douglas-fir is the dominant tree species in many low- to mid-elevation forests across southwest Oregon. Douglas-fir trees provide vital wildlife habitat, are an important source of timber, and capture and store carbon. However, a rising number of Douglas-firs in southwest Oregon are dying. People want to know: Can this dieback be reduced or prevented? What are the long-term prospects for Douglas-fir in this region? How do we manage the dead trees? What about the risk of wildfires? This publication answers frequently asked questions about why and where Douglas-firs are dying and what actions we can take.

How serious is Douglas-fir decline, and how does it compare to historical trends?

Douglas-fir mortality in Jackson, Josephine and Douglas counties is a serious and growing issue. Douglas-fir dieback has increased dramatically since 2015, with an estimated 260,000 trees killed and nearly 150,000 acres affected from 2016 to 2019 (Figures 1–3). These numbers are based on annual aerial survey data collected by the Oregon Department of Forestry and the U.S. Forest Service and apply in cases where the survey attributed Douglas-fir dieback to an insect called the flatheaded fir borer (see “Causes of Douglas-fir decline and mortality”).



Figure 2. Douglas-fir mortality in Ferris Gulch in the Applegate Valley, 2016.

Credit: Bill Schaupp, U.S. Forest Service



Figure 3. A southwest Oregon Douglas-fir mortality patch seen from above.

Credit: Chris Adlam, © Oregon State University

Causes of Douglas-fir decline and mortality

This publication focuses on Douglas-fir decline and mortality in southwest Oregon stemming from the interactions of harsh site conditions, hotter drought and insects (primarily the flatheaded fir borer). These three factors together are responsible for most of the recent increase in Douglas-fir mortality in southwest Oregon. Aerial and ground surveys found that the combination of these factors killed trees on primarily hot, dry, relatively low- to mid-elevation sites in the interior Rogue and Umpqua valleys. However, Douglas-fir mortality can also result from many other causes. These include root diseases, excessive shading in dense stands, dwarf mistletoe infection and infestations of the Douglas-fir beetle following blowdown events or wildfire, or damage from wildfire alone. While we focus on southwest Oregon, the combination of drought and flatheaded fir borer attack has resulted in Douglas-fir mortality in other parts of the state, such as the Willamette Valley.

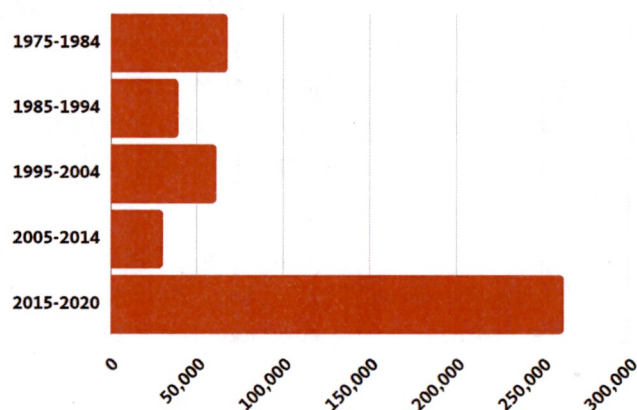


Figure 4A. Trees killed in southwest Oregon by the flatheaded fir borer.

Credit: © Oregon State University

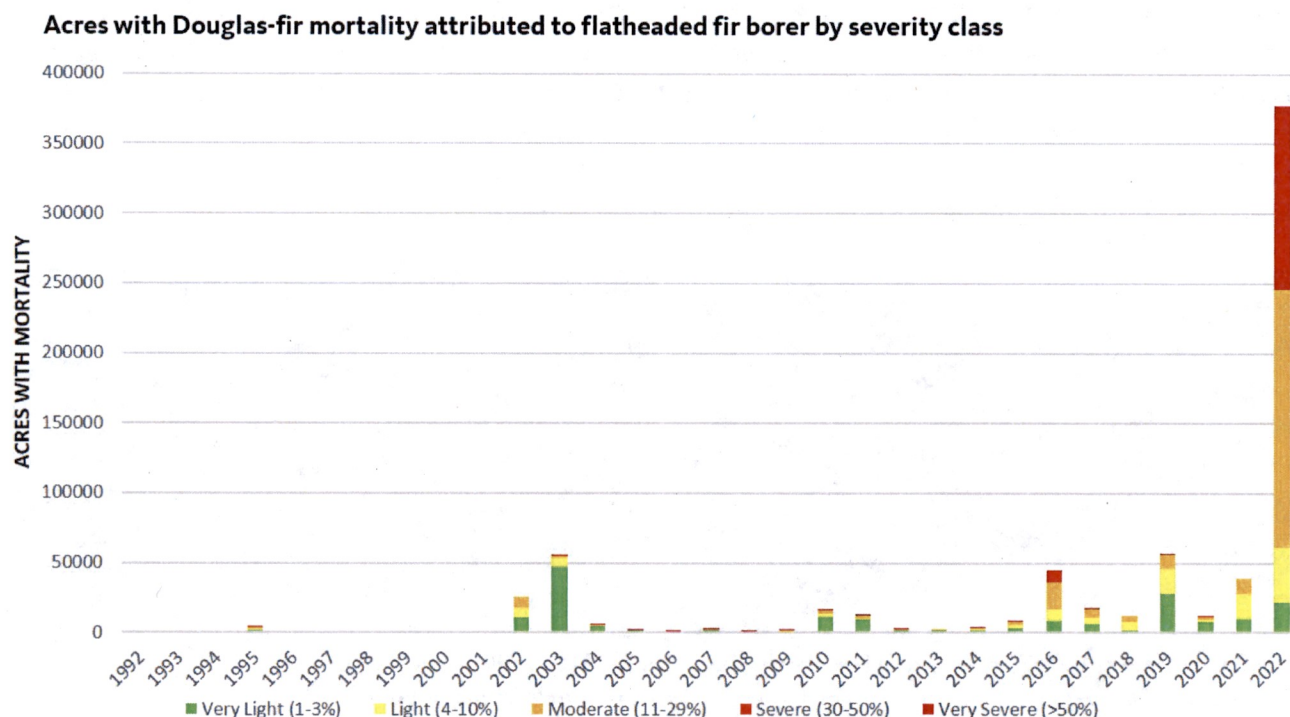


Figure 4B. Acres with Douglas-fir mortality attributed to flatheaded fir borer by severity class. The estimate for the number of acres affected is based on aerial sketchmaps that show the general areas Douglas-fir dieback has occurred. It does not necessarily mean that all or even most of the Douglas-fir trees in those areas have been killed. Instead, the estimate represents a mosaic of trees that were recently killed and living trees. Aerial survey data are most appropriate for monitoring damage and mortality trends at a watershed scale. They do not provide precise estimates of the number of trees killed or the area affected.

Credit: Laura Lowry, U.S. Forest Service

Before 2015, Douglas-fir mortality in the region tended to increase for a year or two during or immediately after drought. It would then subside. But since 2015, mortality levels have remained high. Based on aerial survey data, more trees died in the four-year period from 2015 to 2019 than in the previous four decades (Figure 5).

More recent aerial survey data suggest that mortality levels are increasing. Likewise, 2021 data from field plots in four warm, dry sites in southwestern Oregon indicated that 20% or more of the Douglas-fir basal area in those areas had died in the previous five to 10 years. Basal area is the cross-sectional area of trees, measured in square feet per acre. It is a commonly used measure of stand density.

The most severe dieback has occurred in the Applegate Valley and the fringes of the Bear Creek Valley. But the dieback is widely distributed from northern Douglas County to Northern California, primarily on warm, dry, low- to mid-elevation sites (Figure 5).

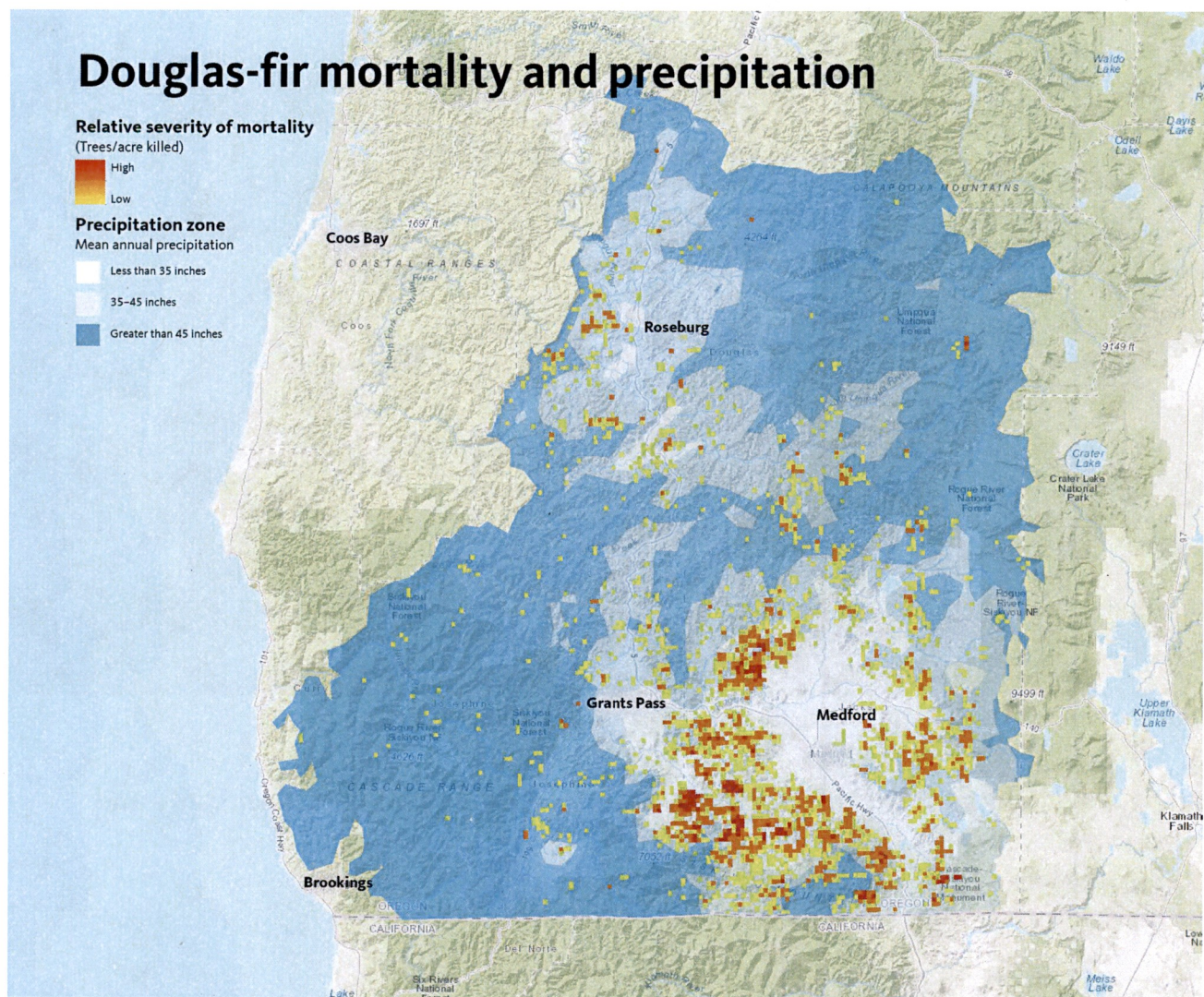


Figure 5. In southwest Oregon, the majority of Douglas-fir mortality attributed to the flatheaded fir borer has been on hot, dry sites in the Rogue and Umpqua valleys.

Credit: © Oregon State University. Data: ODF/USFS Aerial Detection Survey, PRISM



Figure 6. Douglas-fir mortality contributes to heavy fuel loads in this mortality patch.

Credit: Max Bennett, © Oregon State University

What are the impacts of this mortality event — ecologically, economically and culturally?

Dead and dying trees are essential components of a healthy forest ecosystem. But when the scale and amount of mortality become excessive, serious ecological impacts may result. These include:

- The buildup of high fuel loads that increases the risk of high-severity wildfires (Figure 6).
- The loss of large live trees that are valuable for wildlife habitat, fire resistance and healthy watersheds.
- Reduced carbon storage.
- Damage to desirable trees from falling snags (standing dead trees).

Potential social and economic impacts of Douglas-fir mortality include:

- The loss of current and future timber production.
- The cost of removing hazard trees.
- The cost of treating Douglas-fir mortality patches to reduce hazardous fuel loads.
- Impacts on infrastructure such as roads, recreation areas and trails.
- Safety concerns from falling snags.
- Increased difficulty of wildfire suppression and hazard to firefighters.
- The negative impact of a declining forest on aesthetics and recreation.

For the many landowners who have been affected, Douglas-fir mortality often represents a loss of tree cover, shade and aesthetic value. Perhaps a cherished forest is changing in undesirable ways. For owners who manage their

woodlands for timber production, the dead trees represent a loss of future income. Increased fuel loads make remaining trees more vulnerable to wildfires and can substantially increase the risk of home loss.

Dead trees are a hazard if they threaten to fall on houses, outbuildings, fences and roads. Removing dead trees or cutting, piling and burning heavy slash loads can cost more than \$5,000 per acre in some cases.

Whether for economic, ecological or other reasons, seeing the forest decline is also a source of grief for many landowners who are attached to the places they call home. These landowners want to know how to save remaining trees and preserve forest health.

How does widespread tree mortality affect wildfire hazard?

Consider the effects of Douglas-fir mortality on wildfire hazard in the larger context of wildfire patterns in southwest Oregon. For millennia, wildfire played a key role as a natural disturbance agent, shaping vegetation patterns across the landscape. Historically, frequent fires of low to mixed severity interacted with a number of factors to create a diverse patchwork of forests. Many of these forests were more open than the forests of today. Frequent fire had other effects, including:

- Cultivating large, open-grown trees.
- Hindering extensive regeneration of fire-intolerant species.
- Promoting fire-tolerant species and understory diversity.
- Maintaining gaps in the tree canopy.
- And decreasing the compounding effects of insects and diseases.

The absence of frequent low- and mixed-severity fires and the removal of large, fire-resistant trees have altered vegetation patterns. Currently, many dry forest stands are overly dense. Surface, ladder and canopy fuels have accumulated well beyond historic levels. This increases the potential for larger-scale, stand-replacing fires.

The effects of extensive tree mortality are complex and vary over time. In general, trees that have died recently and have red foliage (the “red phase”) are extremely flammable. Crown fire potential and ember production are high during this stage, which may last from a few months to a couple of years.

When the needles fall off (the “gray phase”), crown fire potential declines and fine surface fuels (twigs, small branches and understory vegetation) accumulate. This phase may last for a decade or so.

As the dead trees start to decay and fall apart (the “old phase”) and new shrubs and trees grow back, surface fuel loading increases dramatically. This phase lasts for decades. During this time, fire intensity, crown fire potential and ember production all increase, and fires become more difficult to suppress.

In some areas of dead Douglas-fir, many large logs litter the ground, while shrubs, hardwoods and grasses respond to higher light levels and regenerate. In a wildfire situation, this combination of factors can lead to extreme fire behavior with high flame lengths and prolonged soil heating over large areas. The long duration and magnitude of soil heating may also result in significant losses of soil organic matter. Roots and soil biota sustain damage, and the erosion potential increases.

High-severity burns may also hinder regeneration of new trees — particularly conifers — and result in the loss or top-kill of any trees that remain. Extensive areas of high-severity fire suffer loss of forest cover, heavy smoke

production, loss of timber, increased potential for high-severity reburns, and increased sedimentation and peak flows. This is especially true in lower-elevation forests where high-severity fire was historically uncommon and species are adapted to frequent, low-severity fire.

Potential implications of Douglas-fir mortality for fire management and firefighter safety include:

- Increased flame length and long-range spotting.
- Increased fireline construction time.
- A reduction in effective safety zones.
- Risks to firefighters from falling snags.
- Challenges for predicting fire behavior.
- And increased cost and duration of wildfires.

Locations that may have previously offered strategic opportunities for firefighters to stop the spread of fire may no longer be suitable due to extreme fire behavior and safety hazards.

Are forests likely to recover, or is the loss of forest cover permanent?

In areas with heavy Douglas-fir mortality, mature pines, madrones and oaks may remain viable, providing some continued canopy cover. In areas where Douglas-fir has become more prevalent, these other species may benefit from the reduced competition. Where canopy cover is severely reduced, grasses and shrubs will typically dominate initially. But new trees will often regenerate in the understory. Madrones regrow rapidly in the newly available sunlight. Pines, oaks, and Douglas-fir seedlings and saplings may also be present.

Douglas-fir may be able to survive as small trees, perhaps sheltered by other vegetation. Small trees require less water than mature trees. That doesn't mean they will be able to grow into and survive as dominant canopy trees, especially on harsher sites. These newly recruited Douglas-firs are likely to die once they reach a size at which water is limited. Without repeated high-severity fires or timber harvest, a forest will eventually reoccupy the site. But the new forest will be composed of different species, such as a pine-oak woodland or savanna.

Fuel loading in many Douglas-fir "snag patches" is high, or will be as dead trees fall to the ground and understory species respond to increased light. If wildfire occurs in these patches under hot and dry conditions, it will likely have severe effects. Soil will lose organic matter and seed due to the heat generated from burning large fuels. Shrubs such as manzanita and ceanothus will frequently return to the site, but tree regeneration may require decades. In extreme cases, the site may be converted to nonforest vegetation for long periods of time.

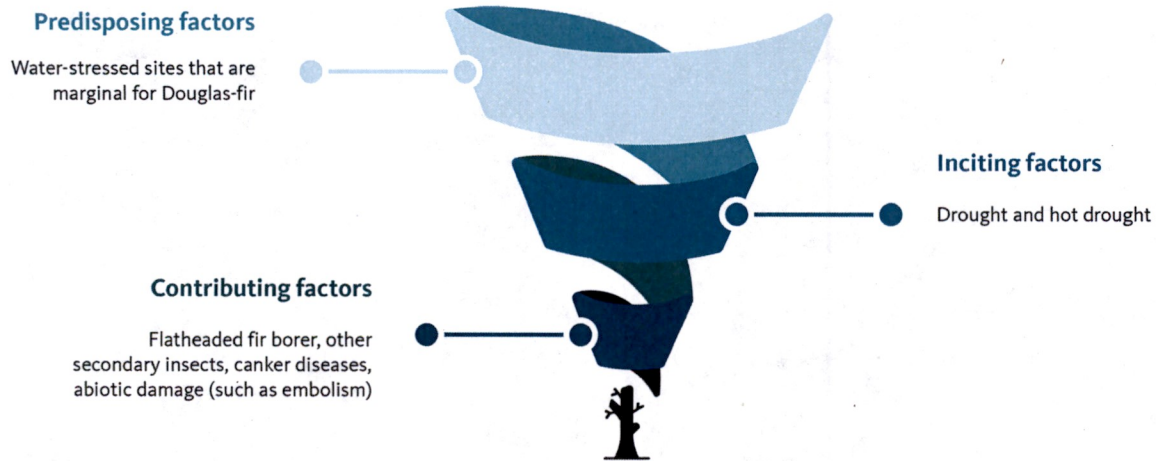


Figure 7. The Douglas-fir decline spiral: A combination of predisposing, inciting and contributing factors leads to a progressive loss of tree vigor and eventual death of the tree.

Credit: © Oregon State University

Causes of mortality

What is causing Douglas-firs to die?

In 1991, plant pathologist Paul Manion introduced the concept of a “disease decline spiral.” In such a spiral, a combination of predisposing, inciting and contributing factors leads to a progressive loss of vigor and tree death.

Manion’s framework is helpful for understanding the recent increase in Douglas-fir mortality in southwest Oregon. In this situation, Douglas-fir trees growing on marginal, water-stressed sites (predisposing factors) are more vulnerable to episodic drought stress (inciting factors) that impairs their physiological functioning. This makes them more susceptible to the flatheaded fir borer and other insect pests and diseases (contributing factors), resulting in tree decline and death (Figure 7). Although Douglas-fir dieback may appear to be rapid, affected trees have often declined over many months and even years.

The most important insect contributing to the uptick in mortality is a native beetle called the flatheaded fir borer. This insect attacks and often kills Douglas-fir trees that are under severe stress, often from drought. Several secondary beetles and canker fungi frequently contribute to branch dieback and top-kill in drought-stressed Douglas-fir. But these insects seldom kill trees on their own (see “Insects and diseases involved in Douglas-fir decline in southwest Oregon”).

When it is very hot and dry, Douglas-fir also can suffer internal physiological damage that makes trees more vulnerable to pests and pathogens. This damage may also cause branch and top dieback and even tree death (see “Hotter drought and tree health”).

Evidence shows that Douglas-fir has expanded into many valley and lower-elevation sites during the last century. Formerly, many of these sites were ponderosa pine forests or oak woodlands maintained by frequent, low-severity fires. Excluding fire has led to an increase in Douglas-fir. Douglas-fir was present, but not in the abundance we see today. Climate also plays a role: These sites were always near the lower limit of rainfall and the upper limit of temperature where Douglas-fir could grow (Figure 8). Douglas-fir was able to survive and reproduce on these marginal sites in the climate of the 20th century. But it is having a harder time in the hotter climate of the 21st.



Figure 8. Douglas-fir has increased in abundance and has encroached on oak and pine sites following fire exclusion. Note the abundant Douglas-fir (aged 50–70) surrounding older black oak (estimated age 200+).

Credit: Max Bennett, © Oregon State University

Insects and diseases involved in Douglas-fir decline in southwest Oregon

Common insect pests and diseases involved in drought-related Douglas-fir decline and mortality in southwest Oregon. Insects and diseases not directly related to drought stress can also damage and kill Douglas-fir.

- Flatheaded fir borer (https://www.oregon.gov/odf/Documents/forestbenefits/FFB_2016.pdf)
- Douglas-fir beetle (<https://www.oregon.gov/odf/Documents/forestbenefits/douglas-fir-beetle.pdf>)
- Douglas-fir pole and engraver beetles
(https://www.oregon.gov/odf/Documents/forestbenefits/DF%20Pole%20and%20Engraver_2017.pdf)
- Douglas-fir twig weevil (https://www.oregon.gov/odf/Documents/forestbenefits/Weevils_2017.pdf)
- Phomopsis and other canker diseases (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_025890.pdf)
- Woodborers (<https://www.oregon.gov/odf/Documents/forestbenefits/Woodboringbeetles.pdf>)

What are signs and symptoms of Douglas-fir decline and death?

Crown decline

Declining Douglas-fir trees will typically show signs of crown decline. This can take many forms, including:

- Death of individual branch tips or entire branches. Branches first turn red and then gray as the dead needles fall.
- Death of the top of the tree.
- A general thinning or loss of foliage throughout the crown. The crown appears sparse, especially compared to nearby healthier trees or compared to the same tree previously.
- A yellowing of the foliage, known as chlorosis.
- A stress cone crop, characterized by numerous cones near the top of the tree that are much smaller than average.

These crown symptoms are nonspecific; they are typically seen in cases of drought and decline related to flatheaded fir borer infestation. But other agents, such as root disease, can also cause these symptoms. Progressive and severe crown decline usually results in tree death.

Pitch droplets or 'jewels' within bark crevices

The presence of fresh or dried pitch on the tree trunk is not necessarily a sign of tree decline or imminent death. As foresters say, "pitch happens." But abundant small pitch droplets in the bark crevices of Douglas-fir trees (Figure 9) — especially trees with symptoms of crown decline or those in areas of recent Douglas-fir mortality — are thought to be symptoms of flatheaded fir borer infestation. Douglas-fir in areas of ongoing mortality with abundant pitch droplets and declining crowns are likely to die within one to two years.

Woodpecker flaking or 'shaving' of outer bark

Bark flakes off as woodpeckers hunt for flatheaded fir borer larvae. Sometimes woodpeckers shave only the outer bark. Other times they remove large patches, exposing the wood. For a time, the tree's foliage may remain green. But once you see bark flaking, tree mortality is almost certain (Figure 10).



Figure 9. Pitch droplets or "jewels" in bark crevices are a symptom of flatheaded fir borer attack.

Credit: Max Bennett, © Oregon State University



Figure 10A. Woodpeckers shave bark from infested trees.

Credit: Max Bennett, © Oregon State University



Figure 10B. Flaking bark is a sure sign of flatheaded fir borers.

Credit: Max Bennett, © Oregon State University



Figure 10C. Infested trees are likely to die.

Credit: Max Bennett, © Oregon State University

Are trees dying everywhere, or are some places more at risk?

In southwest Oregon, Douglas-fir is declining in a wide range of locations. But decline is most common and severe on hot, dry sites on the margins of the Rogue, Applegate and Umpqua valleys. Historically, 90% of the mortality has occurred on only 10% of the forested area. In particular, areas with less than 35 inches of average annual rainfall and under 3,500 feet in elevation are at highest risk. Locations with more than 60 inches of average annual rainfall have suffered little mortality (Figure 11). However, recent observations suggest that Douglas-fir mortality in southwest Oregon is both intensifying and spreading.

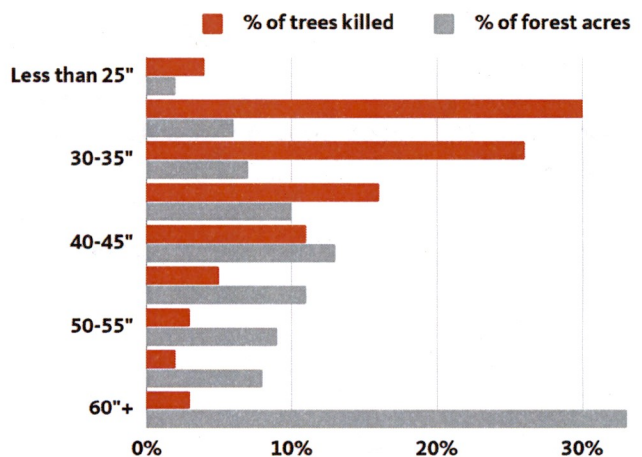


Figure 11. Percentage of trees killed by the flatheaded fir borer (1974–2019) by percentage of forest area and precipitation zone.

Credit: © Oregon State University



Figure 12. Steep, southwest-facing slopes tend to be hot and dry and at higher risk for Douglas-fir mortality.

Credit: Max Bennett, © Oregon State University

At a more local scale, Douglas-fir mortality tends to be variable and patchy. In some areas, such as Ferris Gulch in the Applegate Valley, most of the Douglas-fir trees across entire hillsides have died. In other areas, it's a few trees here and there. While tree death is sometimes random, evidence suggests that certain locations are at higher risk. These include:

- Steep south- and west-facing slopes, where afternoon temperatures are the highest (Figure 12).
- Upper slopes and ridges, where temperatures trend higher and soil stores less moisture than soil on lower slopes.
- Within and on the fringes of Oregon white oak woodlands, where soils tend to be shallow and high in clay. This type of soil restricts water availability for Douglas-fir (Figure 13).
- On the edges of forested stands, which tend to be hotter and drier and thus more stressful for Douglas-fir trees (Figure 14).
- Areas that are within a few hundred feet of other dead and dying Douglas-fir.

Until recently, Douglas-fir trees growing on north-facing slopes, in riparian areas and in other sheltered locations have generally experienced less mortality. Temperatures are cooler and soils are deeper in these areas. However, as hot drought has intensified, and as flatheaded fir borer populations have built up, mortality has increased, even on these more favorable sites. What was initially confined to a few trees on the harshest sites has expanded to trees on more favorable sites, including on north slopes and in riparian zones.



Figure 13. Oregon white oak trees frequently indicate droughty soils and are often associated with Douglas-fir mortality. Note the large number of standing dead Douglas-fir trees in this mortality patch.

Credit: Max Bennett, © Oregon State University



Figure 14. Douglas-fir mortality is often higher on stand edges.

Credit: Max Bennett, © Oregon State University

Most of the Douglas-fir mortality has occurred on rural residential properties, small private woodlands and Bureau of Land Management tracts near the Rogue Valley. These sites tend to be hot, dry and relatively low in elevation. To date, fewer Douglas-fir trees have died on more productive National Forest lands and private, industrial forestlands. These lands are typically at higher elevations or in areas of higher rainfall.

In areas where Douglas-fir is dying, are certain trees more vulnerable than others?

Douglas-fir trees of all sizes and ages are affected, but the flatheaded fir borer is more often found in trees over 12 inches in diameter at chest height and more than 50 years in age. The insect is especially abundant in trees ranging from 80 to 140 years old. Less vigorous trees are generally more susceptible. Symptoms of low-vigor trees include sparse or thinning foliage, yellow-green (not dark green) or red foliage, dead branches and dead tops.

The U.S. Forest Service's Forest Health Protection program and OSU Extension are currently monitoring symptomatic trees in several locations in southwest Oregon to help develop better models that predict whether and when individual Douglas-fir trees will survive.

While stressed trees are usually more vulnerable, the flatheaded fir borer has killed many Douglas-fir with healthy-appearing crowns. While these trees may have been more vigorous in the past, their short leaders and narrower growth rings indicate significant growth declines in the last five years. More research is needed to confirm these observations. The increased mortality of relatively vigorous Douglas-fir trees may also reflect high local beetle populations that are capable of overwhelming the defenses of most nearby trees.

Hotter drought and tree health

Drought is typically thought of as a period of lower-than-normal rainfall that results in water supply problems. But from a tree's perspective, moisture stress can also result from higher air temperatures alone.

As the air warms, it can hold more water vapor, resulting in an increase in the vapor pressure deficit. VPD is the difference between the amount of moisture in the air and how much moisture the air can hold when it is saturated. As VPD increases, the air pulls more water out of trees, resulting in transpiration rates and water loss.

When precipitation is lower than normal and temperatures are higher than normal, we get "hotter drought." In this condition, the tree faces an increased demand for water at the same time water becomes less available. Effects of hotter drought include:

- Trees close stomata (the tiny holes in leaves) to reduce water loss, resulting in reduced photosynthesis and a cut in production of food for growth and repair.
- Trees cut production of defensive compounds, which makes them more vulnerable to insects and pathogens.
- Tree respiration (metabolism) increases, depleting energy reserves.
- Air bubbles block water-conducting tubes inside the tree known as xylem. This results in embolisms that impair water transport. Branches die back and some trees die.

Since 2013, southwest Oregon has experienced a period of hotter drought, with periods of below-normal rainfall and consistently higher-than-average summer temperatures. Compared to droughts over the last 40 years, the period since 2013 has not been extraordinarily dry, but summers have been notably hot. While there

has been no meaningful trend over the last several decades in total annual precipitation, there is a clear trend of increasing summer temperatures (figures 15A and 15B).

Average annual precipitation, 1979–2021: 23.9 inches

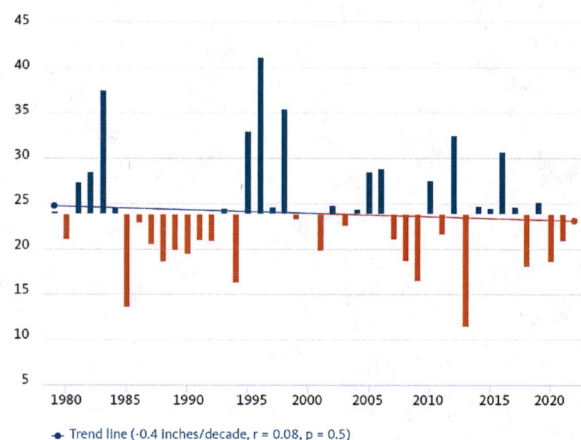


Figure 15A. Annual precipitation, 1979–2021, Applegate Valley, Oregon.

[Credit: Climatetoolbox.org](https://climatetoolbox.org)

June–August mean temperature (1979–2022): 68.6 °F

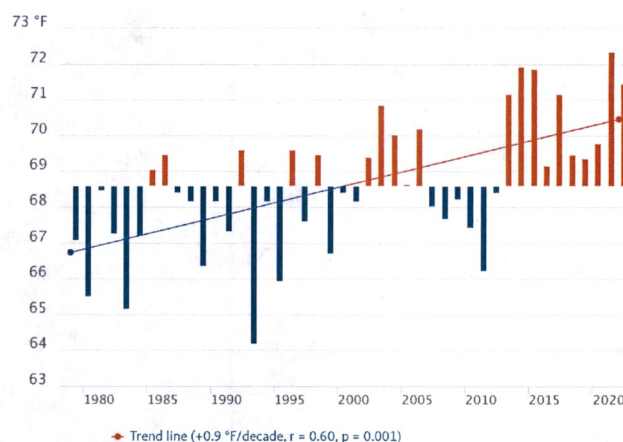


Figure 15B. Mean June–August temperature, 1979–2021, Applegate Valley, Oregon.

[Credit: Climatetoolbox.org](https://climatetoolbox.org)

Responding to the threat

What can we do to prevent or reduce Douglas-fir mortality?

Little or nothing can be done to save individual Douglas-fir trees that are severely declining or dying due to drought stress, insects and disease. But some maintenance practices can help prevent decline in landscape trees that are reasonably healthy. These include:

- Avoiding mechanical damage and soil compaction around tree root zones. Keep roots clear of vehicles or grazing animals, especially during the wet season.
- Irrigating during dry weather. Apply water slowly over many hours so it penetrates to tree roots. Or, use drip irrigation.
- Applying mulch to landscape trees to retain soil moisture.
- Refraining from altering drainage patterns (ditches, ponds, etc.) near established trees during droughts.
- Refraining from fertilizing during droughts. Fertilization stimulates foliage production and can increase water requirements.

Removing trees currently infested with the flatheaded fir borer may prevent spread of the insect to nearby trees. But it is difficult to get the timing right, as the insects often leave trees before they are taken out. The flatheaded fir borer seems to be active throughout the year. Inspect trees regularly to detect infestations early. If many other dying trees are in the general area, the impact on beetle populations of removing a few infested trees is probably negligible.

Thinning can potentially improve the vigor of healthy Douglas-fir trees and their resistance to drought and subsequent beetle infestation (Figure 17). If feasible, thin during a “normal” year and not during a drought, as the thinning will probably result in a short-term increase in stress.



Figure 17. Within zones of elevated mortality, thinning may improve Douglas-fir resistance to drought stress and the flatheaded fir borer on more favorable sites, such as this north slope.

Credit: Max Bennett, © Oregon State University

Trees that are more likely to respond positively to thinning have the following characteristics:

- A live crown ratio of at least one-third (live branches occupy at least the top third of the tree; more is better).
- Healthy, dark green foliage with no sign of recent foliage loss.
- No sign of branch dieback or red branches, branchlets or needles within the live crown. (Dead branches lower down that have been shaded out by those above are OK.)
- No signs or symptoms of insects and disease, such as woodpecker-shaved bark, numerous holes in the trunk or pitch droplets in bark crevices.

Carefully consider the site’s potential to support Douglas-fir now and in the future. High-risk sites are not good candidates for thinning to promote Douglas-fir. On these sites, it may make more sense to remove declining Douglas-fir and to retain more drought- and fire-resistant trees such as pines and oaks. On more favorable sites such as northerly aspects with deep soils, thinning may help, at least in the short term. It can buy time and keep Douglas-fir in the stand for longer, if that is an objective.

In areas with recent and ongoing Douglas-fir mortality, it is sometimes difficult to distinguish between high-, moderate- and low-risk sites. Small changes in aspect or soils that are often seen at a scale of an acre or less can make a big difference in the vulnerability of Douglas-fir (Figure 18).

Through ongoing local research and monitoring, scientists expect to refine the ability to identify sites that are more or less suitable for Douglas-fir. In the meantime, landowners and managers must become attuned to these fine-scale site variations when assessing mortality risk and formulating management plans.

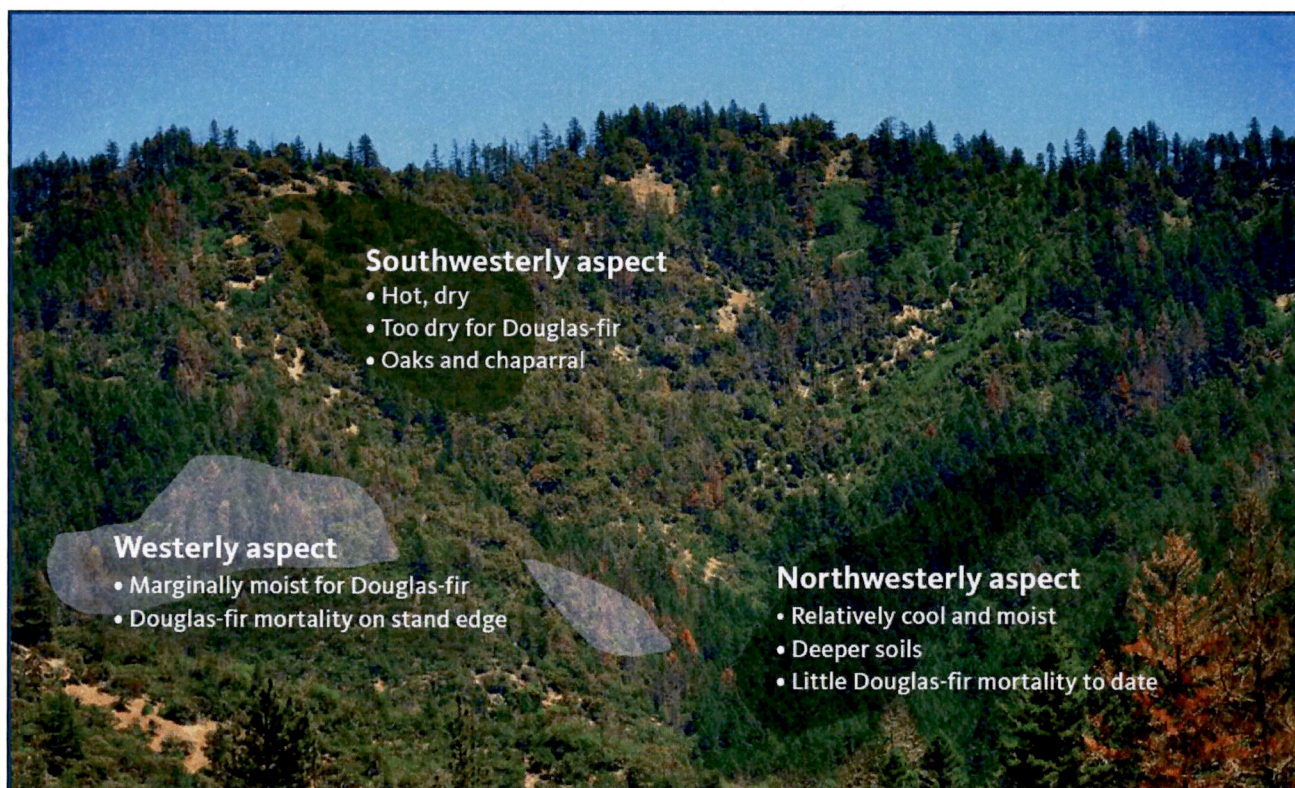


Figure 18. Douglas-fir mortality varies with small changes in aspect.

Credit: Ellen Goheen, U.S. Forest Service

What are the options for managing Douglas-fir mortality?

Landowners and land managers have several options for managing Douglas-fir mortality. These depend on:

- Their objectives.
- The current stage of mortality.
- The potential of the site to support Douglas-fir in the long term.
- The species composition of the stand.
- Economic and operational factors, such as the cost of treatment and possible offsetting revenues from sales of merchantable trees.

Be proactive. Take action before trees die. This will give you more options and may save some trees in the end. The following broad recommendations aim to improve forest health, habitat and wildfire resiliency in high-, moderate- and low-risk zones. See the Appendix for information about how these risk categories are defined.

High-risk zones (less than 35 inches of average annual precipitation)

Douglas-firs are declining and dying at high rates within this zone, and their long-term viability is doubtful. Some favorable sites, such as northeasterly aspects with deep soils, may serve as refuges for Douglas-fir.

To protect forest health and manage fuels, shift stand composition toward more drought-tolerant species, reduce stand density, and control surface and ladder fuel loads before they become difficult to manage. This moves the forest to a more open, fire-resilient condition that can be maintained with prescribed fire or other treatments. If

wildfire occurs, it is more likely to burn at low to moderate severity.

Thinning may include commercial removal and noncommercial treatment of surface and ladder fuels such as piling and pile burning. Commercial feasibility will depend on the size and amount of material, terrain, access, current markets and other factors. Sales of excess Douglas-fir could help offset noncommercial thinning costs.

Remove low-vigor, declining and dying Douglas-fir in favor of drought- and heat-tolerant species such as incense cedar, hardwoods and ponderosa and sugar pine. After thinning, tree spacing and density will likely be significantly lower. Pines, oaks and madrones are shade intolerant and need plenty of growing space. Make a priority of thinning Douglas-firs within or near the drip-line of these trees.

Favor variable tree spacing over uniform spacing. Leave some clumps of trees and openings to improve habitat and fire resilience. You can achieve these conditions over time with a series of light but frequent thinnings, removing only a few trees at a time. Or, move more rapidly with fewer, heavier thinnings that remove more trees in a single entry. As mortality levels in a forest increase, the more gradual approach becomes less feasible.

Consider retaining individual healthy, vigorous Douglas-fir, if present. These will generally be on more favorable microsites, though not always.

Once most or all of the Douglas-fir in a stand have died, treatment options are limited and expensive. Trees that have recently died may have some merchantable value, but value typically declines rapidly to zero after the first year. To reduce surface fuel loads, you could pile and burn the patch or conduct underburning. But these treatments will be expensive and pose logistical challenges.

Retain two to five large snags (preferably 16 inches and larger in diameter) per acre to benefit wildlife. Where snags must be removed, some large logs can be left on the ground to provide wildlife habitat. This does not significantly contribute to fire risk if surface fuels are reduced, including the smaller branches and tree tops. Follow thinning with maintenance treatments to maintain low levels of surface and ladder fuels.

Moderate risk zones (35–45 inches of average annual precipitation)

Douglas-fir decline and mortality are common in this zone. This is particularly evident on harsh sites, where the long-term viability of Douglas-fir is doubtful. On more favorable sites within this zone, such as northerly aspects with deep soils, it may be possible to manage for Douglas-fir as a significant component of mixed species stands, at least for the short term. On suitable sites, thinning can potentially improve Douglas-fir vigor and resistance to drought and flatheaded fir borer attack. Some guidelines:

- Carefully select leave trees. Desirable leave trees have crown ratios of at least 1/3 with no evidence of recent crown thinning or decline. They should be free of symptoms of flatheaded fir borer infestation (see Appendix 2).
- Thin proactively. Thinning to promote Douglas-fir retention is much more likely to succeed before trees die or are hit with severe or extended drought. Once you see mortality related to the flatheaded fir borer, local beetle pressure (the abundance of beetles in a given area) may be high enough to overcome the defenses of even relatively healthy trees, especially during drought.
- On less favorable sites within this zone, or after significant mortality begins, thin to promote more drought- and heat-tolerant species. This approach is similar to that for high-risk sites.

Lower-risk sites (greater than 45 inches of average annual precipitation)

These sites see occasional instances of Douglas-fir decline and mortality, especially on marginal sites, such as on the edges of oak woodlands. In low-risk sites:

- Closely monitor stands for signs and symptoms of Douglas-fir decline.
- Thin to improve Douglas-fir resistance to drought and beetle infestation in mixed species or Douglas-fir-dominated stands.
- Thin around pines, oaks and madrones if present to promote their growth.

How might suitable habitat for Douglas-fir shift with climate change?

The climate in southwest Oregon is expected to become warmer, with drier summers. Depending on future greenhouse gas emission levels, summer temperatures in Medford are projected to increase by 4.5°–6° F by mid-century and 6°–10° by 2100. Even with no changes in precipitation, this increased summer warmth will translate into greater drought stress for Douglas-fir and other trees. Douglas-fir will continue to decline and die at higher rates. As in the recent past, areas that are near the climatic “edge” for Douglas-fir will probably experience the greatest mortality.

Future greenhouse gas emission levels, model predictions and the response of individual species to climate changes are all uncertain. But it seems likely that the area in southwest Oregon that is climatically favorable for Douglas-fir will shift.

Scientists expect a substantial loss of suitable habitat at low- to mid-elevations around interior valleys as they become hotter and drier. They also expect a gain in habitat at higher elevations in the Cascades as these areas warm (Figure 19).

However, Douglas-fir is a drought-tolerant, long-lived and resilient species. Some trees that have become established in the prior, more favorable climate will likely persist into the future on sites that become climatically unfavorable or marginal. But these trees will experience significant stress.

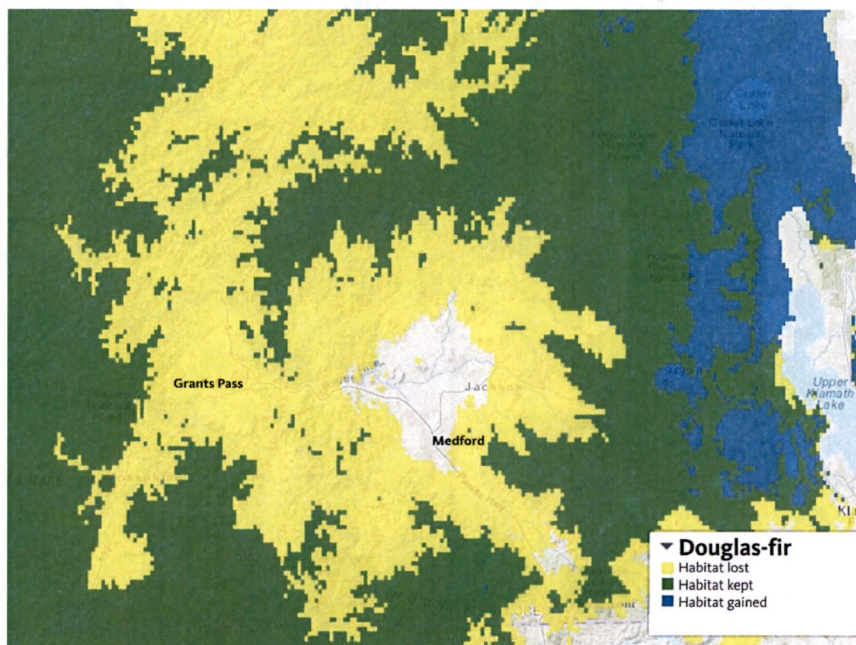


Figure 19. Projected changes in Douglas-fir habitat in southwest Oregon from 1960–91 baseline to 2071–2100 under a high baseline emissions scenario (RCP 8.5). Source: Species Habitat Tool

Credit: Leaflet | Tiles © Esri, DeLorme, NAVTEQ

Resource: Species Potential Habitat Tool (<https://specieshabitattool.org/spht/>)

The Species Potential Habitat Tool helps forest managers identify species suitable for specific sites under different climate change scenarios.

The ability of individual trees to adjust to a warming climate is also expected to vary. At present, some Douglas-fir trees on sites with heavy Douglas-fir mortality appear relatively vigorous. These trees are likely to persist, at least in the near term. We don't know whether this is due to genetics, more favorable microsites, development patterns (such as with open-grown trees) or a combination of factors. In any case, circumstances warrant careful evaluation of the health and vigor of individual Douglas-fir trees. Don't assume that sites with Douglas-fir decline and mortality issues will prove inhospitable to all Douglas-fir trees.

Conclusion

Douglas-fir decline and mortality in southwest Oregon have increased significantly in the past decade, resulting in negative impacts ranging from loss of habitat and timber to increased fuel loading. Recent research suggests that:

- The key predisposing factor for Douglas-fir decline in interior southwest Oregon is water stress. The vast majority of mortality occurs on hot, dry sites in or near the Rogue and Umpqua valleys.
- A high percentage of the recent mortality has occurred on sites where fire exclusion has resulted in Douglas-fir encroachment and increased abundance.
- Douglas-fir mortality is strongly associated with hot drought. Higher temperatures play an increasingly important role.
- The flatheaded fir borer is the single-most important insect involved in Douglas-fir mortality. But other insects and canker fungi often play important roles in the decline. Also contributing are cuts in production and storage of food and defensive compounds, and blockage of water transport due to embolisms.

Four factors can help you assess the likelihood of individual tree mortality:

1. Presence of woodpecker flaking or shaving of outer bark.
2. Beetle pressure.
3. Severity of crown decline.
4. Abundance of pitch droplets within bark crevices.

Within stands, beetle pressure, topography, proximity to a stand edge and soil factors influence the likelihood and severity of mortality. At the landscape scale, average annual precipitation and climatic water deficit (a measure of moisture stress) can help assess the relative risk of Douglas-fir decline. See the Appendix for detailed information on assessing mortality risk with trees, stands and landscapes.

Once the flatheaded fir borer successfully infests a Douglas-fir tree or the tree experiences severe crown decline, it cannot be saved. Salvage of dying and dead trees, unless done at a large scale, is unlikely to dampen flatheaded fir borer populations and ease beetle pressure on susceptible trees. But salvage can reduce future fuel loading and generate revenue for further treatments.

As a preventive measure, thinning may improve tree vigor and increase resistance to drought and pests — if trees are not already exhibiting signs of flatheaded fir borer infestation. However, thinning is less likely to succeed immediately before or during severe drought, or when the site is too hot and dry to sustain Douglas-fir. Leave trees must have sufficiently healthy crowns to respond to thinning.

Options for managing Douglas-fir decline depend on the current stage of mortality, landowner objectives, the potential of the site to support Douglas-fir and other factors. Typical restoration objectives include shifting to drought-tolerant species, reducing fuel loads and reintroducing low-intensity fire.

Not surprisingly, there are more options, and they tend to be less costly earlier in the decline process.

Given expected climate changes, Douglas-fir decline and mortality will likely continue. The area of suitable habitat for Douglas-fir at low to moderate elevations in interior southwest Oregon is likely to contract.

Appendix

Assessing the risk of drought- and insect-related decline of Douglas-fir in Southwest Oregon

Here are some methods that forest landowners and land managers in southwest Oregon can use to:

- Assess the likelihood that an individual Douglas-fir tree will die in the next two years in areas where drought- and insect-related mortality are occurring.
- Estimate the likelihood and expected severity of Douglas-fir mortality in the next five years at a given point on the landscape.
- Determine the relative risk of Douglas-fir decline in a general area based on mean annual precipitation.

These methods are intended for assessing Douglas-fir decline and mortality related to the causes discussed in this publication and not for all possible causes of decline or mortality.

What is the probability that a given Douglas-fir tree will die in the next two years?

This question is particularly relevant when marking trees for take or leave in a thinning. We use four factors to assess the likelihood of individual tree mortality (Table 1):

- Presence of woodpecker flaking or shaving of outer bark on the subject tree.
- Beetle pressure.
- Severity of crown decline.
- Abundance of pitch droplets within bark crevices.

If you see woodpecker bark shaving or flaking on the tree, the tree is almost certain to die, regardless of other symptoms. Assuming you don't see shaving on the tree, consider the other three factors in assessing mortality risk.

Beetle pressure refers to the abundance of beetles in the local area, as evidenced by the amount of recent mortality in the vicinity of the tree being assessed. This represents a contagion effect: the dispersal of beetles from infested trees to nearby uninfested trees. You can verify infestation by the presence of trees with woodpecker-shaved or -flaked bark or the presence of flatheaded fir borer larvae, adults and galleries under the bark of symptomatic trees. (Chop the bark away and examine the surface area.) Judging the severity of crown decline is subjective. In general, trees with more severe decline will have more symptoms, or symptoms will be more advanced.

Table 1. Mortality risk rating for individual Douglas-fir trees

BEETLE PRESSURE

- Douglas-fir mortality from flatheaded fir borer is found within a 1-acre plot (120-foot radius): 4 points
- Douglas-fir mortality from flatheaded fir borer not found within 1-acre plot: 0 points

CROWN DECLINE

- Severe crown decline: 3 points
- Moderate crown decline: 2 points
- Light crown decline: 1 point
- No recent crown decline: 0 points

ABUNDANCE OF PITCH JEWELS

- Abundant pitch jewels: 3 points
- Light pitch jewels: 1 point
- Pitch jewels absent: 0 points

SCORE

- **6 or more points:** High probability of mortality within two years
- **3–5 points:** Moderate probability of mortality within two years
- **0–2 points:** Low probability of mortality within two years

What is the five-year probability and expected severity of Douglas-fir mortality in a given location?

The following risk rating system (Table 2) is intended to assess Douglas-fir mortality risk over the next five years at a given point on the landscape, where higher values represent greater risk. This system applies to sites with less than 45 inches of annual precipitation or more than 300mm of mean annual climatic water deficit (see sidebar), where Douglas-fir is present. Risk at this spatial scale is expected to vary based on beetle pressure as well as topographic factors, proximity to stand edges and soil factors, all of which are believed to influence tree moisture status.

Here, risk refers to:

- The likelihood of observing Douglas-fir mortality in a 1-acre plot at a given point on the landscape.
- The probability that mortality will increase and intensify at this location.
- The expected severity of mortality, measured as the percentage of the Douglas-fir basal area within a 1-acre area surrounding the sample point that is dead or dying.

Because topography and soils often vary considerably over short distances in southwest Oregon, relative risk also tends to vary over short distances in this region.

When you want to characterize the risk within a stand, assess multiple plots.

Table 2. Douglas-fir mortality risk rating for sites less than or equal to 1 acre
BEETLE PRESSURE

- Douglas-fir mortality from flatheaded fir borer is abundant within a 1-acre plot: 6 points
- Douglas-fir mortality from flatheaded fir borer is found within a half-mile of plot: 3 points
- Douglas-fir mortality from flatheaded fir borer is not found within a half-mile of plot: 0 points

TOPOGRAPHIC FACTOR (HEAT LOAD)

- Southwest aspect and one or more of the following: slopes greater than 35%, ridge or upper slope position, convex terrain: 2 points
- All others: 1 point
- Northeast aspect and one or more of the following: position on lower one-third of slope, concave terrain: 0 points

PROXIMITY TO STAND EDGE

- Stand edge within 100 feet: 1 point
- Stand interior: 0 points

SOIL FACTOR

- One or more of the following: poorly drained soils, high clay percentage, shallow soils, Oregon white oak present within 50 feet: 1 point
- All others: 0 points

RELATIVE RISK CATEGORIES BY SCORE

- **5 or more points:** Very high probability of mortality and intensification. Very high severity: More than 50% of Douglas-fir basal area in a 1-acre plot is dead or dying.
- **4 points:** High probability of mortality and intensification. Moderate to high severity: 25%–50% of Douglas-fir basal area in a 1-acre plot is dead or dying.
- **2–3 points:** Moderate probability and intensification is moderate. Low severity: 10%–25% of Douglas-fir basal area in a 1-acre plot is dead or dying.
- **0–1 points:** Probability of mortality and intensification is low. Severity: Dead or dying Douglas-fir are few or absent. Less than 10% of Douglas-fir basal area in plot is dead or dying.

What is the five-year risk of Douglas-fir decline and mortality at larger spatial scales?

This following risk rating systems assesses the likelihood of encountering Douglas-fir decline and mortality in the next five years at the watershed or landscape scale, the abundance and severity of mortality, and the probability that mortality will increase in that area. Two risk rating systems are provided — one based on average annual precipitation (Table 3) and one based on climatic water deficit (Table 4).

Table 3. Relative Douglas-fir mortality risk by precipitation zones

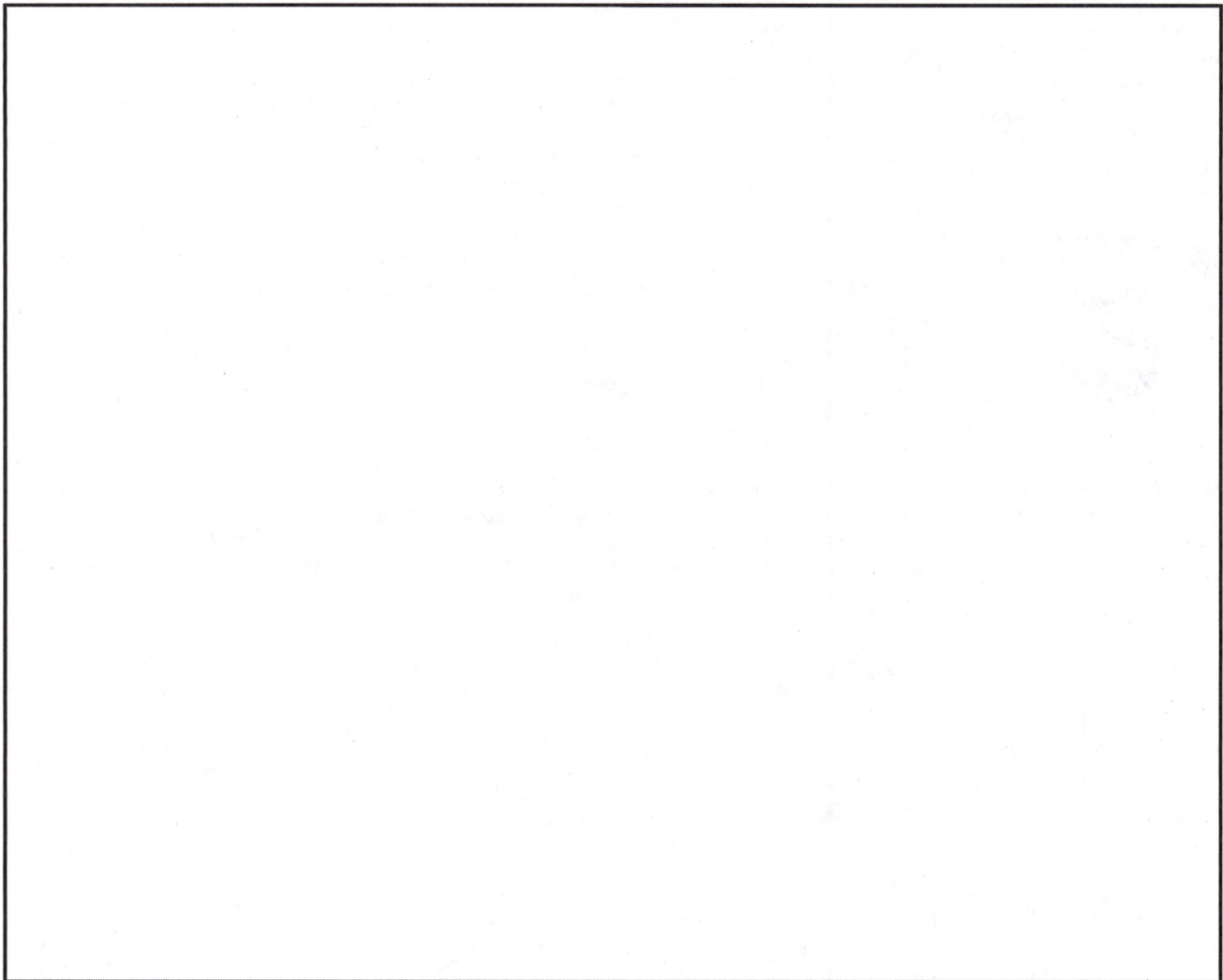
Average annual precipitation (inches)	Relative risk level	Interpretation
Less than 35 inches	High	Douglas-fir decline and mortality abundant; some favorable sites such as northeasterly aspects with deep soils may serve as refugia.
35–45 inches	Moderate	Douglas-fir decline and mortality are common, particularly on harsh sites.
45–60 inches	Low	Douglas-fir decline and mortality observed occasionally, especially on marginal sites, such as those bordering oak woodlands.
More than 60 inches	Very low	Douglas-fir decline and mortality due to drought-related agents is uncommon.

Table 4. Relative risk by climatic water deficit

Climatic water deficit (mm)	Relative risk level	Interpretation
More than 400mm	Very high	Too hot and dry for Douglas-fir; Douglas-fir seldom encountered.
350–400mm	High	Douglas-fir decline abundant; some favorable sites such as northeasterly aspects with deep soils may serve as refugia.
300–350mm	Moderate	Douglas-fir decline is common, particularly on harsh sites.
250–300mm	Low	Douglas-fir decline observed occasionally, especially on marginal sites, such as those bordering oak woodlands.
Less than 250mm	Very low	Douglas-fir decline is seldom encountered.

Climatic water deficit, southwest Oregon

The map shows the mean annual climatic water deficit (in millimeters) for the period 1980–2010. As the climatic water deficit increases, so does the risk of Douglas-fir decline.



Data: The Nature Conservancy

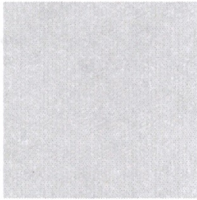
Climatic water deficit

Climatic water deficit measures drought stress based on the difference between potential and actual evapotranspiration.

Think of potential evapotranspiration as the amount of water that would be evaporated from soils and transpired from plants if soil water was unlimited. Actual evapotranspiration is the amount of moisture that is actually lost from soil and plants and is limited by soil water storage. As the temperature goes up and precipitation goes down, the climatic water deficit (measured in millimeters) increases.

The long-term average annual climatic water deficit is a good measure of the moisture stress experienced at a given site and often correlates with the types and productivity of vegetation, as well as tree mortality risk. Climatic water deficit may be a better measure of drought stress than precipitation alone because it factors in temperature and soil water storage.

About the authors



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- 2) State your name and speak clearly into the microphone
- 3) Limit your comments to the time allotted
- 4) Provide any written materials to the meeting Secretary
- 5) Speakers are solely responsible for the content of their statement

Date:

3/18/24

Name: (Please Print)

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Ashland Resident:

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3.

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Date:

3/18/24

Name: (Please Print)

John Maurer

Ashland Resident:



YES



NO

City: _____

Agenda Topic/Item Number:

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