General Wildfire Information:

Comprehensive Sites:

National Fire Protection Association Homepage

A consumer-friendly guide to all things wildfire in the United States, with ample resources for public education on wildfire.

Keep Oregon Green Website

Keep Oregon Green has resources about wildfire prevention, interactive maps of current wildfire conditions in Oregon, annual reports and more.

The National Cohesive Wildland Fire Management Strategy

An informational page on the National Cohesive Wildland Fire Management Strategy, which was adopted by the Wildland Fire Leadership Council. The page includes links to a PDF of the plan, FAQs and other foundational documents. For a "Coffee Break Bulletin" on the strategy put together by FEMA, click here.

Related Podcasts:

California Burning

An NPR podcast that features stories about wildfire in California and information about the recent history of wildfire, and how to approach solutions.

Wildfire Archives

An informative podcast produced by REI that explores the 2017 Eagle Creek Fire in Oregon, the history of fire, firefighting and more.

Built to Burn

A 99% Invisible episode exploring how Jack Cohen, USFS fire behavioral scientist, uncovered how to keep home safe from wildfires and created the foundation for home hardening and defensible space recommendations today.

Forest Management

Forest Collaboratives

Oregon Explorer's Page on Forest Collaboratives

This page provides a <u>Pacific Northwest Directory of Forest Collaboratives</u> and a <u>Forest Collaborative Map Viewer</u> among other resources for understanding collaboratives in the Pacific Northwest.

The Blue Mountains Forest Partners Website

BMFP is a forest collaborative based out of John Day, covered in the first episode of the podcast. Their website has more information about their current projects and details about their members. (Referenced in episode one of The Fire Story.)

Prescribed fire

The Nature Conservancy's page on controlled burns

A page on prescribed fire with information about relevant bills, FAQs and several informative photos and videos.

Empirical Support for the Use of Prescribed Burning as a Fuel Treatment

A 2015 study for Current Forestry Reports on how effective prescribed fire is.

<u>Probability of tree survival after wildfire in an interior pine forest of northern California:</u>
Effects of thinning and prescribed fire

A 2007 study on the efficacy of different management strategies for preventing tree mortality after a wildfire in the Blacks Mountains Experimental Forest.

Housing and Wildfire

Wildfire risk

U.S. Fire Administration- What is the WUI?

The US Fire Administration's definition of the WUI with infographics that illustrate helpful statistics.

Fire Restrictions in Oregon:

Where are you allowed to have a campfire at any given time? Find out fire restrictions in Oregon with this interactive map provided by ODF.

Map of the 2010 Wildland Urban Interface in the U.S.

Information and maps about the Wildland-Urban Interface in the United States.

Compares number of homes in the WUI by state and provides a comprehensive map of the WUI in the US as well as maps of each state individually.

NYT Story on Increasing Population in the WUI Population:

This story takes a look at the population growth in WUI areas in the United States and how that increases wildfire risk. It especially focuses on California.

Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk

A study on population growth in the Wildland-Urban Interface in the United States from 1990-2010, and how that raises wildfire risk.

How risk management can prevent future wildfire disasters in the wildland-urban interface

A study that examines prefire mitigation activities and structure loss during the Fourmile Canyon Fire outside of Boulder CO. The study sheds light on the conditions under which WUI wildfire disasters occur, and introduces a wildfire risk assessment framework.

Wildfire Risk Explorer

An interactive map of Oregon provided by ODF and the USFS which provides details about flammable vegetation and potential fire movement around a selected location. You can use the Homeowner's Report tool for a summary of the fire environment around your home and actions you can take to reduce your risk. For a more advanced Wildfire Risk Explorer, click here.

Fire-Adapted Communities

NFPA's State Listing of Firewise Communities:

Find out if a community in the United States participates in the FireWise program.

The Tree Farm Housing Development Website

The Tree Farm Housing Development, covered in Episode 2, Season 2 of the fire story, was built to be a FireWise Community from the ground up. Find more information about their background and the developer's other projects.

FEMA's 7 Steps for Building a Fire-Adapted Community

How are fire-adapted communities created? Where can they be created? Read FEMA's guide to creating FACs and a community wildfire protection plan for more information.

Government Policy

Homeowners' Response to Building Codes in Oregon (2021)

An NPR story about the reaction to proposed wildfire building codes in Oregon in the past.

Home Hardening

FEMA Guidance on Creating Fire Resistant Structures

An 80-page in-depth look at constructing fire-resistant structures with links to further reading and research.

NFPA's page on preparing homes for wildfire

A guide to preparing your home for wildfire with helpful images and diagrams.

Home retrofit guide

A guide provided by Calfire with information about hardening a home to wildfire. The site provides Low-cost Retrofit list, a downloadable guide, and a Wildfire Survey with a custom checklist.

The Road Ahead: Adapting Our Suburban Communities to Wildfire

A guide produced by the IBHS (See: IBHS) to help homeowners navigate how to reduce wildfire risk by assessing home vulnerabilities and potential risk reduction behaviors. Helpful explanations of and photographs showing how to harden a home and reduce vegetation in the Home Ignition Zone.

California's Building Codes

More information about the building codes passed in California over a decade ago that became the model for Oregon's codes.

Equity and Fire

Greater Impact: How Disasters Affect People of Low Socioeconomic Status

A 2017 issue of the Supplemental Research Bulletin that explores how people in poverty, with low incomes and of a low socioeconomic status experience disasters.

Building a Wildfire-Resistant Home: Codes and Costs

A research study examining the cost differences between fire-resistant and traditional construction for new and retrofitted buildings. The study found that "a new home built to wildfire-resistant codes can be constructed for roughly the same cost as a typical home," but retrofitting a home can be costly up-front. By Headwater Economics (independent, nonprofit research group) in partnership with IBHS. Research "prepared at the request of Park County, Montana, as part of the Community Planning Assistance for Wildfire (CPAW) program."

Fire and the Environment:

<u>Changing wildfire, changing forests: the effects of climate change on fire regimes and vegetation in the Pacific Northwest, USA</u>

A study on the Western United States and the potential effects of climate change and fire on PNW forests.

Fire and Biodiversity in the Anthropocene

A global study on the interactions between modern wildfires and ecosystems around the world.

Impact of anthropogenic climate change on wildfire across western US forests

A PNAS study on how human-caused climate changed has caused increased fire season fuel aridity, which fosters more favorable fire conditions in forested ecosystems.

<u>Diameter Limits Impede Restoration of Historical Conditions in Dry Mixed-conifer Forests of Eastern Oregon, USA</u>

A 2021 study referenced in the podcast on how diameter limits like the 21-inch affect forest restoration.

Fire Effects on the Environment

An informational USFS page on how fire effects everything from meteorology to ecology, with links to dozens of relevant studies on various fire topics.

Insurance:

<u>Division of Financial Regulation</u> (DFR) (Within: Department of Consumer and Business Services)

Oregon's regulatory agency for insurance that licenses and monitors insurers to ensure access to and education about insurance for consumers. Part of the Department of Consumer and Business Services.

Insurance Institute for Business & Home Safety (IBHS)

IBHS is "an independent, nonprofit 501 (C), scientific research and communications organization" funded and supported by property insurers and reinsurers. IBHS has studied how embers transport and how deck, venting, siding and other building materials affect ignitability. It also produces guides for home and business owners to reduce wildfire risk.

IBHS Primer Series on Wildfire – Insurance Institute for Business & Home Safety An introduction to what causes wildfires, how buildings are at risk, and how the risk to buildings can be modeled in three easy to access PDFs produced by the IBHS and

buildings can be modeled in three easy to access PDFs produced by the IBHS and intended for understanding risk for insurance providers.

Application of Wildfire Mitigation to Insured Property Exposure

A cost-benefit analysis study that simulated risk reduction measures like home hardening and vegetation reduction in different communities in California, Colorado, and Oregon to determine for what houses and neighborhoods retrofitting homes with wildfire resistant materials is cost-effective. Study by RMS (Private catastrophe modeling company), NAIC (National Association of Insurance Commissioners), and the IBHS (Insurance Institute for Business & Home Safety)

RMS Estimates that Total Insured Losses from the 2020 Western U.S. Wildfires Will Be Between US\$7bn – US\$13bn

RMS estimate for insured losses due to the 2020 wildfire season as of December 1, 2020 for California, Oregon, Washington, and Colorado - totaling between US\$7.0 and US\$13.0 billion.

Information about 'Protection Gap' for Homeowners' Insurance

Learn more about how and to what degree homeowners' aren't always fully protected by insurance coverage.

State Government/Responses:

Governor's Council on Wildfire Response (High school, intermediate, report, 2019)

The full 110-page report on Oregon's current (as of 2019) state of wildfire "prevention, preparedness and response" compiled by Governor Brown's selected Council. The report also assesses "the sustainability of the current model to provide recommendations to strengthen, improve, or replace existing systems."

Senate Bill 762 Text and Legislative Process

Information about the 2021 omnibus bill to prepare Oregon for future wildfires. Information about the specific sections of the bill, recorded meetings and testimonies, and progression of bill language.

Oregon Department of Forestry's Role in Senate Bill 762

More simplified and condensed information about Senate Bill 762 and how the Department is involved, including <u>design of new map and development of Wildland-Urban Interface definition</u>.

House Bill 3272 - Insurance

Information about the 2021 bill increasing insurance flexibility for homeowners after catastrophes, introduced by Representative Pam Marsh.

Fire Hardening Grant Program

More information about new state-funded grants for Oregonians to fund wildfire-resistant material choices during new construction.

Almeda Fire:

NYT Review

Watch a NYT overview of the Alameda fire to gain a better context of the fire and to see visuals.

Almeda Fire Report

Report commissioned by Jackson County to analyze what occurred leading up to and during the Alameda fire, with suggestions for improvement to reduce the likelihood for a devastating fire in the community moving forward.

Preceding Close-Call Fires: <u>Deer Ridge</u> & <u>Oak Knoll</u>

Learn more about the wildfires that spurred Fire Marshal Greg Kleinberg to introduce building codes to protect communities from potential urban wildfires.

Gateway Project - Transitional Housing

Learn more about the housing projects Representative Pam Marsh and Talent Interim City Manager Jamie McLeod-Skinner worked to expedite in 2021.

Mobile Home Destruction

Read from OPB about how the Alameda fire exacerbated affordable housing shortgages in Southern Oregon when it destroyed manufactured homes alongside the greenway.

For Kids:

Keep Oregon Green's Printable Activity Sheets

Activity sheets to teach children about forest management, campfire safety and more.

National Fire Protection Agency's Tools for Teachers

Resources for teaching about wildfire like downloadable educational programs, lesson plans, tip sheets, videos, and more.

"Without Warning! Wildfire."

A new comic book in 2021 produced for youth to learn about how to prepare and prevent wildfires. It can be downloaded for free online or purchased as a physical copy.

Insurance

Key Terms:

Actuarial science

Relating to the study of insurance premiums and dividends calculated by actuaries.

Agent

Building codes

Catastrophe model (CAT model)

Catastrophe bonds (CAT bonds)

Claim

Defensible space

Disaster

Externality

FAIR Insurance

Federal Emergency Management Agency (FEMA)

Fire Behavior Triangle

Fire protection services

Flood Insurance Rate Map (FIRM)

Flood Zone

Fuel

Governor's Council on Wildfire Response (2019) [See Governor's Council on Wildfire

Response report below.]

Home hardening

Home Ignition Zone (HIZ)

House Bill 3272 (2021) - 2 years to rebuild

Land Use

Lloyd's of London

Moral Hazard

National Flood Insurance Program (NFIP)

Nonrenewal

Omnibus bill [See Senate Bill 762]

Policy

Premiums

Rebuild Timeline Agreement

Reinsurance

Renewal

Replacement Cost

Risk

Risk Rating 2.0 [See NFIP]

Underwriting

Senate Bill 762 (2021) [See Omnibus bill]

Stochastic Event [See Catastrophe model]

Wildland-Urban Interface (WUI)

Key Players:

Nonprofit:

Community Planning Assistance for Wildfire (CPAW)

CPAW helps reduce wildfire risk through land use planning assistance, research and hazard mitigation mapping. CPAW is funded by the USFS and is run by Headwater Economics.

Government:

Private:

Risk Management Solutions (RMS)

RMS is a private company that produces catastrophe models that simulate the risk to property from natural disasters like hurricanes, floods and wildfires. RMS provides service to insurers, reinsurers, and to the public sector. The RMS Wildfire Risk Model is used by insurers to assess wildfire risk across the US.

Research/Media:

<u>Wildfire: Demonstrating the Cost-Effectiveness of Mitigation | RMS</u> (College, Beginner, Article, 2020)

Discussion of increasing insurance premiums and non-renewals after 2017 - 2020 wildfire seasons, and how mitigation can structural and vegetation mitigation measures can reduce risk in a cost efficient manner based on granular data from catastrophe models like RMS solutions (publisher). References Application of Wildfire Mitigation to Insured Property Exposure.

Post-Wildfire Investigations (High school, intermediate, studies, Last updated 2018)

A collection of studies conducted by IBHS after wildfires that assess the success of mitigation measures and suggest productive measures for future risk mitigation. Studies include the Camp Fire of November 2018 which was California's deadliest and costliest wildfire.