

Evolving Workflows of a Modern GIS

Oregon Department of Forestry

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Evolving Workflows of a Modern GIS

- Background
 - Centralized Data and Workspace
- ArcGIS Enterprise
 - GeoEvent Server
 - Image Server \ Raster Functions
- ArcGIS Online
 - National Interagency Fire Center Collaboration
 - ODF Hub
- Goals and Challenges



Oregon Dept of Forestry

To serve the people of Oregon by protecting, managing, and promoting stewardship of Oregon's forests to enhance environmental, economic, and community sustainability.

Forest Resources

Protection from Fire

State Forests Management

Partnership and Planning

Urban and Community Forestry

Administrative Services

Oregon Department of Forestry



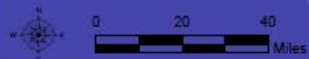
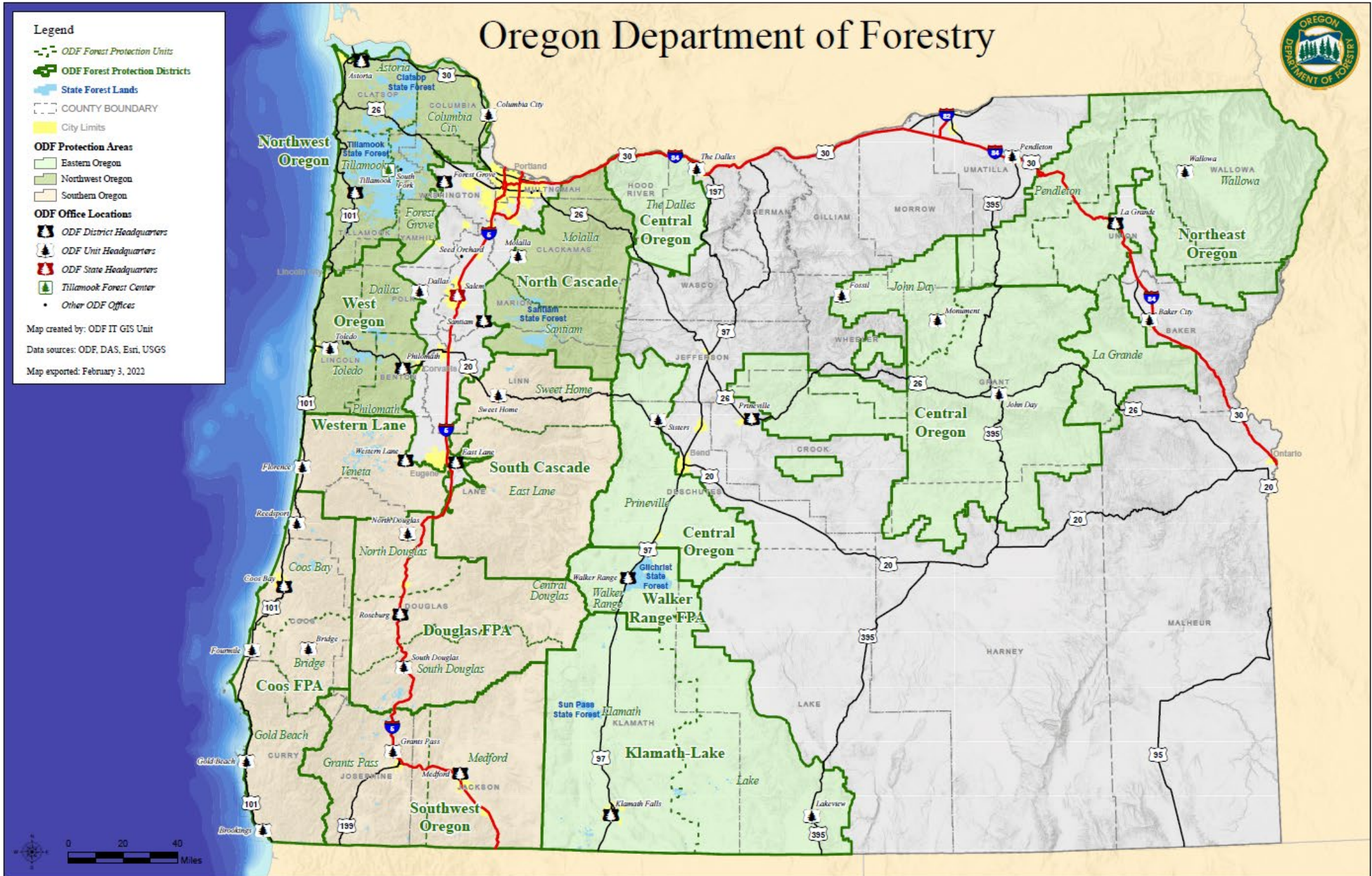
Legend

- ODF Forest Protection Units
- ODF Forest Protection Districts
- State Forest Lands
- COUNTY BOUNDARY
- City Limits
- ODF Protection Areas**
 - Eastern Oregon
 - Northwest Oregon
 - Southern Oregon
- ODF Office Locations**
 - ODF District Headquarters
 - ODF Unit Headquarters
 - ODF State Headquarters
 - Tillamook Forest Center
 - Other ODF Offices

Map created by: ODF IT GIS Unit

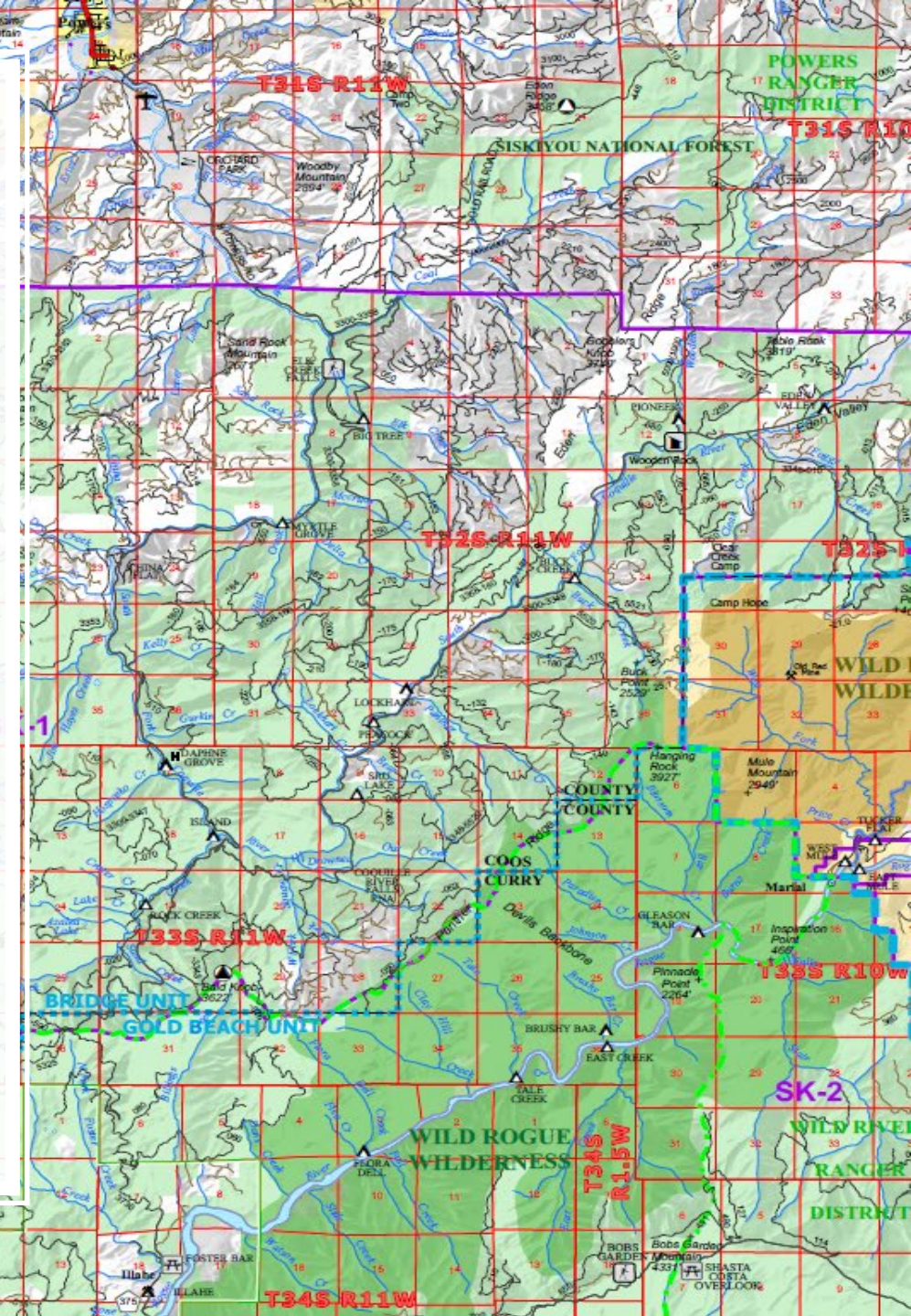
Data sources: ODF, DAS, Esri, USGS

Map exported: February 3, 2022



ODF GIS Personnel

- GIS Unit: Manager, Data Administrator, GIS Coordinator, 2 GIS Specialists
- GIS Coordinators: Program coordinators, Field coordinators
- GIS Power Users: Analysts, District contacts
- GIS Users: ~300 licensed users
- Stakeholders: Inter-agency, partners, public, many people and organizations



GIS Library

gis_library (\\larch) (L:)

- GIS_Connections
- GIS_Layers
- GIS_Products
- GIS_Resources
- Master_Data

GIS_Connections

- gis_raster@readonly.sde
- gis_sf@readonly.sde
- gis_vector@edit.sde
- gis_vector@readonly.sde
- gis_work@ProdGIS.sde

GIS_Layers

- Annotation
- Biology
- Boundaries
- Climate
- Cultural
- District
- Fire
- Geoscience
- Hydrography
- Indexes
- LandUse_Cover
- Logos
- NOAPS
- Orthoimagery
- Other_States
- Ownership
- PLSS
- Published_Maps
- Published_MapServices
- Topography
- Training
- Transportation
- Utilities

Master_Data

- ODF_District_Data
- ODF_Program_Data
- ODF_Raster
 - Film_Catalog_Scans
 - Hydrography
 - LandUseLandCover
 - Orthoimagery
 - Published_Maps
 - RasterFunctions
 - Tiles
 - Topography
 - gSSURGO_OR.gdb
- ODF_Vector
 - Tiles
 - Contours.gdb
 - ContoursFromLidar.gdb
 - ContoursFromLidar_10foot.gdb
 - Fires.gdb
 - gis_vector.gdb

GIS Projects

gis_projects (\\larch) (P:)

- > Districts
- > Fire_Protection
- > Forest_Resources
- > GIS_Unit
- > ODF_Edits
- > Partnership_Planning
- > Private_Forests
- > State_Forests
- > Training
- > Urban_Forestry

GIS_Unit

- > 2017
- > 2018
- > 2019
- > 2020
- > 2021
- > 2022
- Archive
- > ServicePublishing

2022

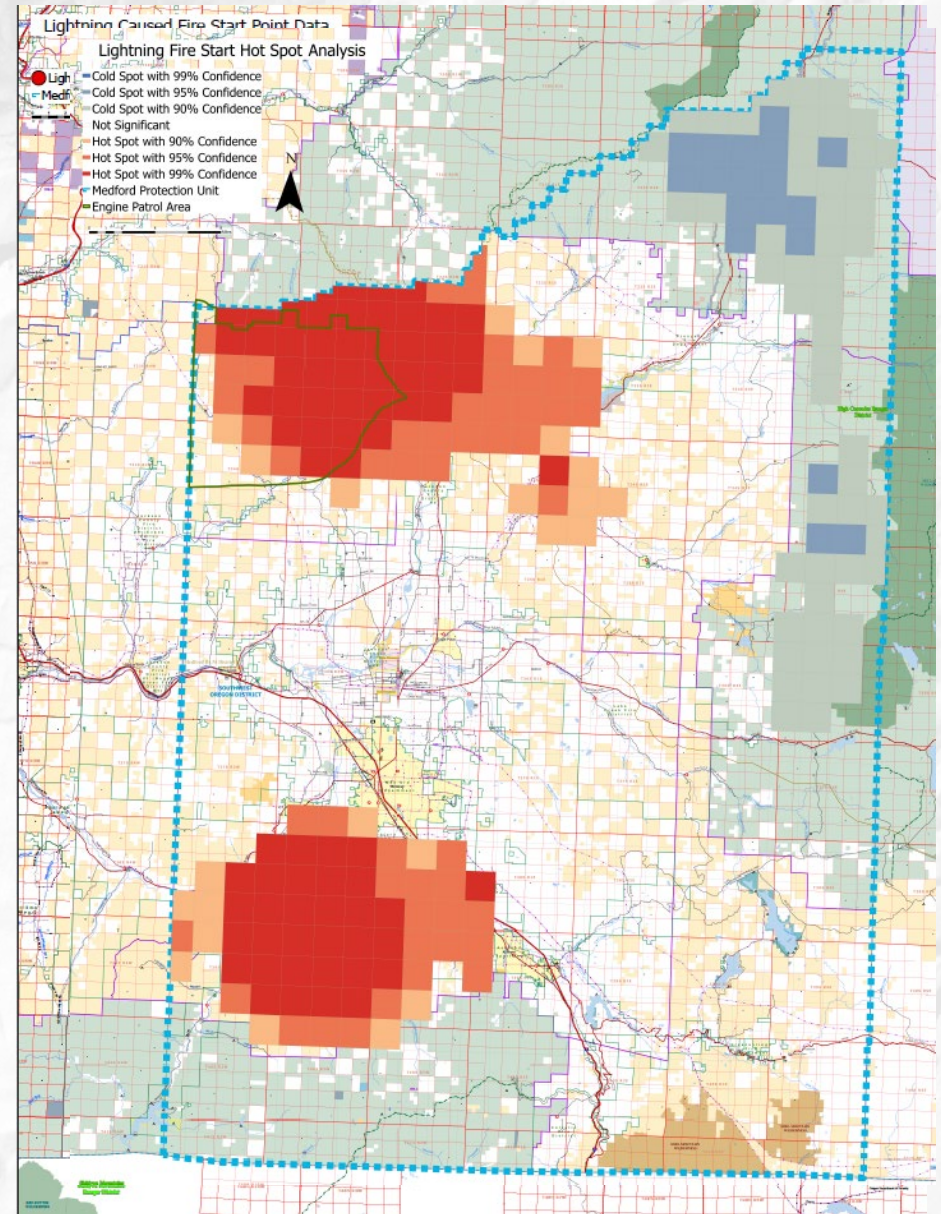
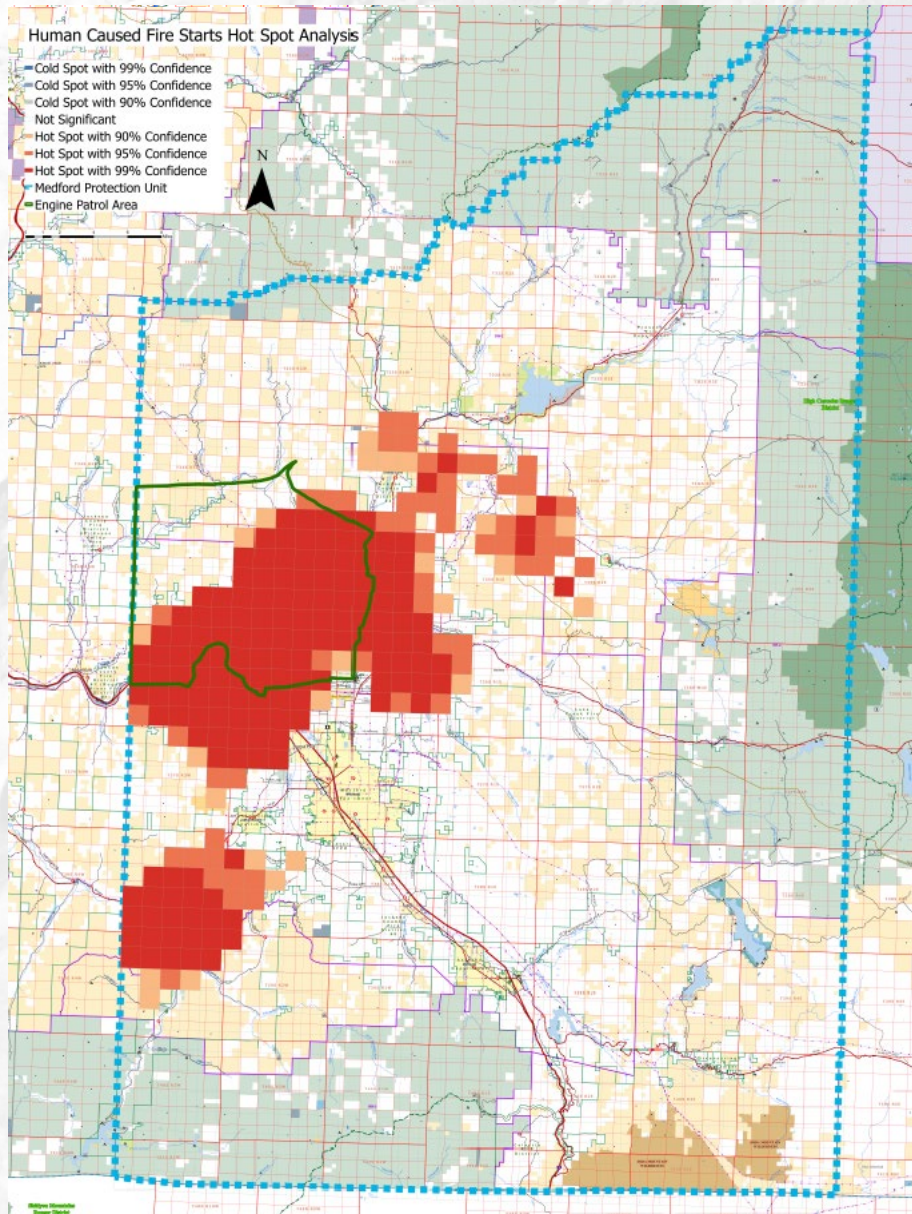
- > 2022_AviationHazards
- > 2022_Boundaries
- > 2022_Cartography
- > 2022_DataSharing
- 2022_Demos
- > 2022_DocumentationUpdates
- > 2022_FeatureBackup
- > 2022_Features
- 2022_FFR
- 2022_FireTrailers
- > 2022_ForestlandClassification
- > 2022_Gates
- > 2022_GNIS
- > 2022_HabitatMap
- > 2022_ImageServer
- > 2022_IndustrialOwnership
- > 2022_Lidar
- > 2022_MosaicDatasets
- > 2022_NHD
- > 2022_NLCD
- > 2022_OregonBAM

2022_Lidar

- > BeachieCreek_2022
- > JohnDayAcquisition_DOGAMI_20220429
- > PFA_Acquisition_Prep202203

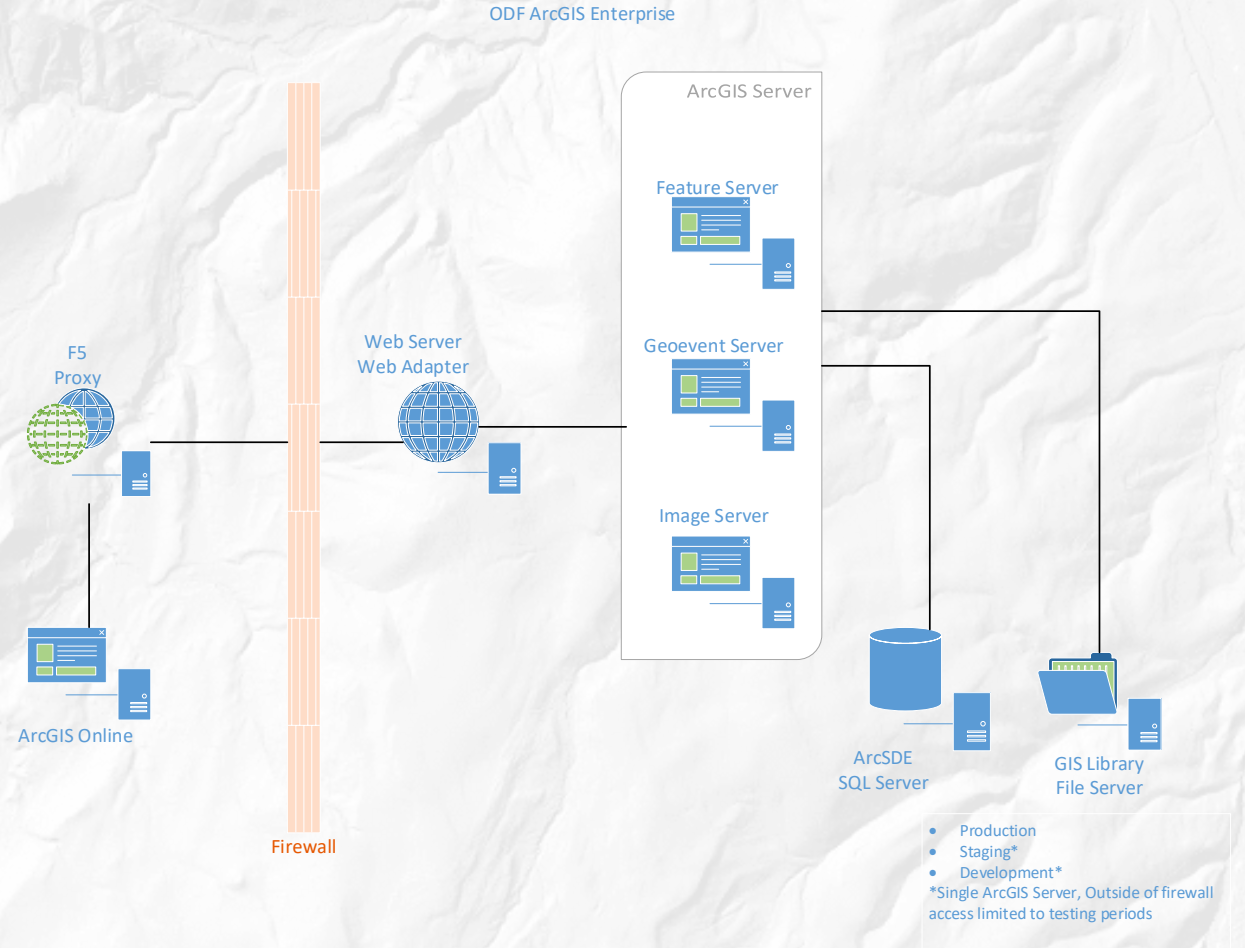
- .backups
- DOGAMI_projects
- ImportLog
- Index
- PFA_Acquisition_Prep202203.gdb
- DRAFT project areas.png
- LidarAcquisitionGraphic.png
- LidarAcquisitionGraphicStatewide.png
- LidarGaps_InitialDraftAreas_20220503.pp...
- PFA_Acquisition_Prep202203.aprx
- PFA_Acquisition_Prep202203.aprx.xml
- PFA_Acquisition_Prep202203.tbx
- WesternOR_Zoom.png

Fire Start Points (Human Caused and Lightning): 2017 – 2021



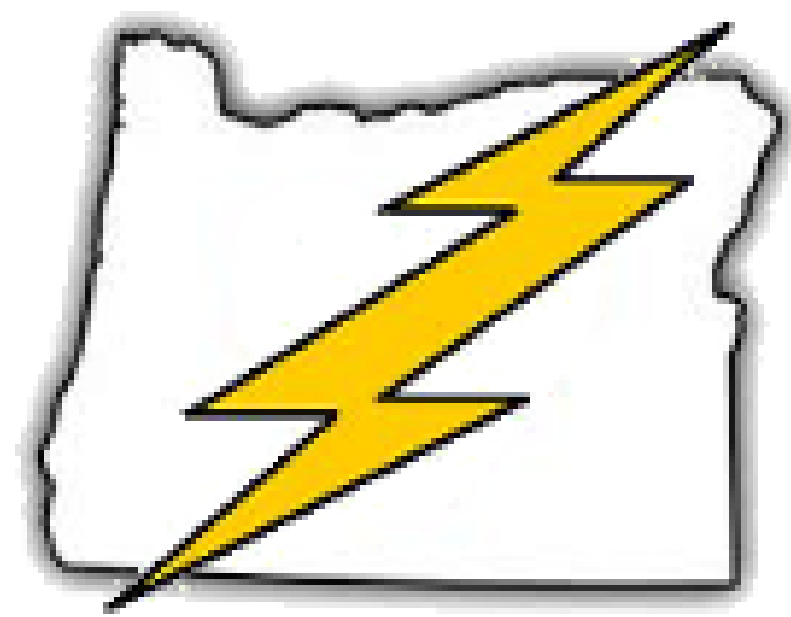
ArcGIS Enterprise

- ArcGIS Server
 - Feature Server
 - GeoEvent Server Role
 - Image Server Role
- File Server
- SQL Server
- ArcGIS Online



Geoevent Server Role Workflows

- Lightning
 - Geoevents
 - [Web](#)
 - Mobile
- Vandalism
 - Geoevents
 - [Web](#)
 - Mobile



ODF

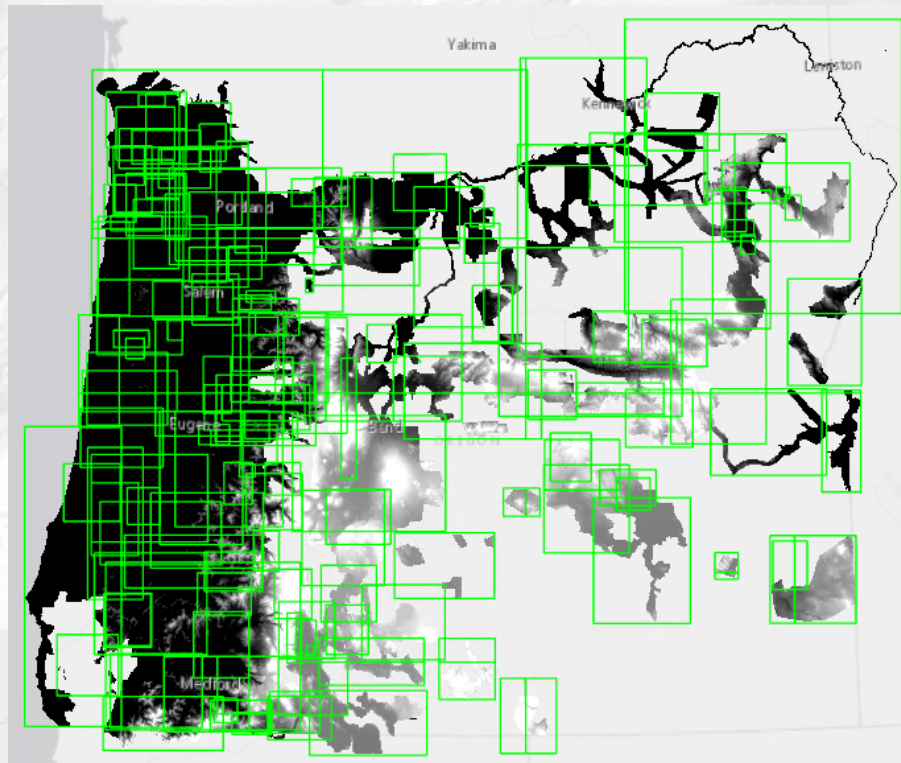


State Forests Vandalism

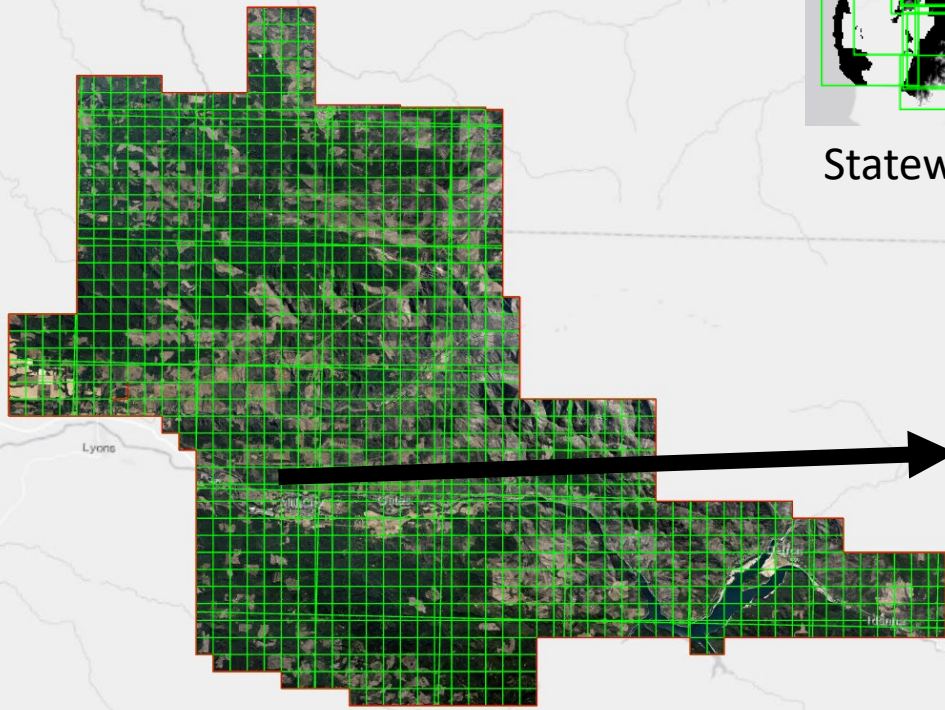
Experience

Image Server

- Mosaic Datasets
- Raster Functions



Statewide Lidar 1m DEM Mosaic Dataset



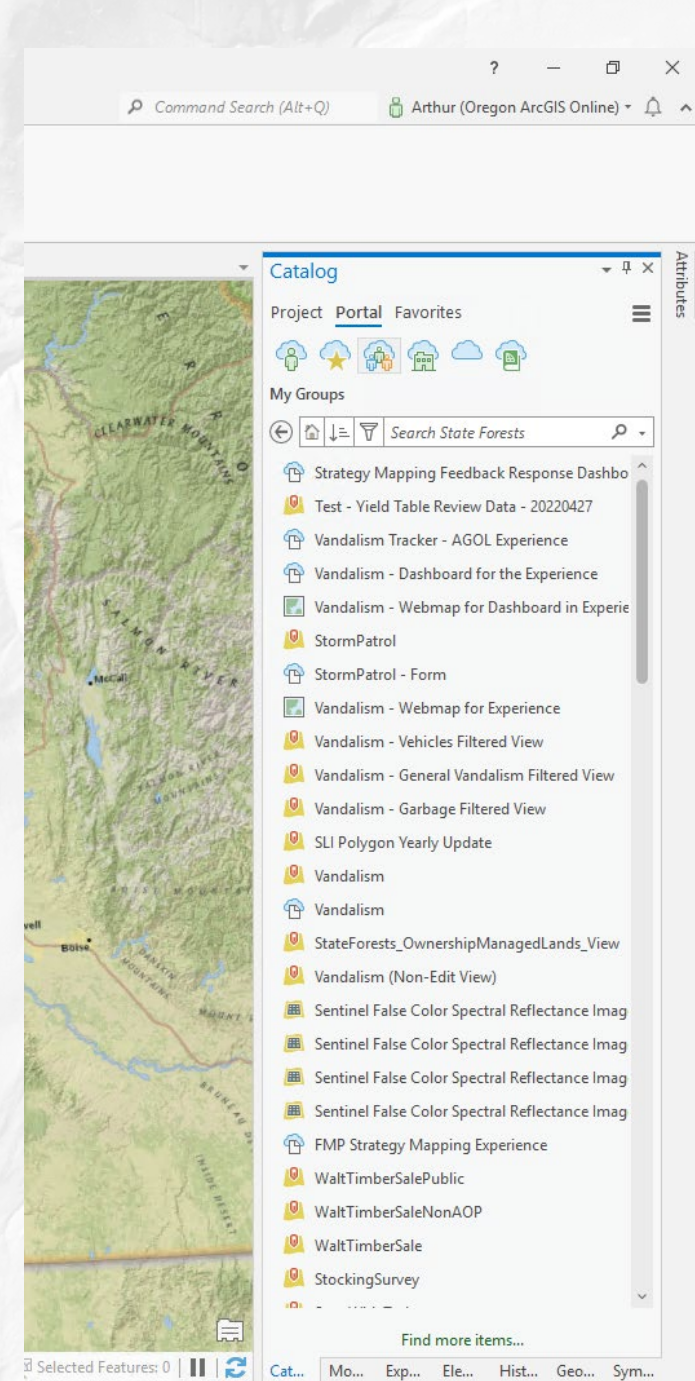
Beachie Creek Post Fire, High-res Imagery Mosaic Dataset

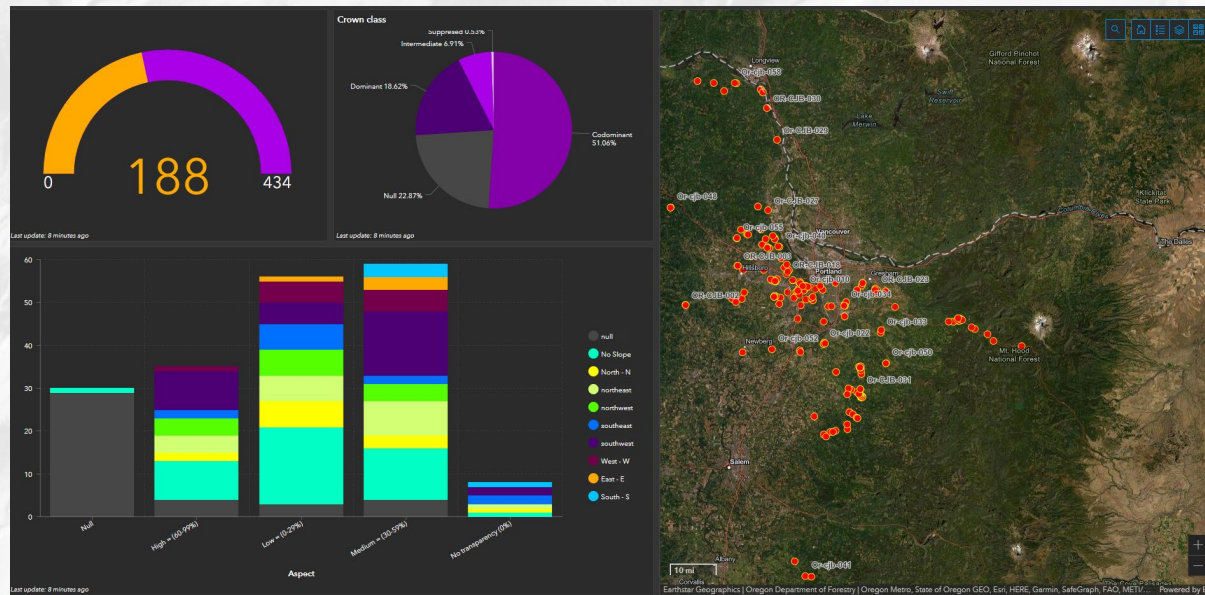
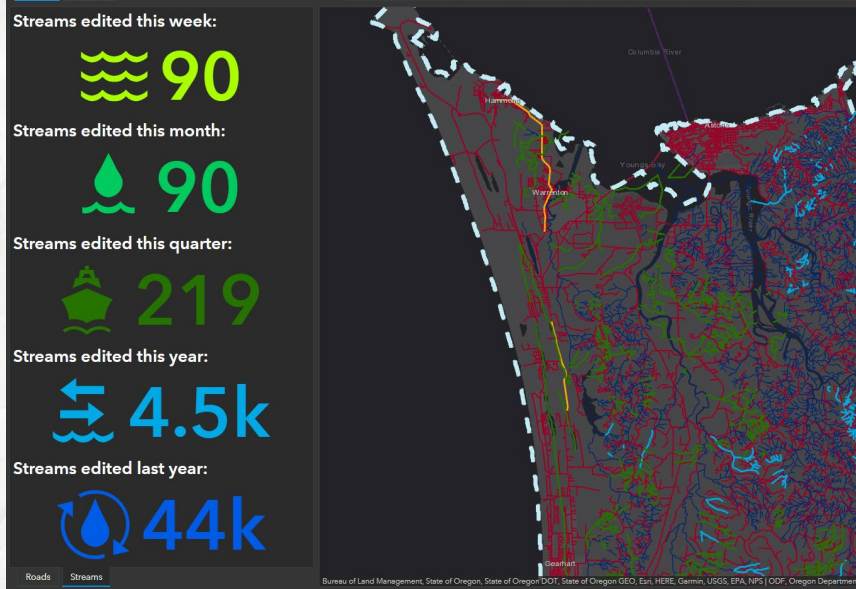
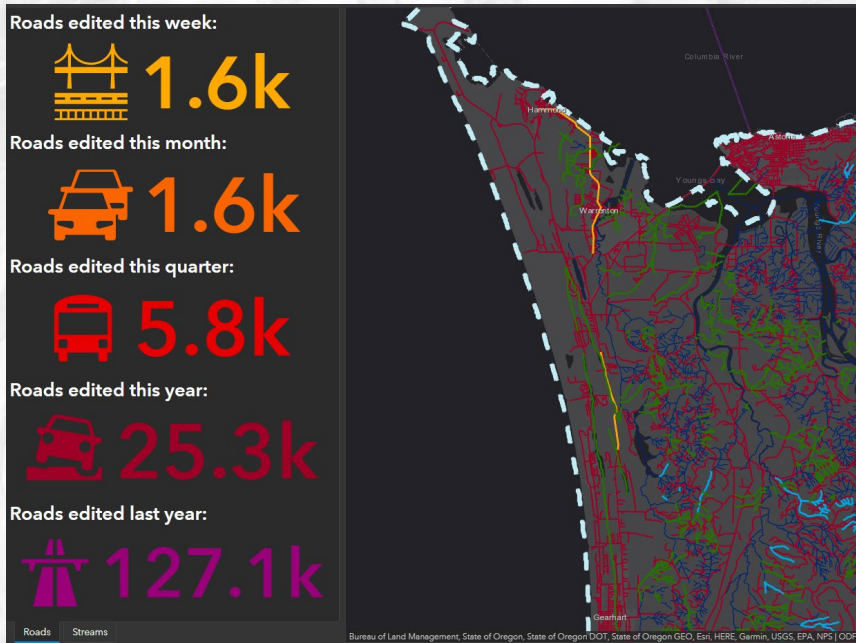


Sudden Oak Death Imagery

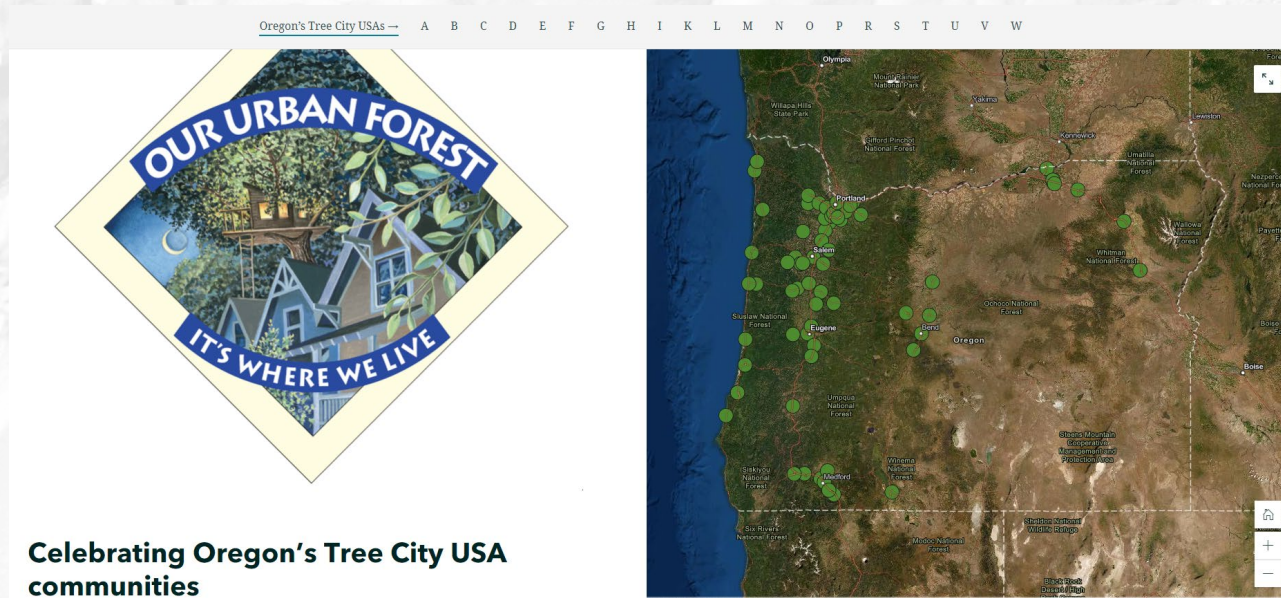
ArcGIS Online

- Content
 - Includes hosted and registered services
 - Services, Web Maps, Applications
 - Branding
- Groups
 - Agency → Program → Project
 - Collaborative decisions
 - Authoritative accounts
- Users
 - Publishers
 - Users
 - Viewers





Western Redcedar Dieback Dashboard



Edit Tracking Dashboards

Oregon's Tree City USA Communities Story Map

NIFC ArcGIS Online Collaboration

🔍 Search Settings

General

Home page

Gallery

Map

Items

Groups

Utility services

Member roles

New member defaults

Collaborations

Partnered

Partnered collaborations allow ArcGIS Online organizations to work closely and securely with each other in groups. In order to work in this way, you must establish a partnered collaboration with each organization.

[Learn more about partnered collaborations.](#)

[Start a collaboration](#)

[Review collaboration requests](#) 1

Existing collaborations



National Interagency Fire Center

👤 2



NIFC ArcGIS Online Collaboration



Protection - Initial Attack ACTIVE INCIDENTS

[Leave group](#)

Owner: [Fire.Protection_ODF](#)

Created: Apr 5, 2021 Last updated: Mar 17, 2022 Viewable by: Group members

Partnered

ACTIVE INCIDENTS ONLY - Editable web maps for offline use in support of Oregon Department of Forestry initial attack. Intended for District protection resources that are willing & able to contribute data editing during initial attack.



Protection - Initial Attack ACTIVE INCIDENTS VIEWER

[Leave group](#)

Owner: [Fire.Protection_ODF](#)

Created: Jun 3, 2021 Last updated: Jun 3, 2021 Viewable by: Group members

Partnered

ACTIVE INCIDENTS ONLY - View Only web maps for offline use in support of Oregon Department of Forestry initial attack. Intended for District protection resources that do not wish to contribute to data editing during initial attack.



Protection - Initial Attack TRAINING

[Leave group](#)


Owner: [Fire.Protection_ODF](#)

Created: Apr 6, 2021 Last updated: Jun 3, 2021 Viewable by: Group members


Partnered


TRAINING ONLY - Editable web maps for offline use in support of Oregon Department of Forestry initial attack training. Intended for District protection resources that are willing & able to contribute data editing during initial attack.


NIFC ArcGIS Online Collaboration

Protection - Initial Attack ACTIVE INCIDENTS 


Overview Content Members Settings


 Edit thumbnail



ACTIVE INCIDENTS ONLY - Editable web maps for offline use in support of Oregon Department of Forestry initial attack. Intended for District protection resources that are willing & able to contribute data editing during initial attack.  Edit

owned by [Fire.Protection_ODF](#)

 Partnered

Description 

DO NOT SHARE INCIDENT DATA PUBLICLY. CONTENT SHARED TO THIS GROUP IS FOR ACTIVE INCIDENTS ONLY.


This is a project level group managed by the Oregon Department of Forestry. Project level groups contain editable feature service views that have been configured for offline use. All members of this group have editing privileges to the content shared herein.


All initial attack data are stored and edited and in a single initial attack web map named ODF Incidents 2021. The authoritative content for ODF Initial attack is owned by Fire.Protection_ODF and shared to this group. Do NOT create a new web map for each incident. The initial attack web map uses editable points and lines feature classes from the National Incident Feature Service (NIFS). Initial attack fire polygons are editable. However, those polygons are sourced from ODF's enterprise GIS data rather than the NIFS.



The initial attack web map is not intended to be used for long term data storage.



The goals of this group follow:

- To improve situational awareness and improve information exchange between the field and office during the initial attack of an emerging wildfire incident
- To promote data quality on incident maps by encouraging continuity of information between field resources and Situation Unit prior to team transition
- To promote consistency between ODF wildfire mapping and NWCG GeoOps mapping standards, working toward standardized mapping that can easily scale up/down and transfer between local command, ODF incident management team command, and interagency unified command.
- To provide tools for ODF Salem staff to better assist District staff with wildfire mapping both remotely from Salem and on-site at ICP.

 Invite users



 Add items to group




 Create Web App 


 Membership requests 


Details


Created: April 5, 2021
Viewable by: **Only group members**
Contributors: **Only group owner and managers**
Members list: **Visible to all group members**


 139  6


  

Owner  Change owner

 Fire.Protection_ODF

Membership  Leave group

 You are a group manager

Tags 

[ODF, Oregon Department of Forestry, Protection, Initial Attack, IA, 100](#)

NIFC ArcGIS Online Collaboration

1 - 6 of 6

- ACTIVE INCIDENTS ODF Incidents 2022**
Web Map by Fire.Protection_ODF
THIS MAP IS INTENDED FOR USE DURING FIRE SEASON 2022 - ACTIVE INCIDENTS ONLY - Editable web maps for offline use in support of Oregon Department of Forestry initial attack.
Created: Jan 25, 2022 Updated: Mar 15, 2022 View Count: 304
Authoritative
- Bootleg Structure Triage**
Form by khansen15_srlc
***Hosted** National Incident Feature Service based on NWCG data standard for wildland fire events. This feature service includes field editable feature categories for Structure Triage. Use in the Survey123 mobile app.
Created: Jul 27, 2021 Updated: Jul 27, 2021 View Count: 23
- Field notes**
Feature Layer by Oregon_ODF
Use the Field Notes to capture simple observations, required data edits, or simple reminders.
Created: Apr 25, 2017 Updated: May 6, 2021 View Count: 27,078
Authoritative
- Incident (FLAMES)**
Feature Layer by Oregon_ODF
Location of incidents dispatched in the FLAMES software program.
Created: May 3, 2018 Updated: Mar 15, 2022 View Count: 30,072
Authoritative
- National Incident FS Mobile Edit Service**
Feature Layer by NIFC_Authoritative
National Incident Feature Service for use in Mobile Data Collection, Open in Map Viewer, not Map Viewer Classic.
Created: Dec 20, 2021 Updated: Mar 4, 2022 View Count: 364,852
- National Incident FS Structure Triage Mobile Edit Service (National Incident Feature Service 2022)**
Feature Layer by NIFC_Authoritative
This feature service includes field editable feature categories for Structure Triage.
Created: Jun 19, 2020 Updated: Jan 3, 2022 View Count: 143,175

ACTIVE INCIDENTS ODF Incidents 2022

Overview Usage Settings

Open in Map Viewer

- Open in ArcGIS Desktop
- Create Presentation
- Open in Field Maps
- Create Web App
- Share
- Metadata

Description

FOR USE WITH ACTIVE ODF INCIDENTS ONLY

****Do not share this data Publicly****

This is an offline capable web map containing editable hosted feature services intended to be distributed to mobile editors on active ODF incidents prior to IMT transition.

This web map is populated with the Mobile Edit service, part of the National Incident Feature Services. After team transition, GIS Specialists should continue editing the National Incident Feature Service using the GISS Edit service. Only those with the GISS Role are able to access the GISS Edit service.

Be advised that fire polygons collected in this app are not publicly viewable in third party applications (e.g., Interra and Inciweb) until an IRWIN ID is associated with the polygon. A qualified GIS Specialist can add an IRWIN ID to the fire polygon to distribute the polygon to public facing websites.

This map feature service contains simplified line symbols and should not be used for printed incident maps. This map is used by all incidents simultaneously - care should be taken to not impact other incident data.

This feature services that populate this map is based on the National Wildfire Coordinating Group (NWCG) data standard for Wildland Fire Event. The Wildland Fire Event data standard defines the minimum attributes necessary for collection, storage and dissemination of incident-based data on wildland fires (wildfires and prescribed fires). The standard is not intended for long term data storage, rather a standard to assist in the creation of incident-based data management tools, minimum standards for data exchange, and to assist users in meeting NWCG Standards for Geospatial Operations (GeoOps).

Please note that there are still a few differences between the National Incident Feature Service and the standard symbology due to display limitations.

Item Information

Low High

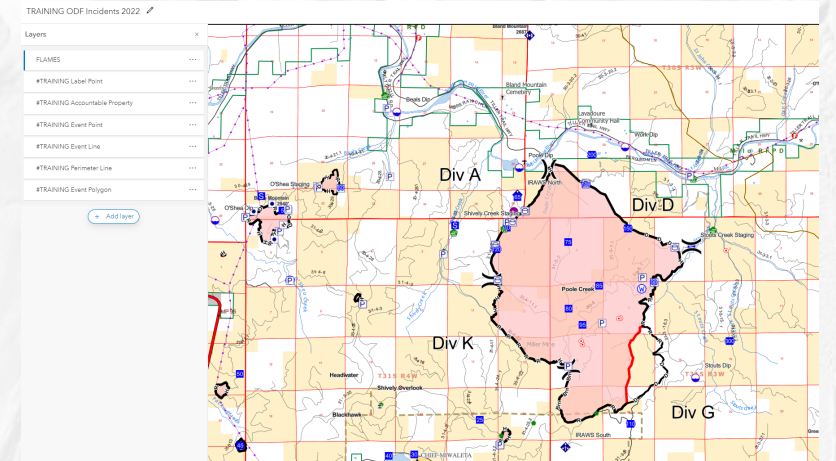
Details

Size: 12 kb

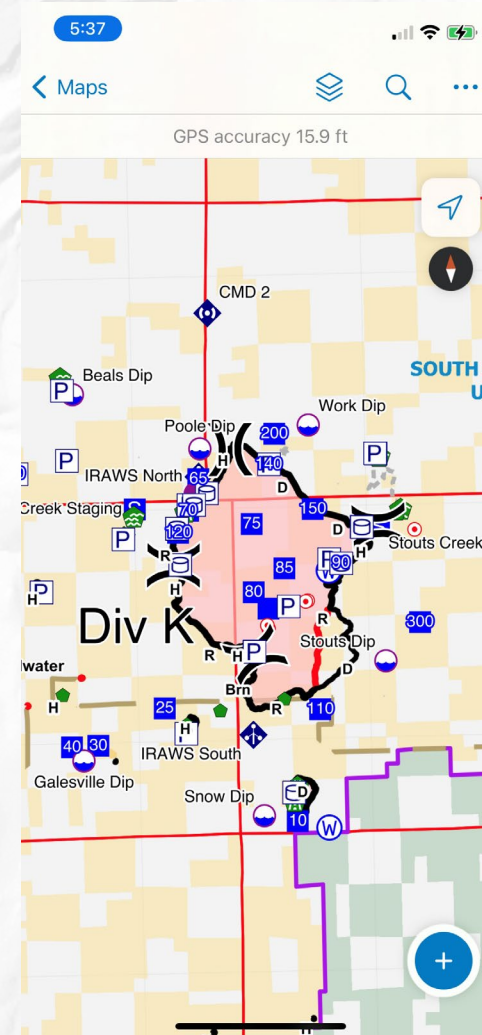
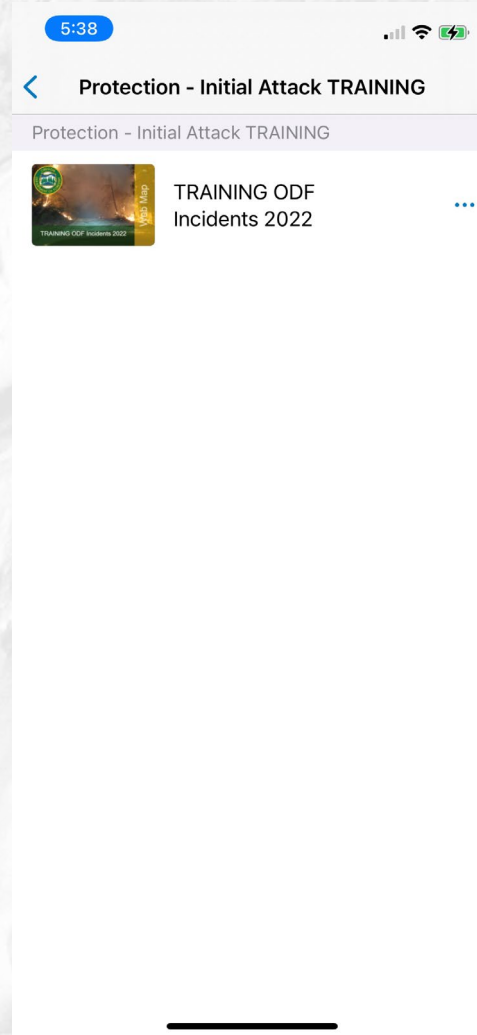
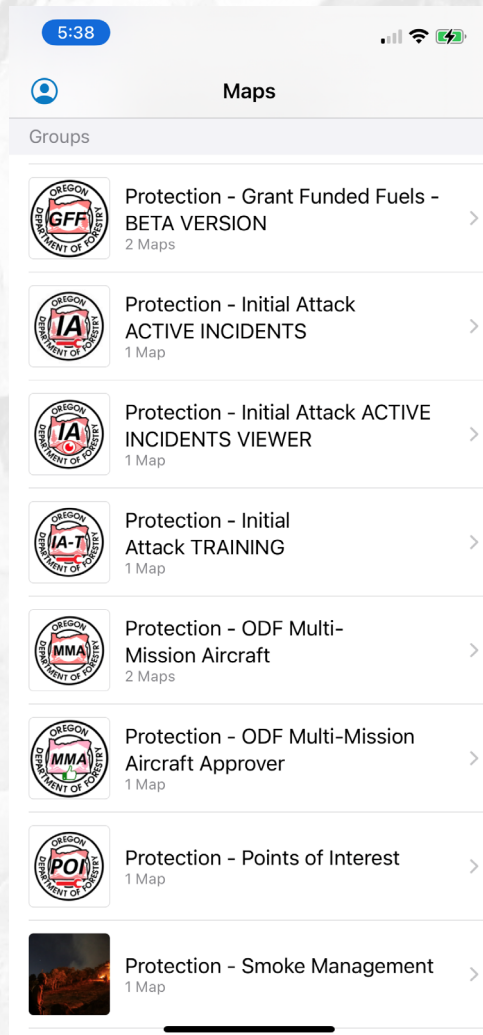
Share

Owner: Fire.Protection_ODF

Folder



NIFC ArcGIS Online Collaboration



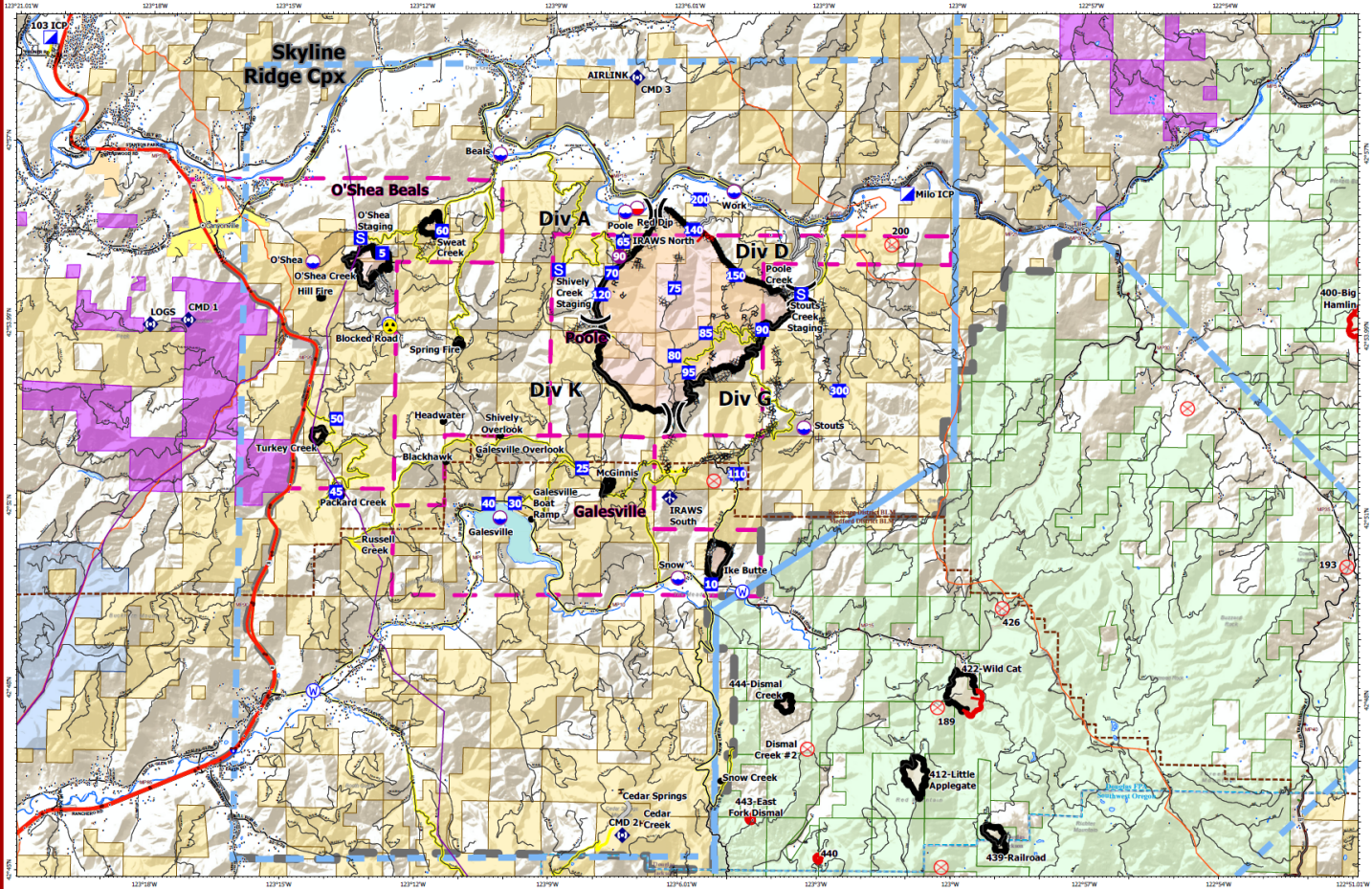
NIFC ArcGIS Online Collaboration

Briefing Map

Skyline Ridge Complex OR732S000174

August 19, 2021

August 19, 2021
OR732S000174
Skyline Ridge Complex
Briefing Map



0 1 2 4 Miles

5,760 acres at 8/15/2021 @ 0940

- Fire Area
- Completed Dozer Line
- Completed Hand Line
- Completed Mixed Construction Line
- Completed Road as Line
- Access or Improved Road
- Fire Edge
- Contained Line
- Dip Site
- Mobile Retardant Base
- Hotspot
- Division Break
- Incident Command Post
- Drop Point
- Staging Area
- Fire Origin
- Mobile Weather Unit
- Repairer
- Hazard
- Water Source
- Structures
- Travel Route
- Interstate, Highway
- Paved
- All weather
- BLM Districts
- ODF Forest Protection Districts
- Natural Gas Pipelines
- Complex Area
- Fire Area
- TFR

ODF Team 1 010
08/10/2021 1744
Acreage from IRI and GPS
North American 1983 Datum, Spheroid Only

ODF Oregon Department of Forestry

ODF Hub

- [ODF Hub](#)

Goals and Challenges



Implementing new technology while maintaining existing systems



Maintaining clear documentation and streamlined workflows



Dynamically respond to requests and reduce duplication of efforts



Working towards ODF Portal

Thank you....

- GIS Unit:

Brent Grimsrud, Carl Swanson, Chauncey Smith

- Brian Locke, ODF GIS Application Developer
- Blake McKinley, State Forests GIS Coordinator
- Chloe Lindgren, Southwestern Oregon GIS Coordinator