

Oregon Sage-Grouse Conservation Partnership (SageCon)

Web Tools for Sage-Grouse Planning

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Decision Support Tools Workshop

November 7, 2017



Introduction

- Sage-Grouse Conservation Partnership (SageCon) – collaborative group to address threats to sage-grouse in Oregon
- 2010-2015 – Sage-Grouse Action Plan development
- Emphasis on a coordinated approach - All Lands, All Threats
- Oregon Decision Support System for Sagebrush Steppe (ORDSS)
 - Central role in the Action Plan to coordinate data sharing and implementation planning
 - As we are implementing the Action Plan, it has formed into specific tools
- Geographically focused on Oregon, geared toward sage-grouse

SageCon Web Tools in Development

1. Development Siting Tool

- Help developers minimize impacts to sage-grouse habitat
- Project-specific siting information and contacts
- Status: Beta version

2. Sage-Grouse Data Viewer

- Provide sage-grouse data and themes in a single place
- View data in web tool or download for further analysis
- Status: Initial version complete

3. Restoration Planning Tool

- Support strategic restoration planning across ownership boundaries
- Support mitigation credit siting as a complement to the Development Siting Tool
- Status: Scoping

Sage-Grouse Development Siting Tool

Web tool to assist developers in avoiding important sage-grouse habitat and minimizing their mitigation burden

The screenshot displays the Sage-Grouse Development Siting Tool interface. At the top, the header includes the "OREGON EXPLORER" logo, the tool title "Sage-Grouse Development Siting Tool", and the subtitle "Sage-Grouse Mitigation Planning". A search bar and accessibility icons are also present.

The main interface is divided into a left sidebar and a central map area. The sidebar, titled "Layers", contains a "Filter Layers..." section with a "Filter" button. Below this, several layers are listed with checkboxes and information icons:

- Relative Mitigation Estimate
- Mitigation Data Input
 - Development Impacts
 - Estimated Ecological States
 - Management Designations
- Reference
 - Priority Areas for Conservation (PACs)
 - Low Density Habitat
 - Counties in SageCon Planning Area
 - BLM Districts
- Land Management/Ownership
- SageCon Planning Area Boundary
- Public Land Survey System (PLSS) (Framework)
- Basemaps

The central map area shows a topographic map of Oregon with county boundaries and various layers overlaid. A red dashed outline highlights the "SageCon Planning Area Boundary". A red button labeled "I want to..." is positioned above the map. The map includes labels for counties (CROOK COUNTY, DESCHUTES COUNTY, LAKE COUNTY, HARNEY COUNTY, MALHEUR COUNTY, UNION COUNTY, BAKER COUNTY) and cities (Bend, Madras, Prineas, Burns, Hines). National Forests (Ochoco, Malheur, Fremont, Wheeler) and the Mt. Antelope Refuge are also labeled. A scale bar at the bottom indicates 0, 20, and 40 km. The bottom left corner features "Home" and "Layers" buttons, and the bottom right corner has "Basemaps" and a scale indicator.

Sage-Grouse Development Siting Tool

Web tool to assist developers in avoiding important sage-grouse habitat and minimizing their mitigation burden



Primary Objectives:

1. Provide information about the sage-grouse mitigation program
2. Provide contact information and encourage developers to consult ODFW and permitting agencies early in the process
3. Visually evaluate the relative sage-grouse mitigation burden across eastern Oregon
4. Allow comparison of potential project locations to minimize impact and mitigation responsibility



Sage-Grouse Development Siting Tool

Web tool to assist developers in avoiding important sage-grouse habitat and minimizing their mitigation burden

Primary Functions:

1. View spatial data relevant to mitigation
2. Generate a project-specific report

Audience:
Developers, planners

1. Visualize Spatial Data Relevant to Mitigation

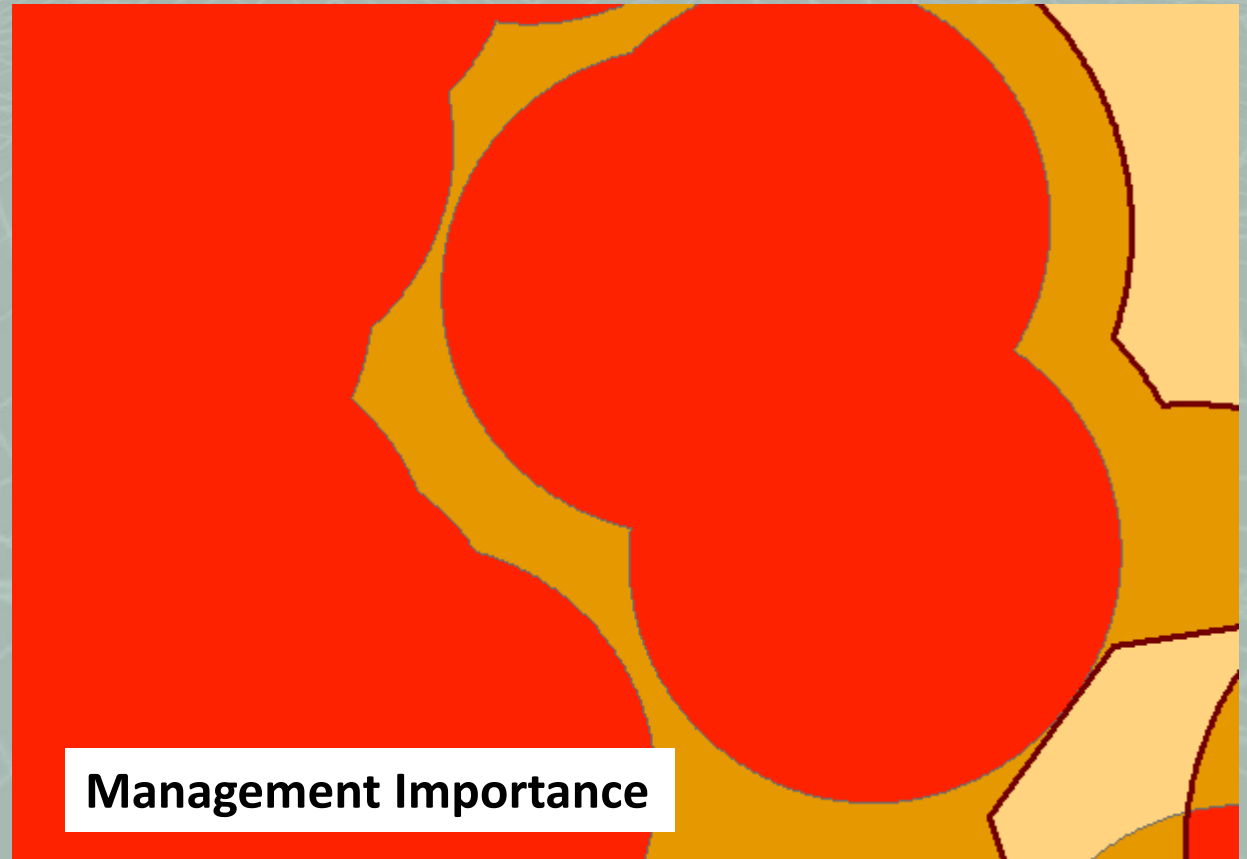
Relative Mitigation Estimate

Mitigation Data Input

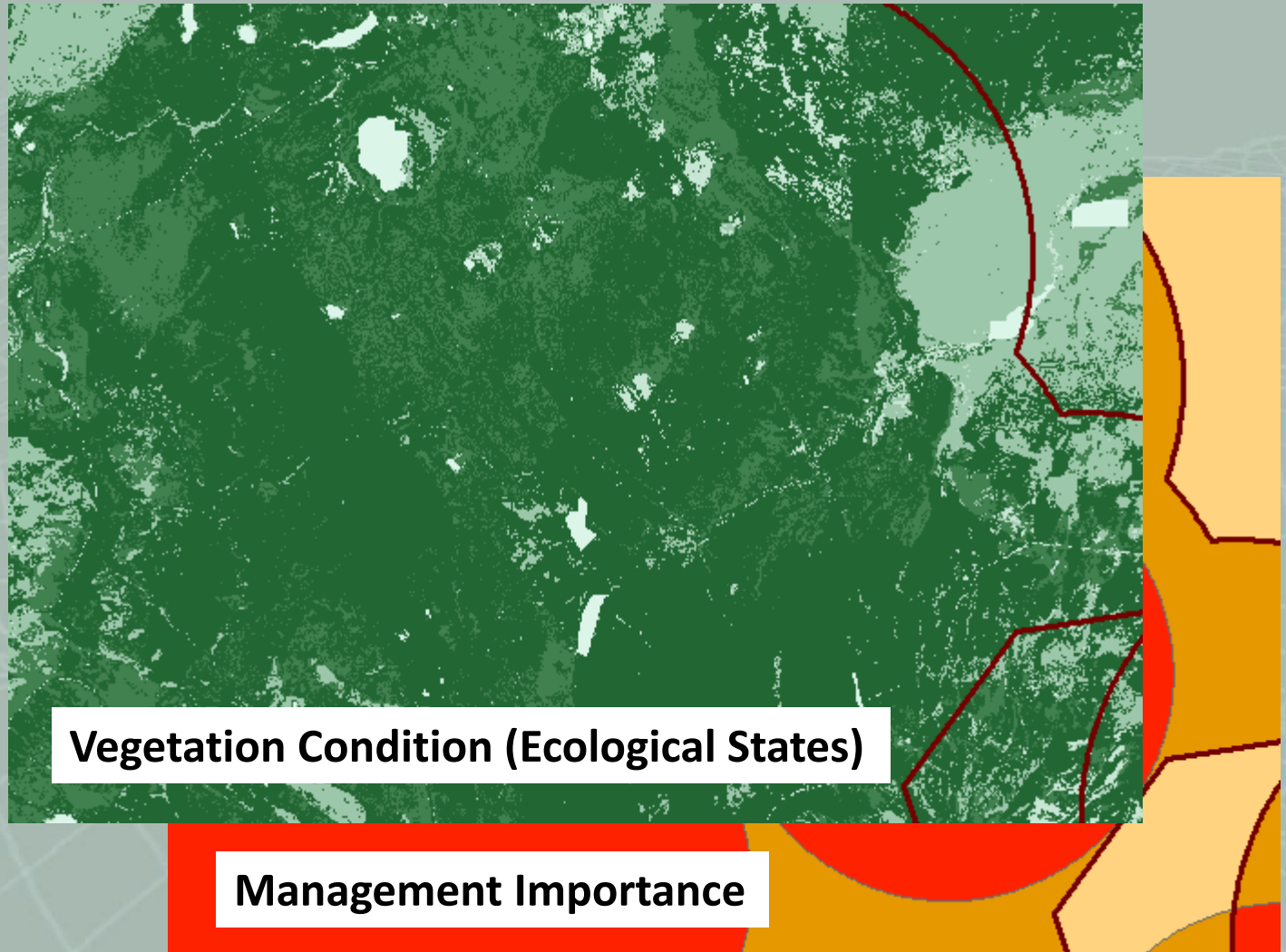
Development Impacts

Estimated Ecological States

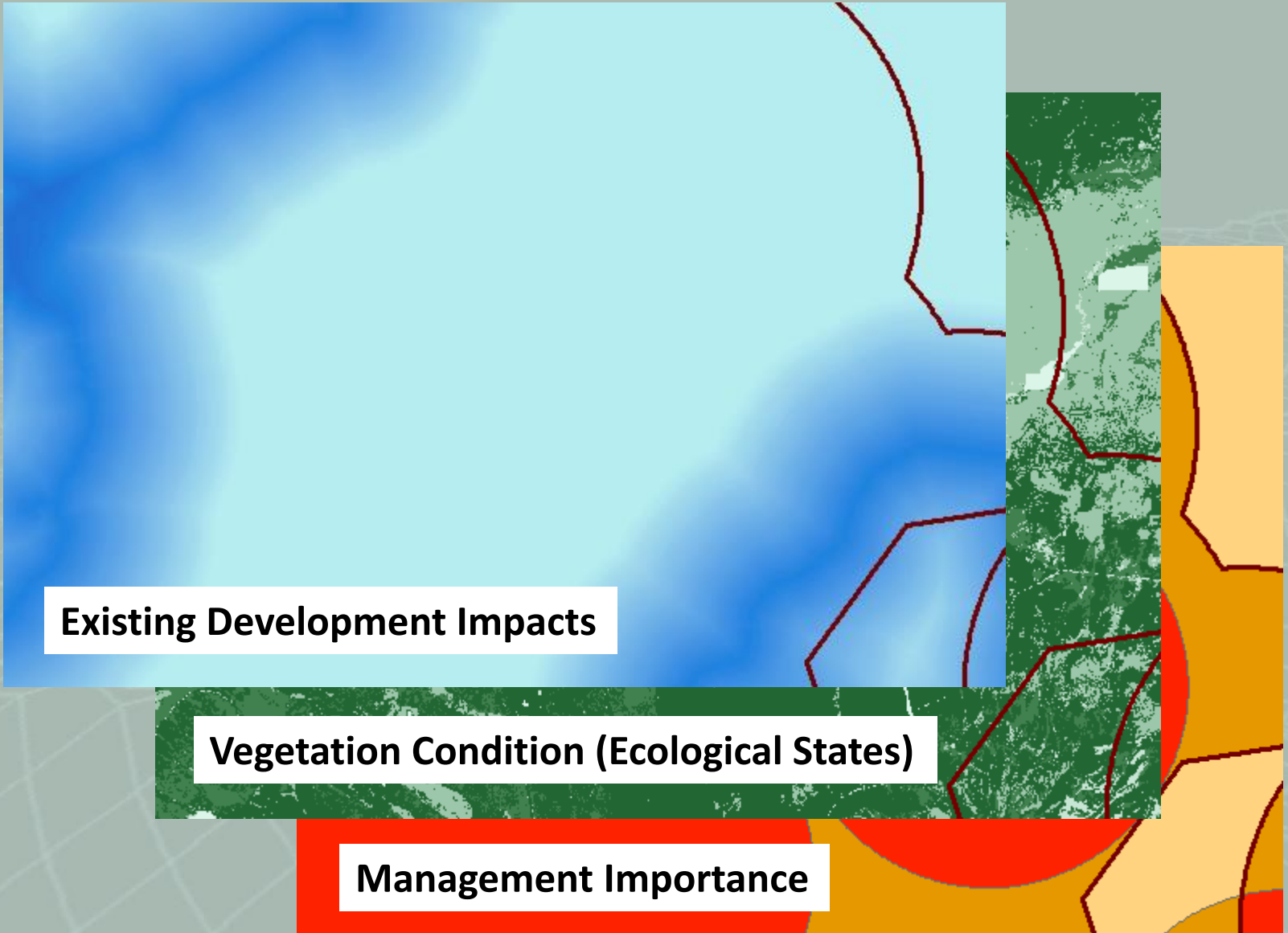
Management Designations



1. Visualize Spatial Data Relevant to Mitigation



1. Visualize Spatial Data Relevant to Mitigation



1. Visualize Spatial Data Relevant to Mitigation



Relative Mitigation Estimate

Existing Development Impacts

Vegetation Condition (Ecological States)

Management Importance

2. Generate Project-Specific Report

OREGON EXPLORER Sage-Grouse Development Siting Tool
Sage-Grouse Mitigation Planning

File Find Layer Create & Share Analysis

Home Pan Identify Bookmarks Plot Coordinates Get development siting info Chart Test

Development Siting Information

Project Name: Test Project

Development Type * <-- Select Development Type-->

Potential Development

Choose how to design

Draw on map

Upload zipped s

- <-- Select Development Type-->
- Coal Mine
- Geothermal
- Hydroelectric
- Military
- Mining**
- Nuclear
- Oil and Gas
- Pipeline
- Powerline - Above 200kV
- Powerline - Below 200kV
- Railroad
- Recreation
- Road
- Solar
- Tar Sands
- Tower
- Wind

I want to...

Warners PAC

LAKE COUNTY

2. Generate Project-Specific Report


Estimated Mitigation Report

Summary

Project Name: Test1
Development Type: Mining

[Full PDF Report](#) [Download Shapefiles](#)

Compensatory Mitigation



Compensatory Mitigation Estimate: 42

Area

Direct Project Area: 75 Acres
Buffered Area: 22,185 Acres
Buffered to 5 km
Non-Habitat in buffered area: 235 Acres

Habitat

Habitat Designations: core habitat
Within 3.1 miles of a Lek? True

Land management/ownership

, Federal (BLM), Private

Contact Information

County: Crook


Estimated Mitigation Report

Summary

Project Name: Test2
Development Type: Mining

[Full PDF Report](#) [Download Shapefiles](#)

Compensatory Mitigation



Compensatory Mitigation Estimate: 19

Area

Direct Project Area: 74 Acres
Buffered Area: 22,185 Acres
Buffered to 5 km
Non-Habitat in buffered area: 1,338 Acres

Habitat

Habitat Designations: low density habitat, core habitat
Within 3.1 miles of a Lek? False

Land management/ownership

Federal (BLM), Federal (USFS), State Government, Private

Contact Information

County: Crook

Sage-Grouse Data Viewer and Restoration Tool

Web tool to view and explore sage-grouse data in Oregon

Upcoming web tool to aid in restoration planning

The screenshot displays the Sage-Grouse Data Viewer interface. At the top left, the 'OREGON EXPLORER' logo is visible. The main header features the 'Sage-Grouse Data Viewer' title and the subtitle 'Find and download data'. A search bar with the placeholder text 'Search...' and a magnifying glass icon is located on the right. Below the header, a 'Layers' panel on the left lists various data layers. The 'Base Sage-Grouse Data' section is expanded, showing several layers with checkboxes and expandable arrows. The main map area displays a topographic map of Oregon with red dashed outlines indicating Priority Areas for Conservation (PACs). The map includes labels for various locations and national forests, such as Ochocho National Forest, Malheur National Forest, and Hart Mountain National Antelope Refuge. A 'Tools' icon is visible in the top right corner of the map area.

Layers

Filter Layers...

- Sage-Grouse Habitat Viability Theme
- Fire and Invasives Threat Theme
- Sage Steppe Biodiversity Theme
- Energy Development Potential Themes
- Vegetation Condition
- Sage-Grouse Seasonal Habitat Maps
- Sage-Grouse Habitat Connectivity
- Previous and Current Wildfires
- Base Sage-Grouse Data
 - Priority Areas for Conservation (PACs) >
 - Low Density Habitat >
 - Oregon Counties with Sage-Grouse Habitat >
 - SageCon Planning Area Boundary >
 - Sage-Grouse Action Areas in Oregon >
 - Sage-Grouse Management Zones >
 - Sage-grouse Population Boundaries in Oregon >

http://tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=sagegrouse



Layers



I want to...

Filter Layers...



Filter

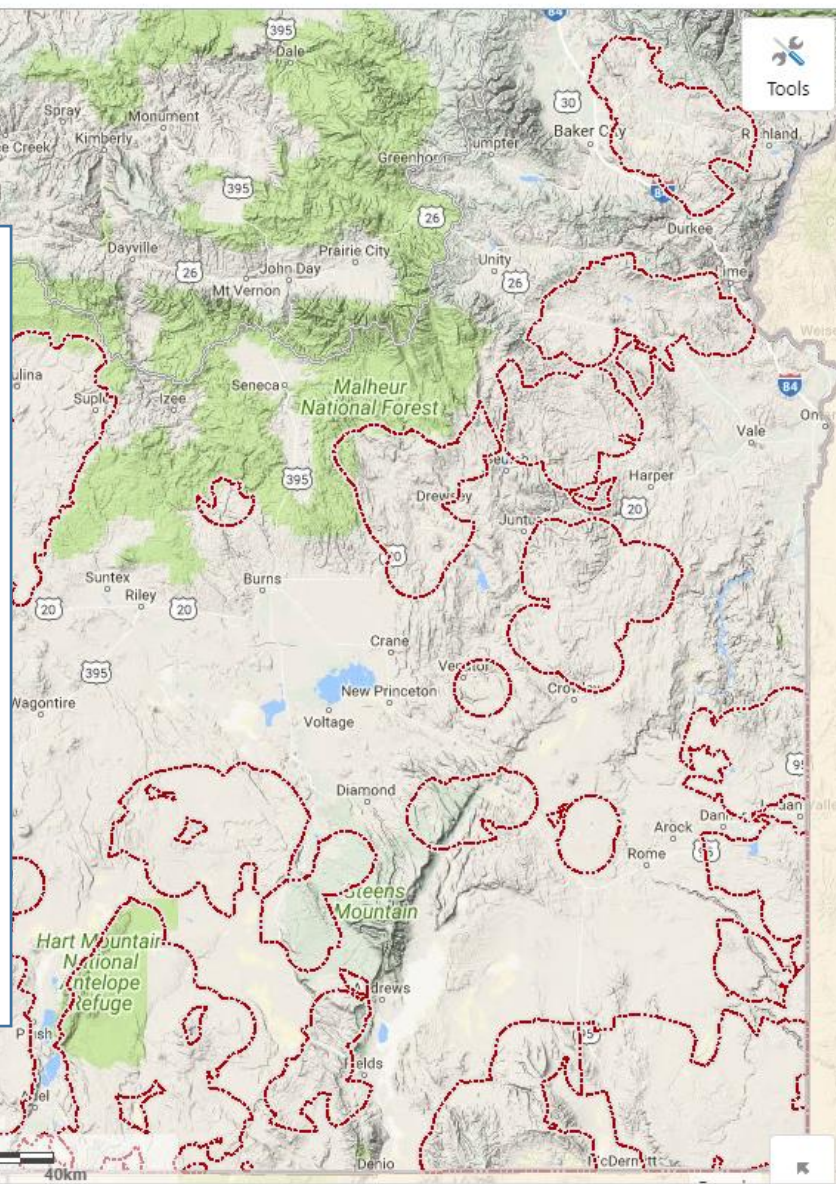
 Sage-Grouse Habitat Viability Theme

Primary Objectives:

1. An Oregon-specific tool that makes mid-fine scale, sage-grouse relevant, spatial information easily accessible from a single location
2. Provide ORDSS data and themes referenced in the state Action Plan

Future Objectives

1. Prioritize restoration actions at multiple scales





Layers



I want to...

- Sage-Grouse Habitat Viability Theme
- Fire and Invasives Threat Theme
- Sage Steppe Biodiversity Theme
- Energy Development Potential Themes
- Vegetation Condition
- Sage-Grouse Seasonal Habitat Maps
- Sage-Grouse Habitat Connectivity
- Previous and Current Wildfires
- Base Sage-Grouse Data
- Basemaps

ORDSS themes

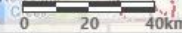


Tools

Land Management/Ownership (2015)



1:500





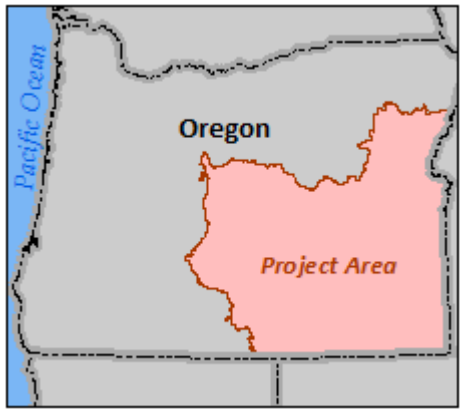
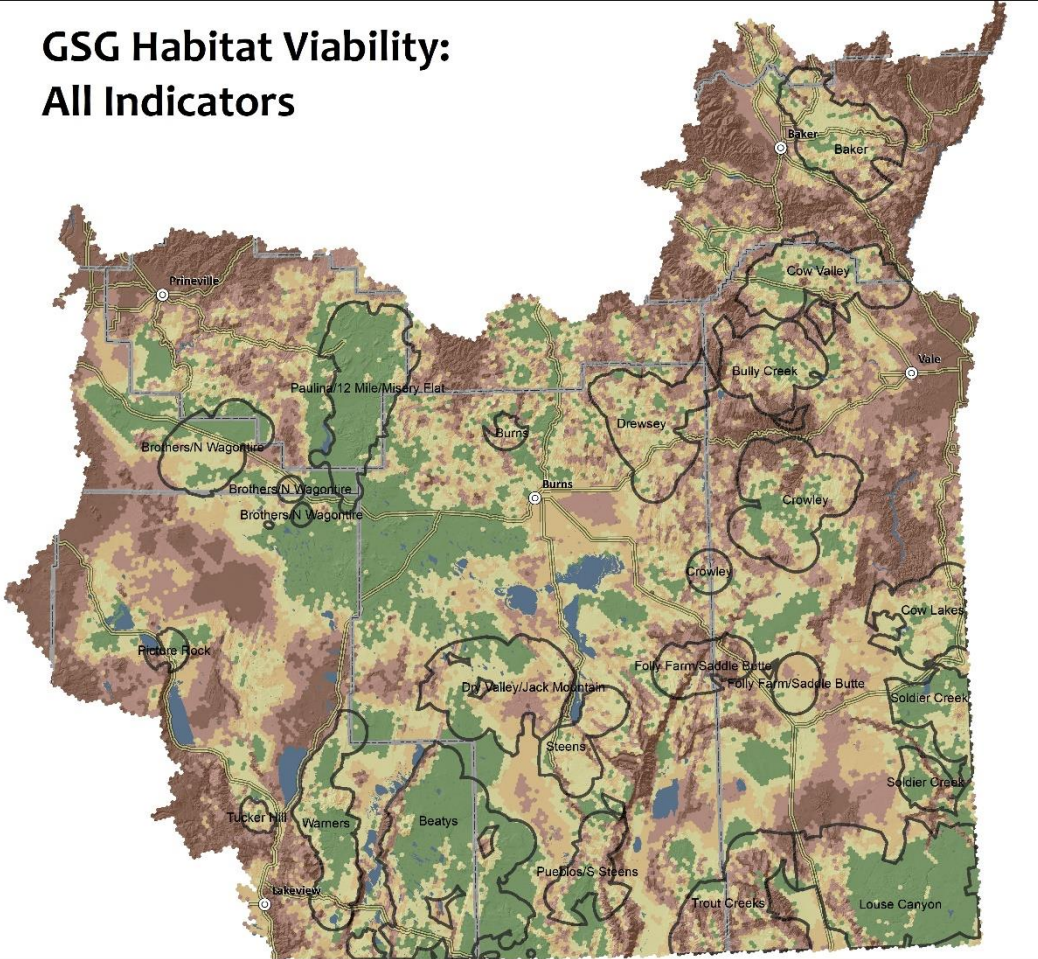
GSG Habitat Viability: All Indicators

Legend

- Cities
- Greater Sage-grouse PACs
- Counties
- Highways
- Waterbodies

GSG Habitat Viability

- Most Viable Habitat
- Least Viable Habitat





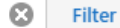
Layers



I want to...



Filter Layers...



Sage-Grouse Habitat Viability Theme

Habitat Viability Theme Score

Habitat Viability Theme Score

High Viability

Moderate-High Viability

Moderate Viability

Low-Moderate Viability

Low Viability

Habitat Viability Theme Indicator Data

Invasive Annual Grass Cover

Bare Ground Cover

Native Grass Cover

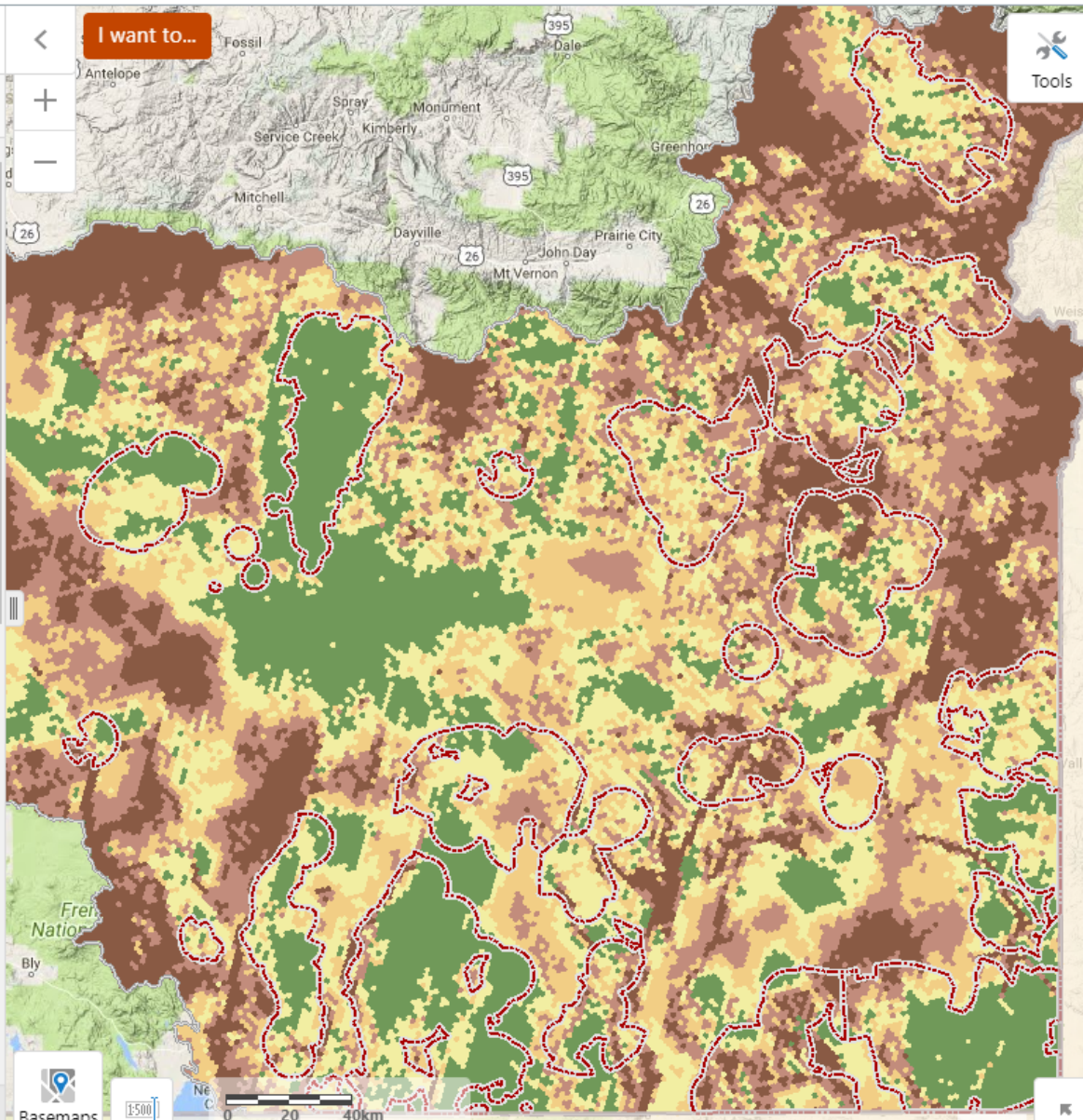
Sagebrush Canopy Cover

Sagebrush Landscape Cover

Tree Canopy Cover

Proximity to Water

Terrain Roughness Index





Layers



I want to...



Tools

Filter Layers...



Filter

Sage-Grouse Habitat Viability Theme

Fire and Invasives Threat Theme

Fire and Invasives Theme Score

Fire and Invasives Threat Theme Score

Low Threat

Low-Moderate Threat

Moderate Threat

Moderate-High Threat

High Threat

Threat Theme Indicator Data

Bare Ground Cover

Native Grass Cover

Maximum Temperature

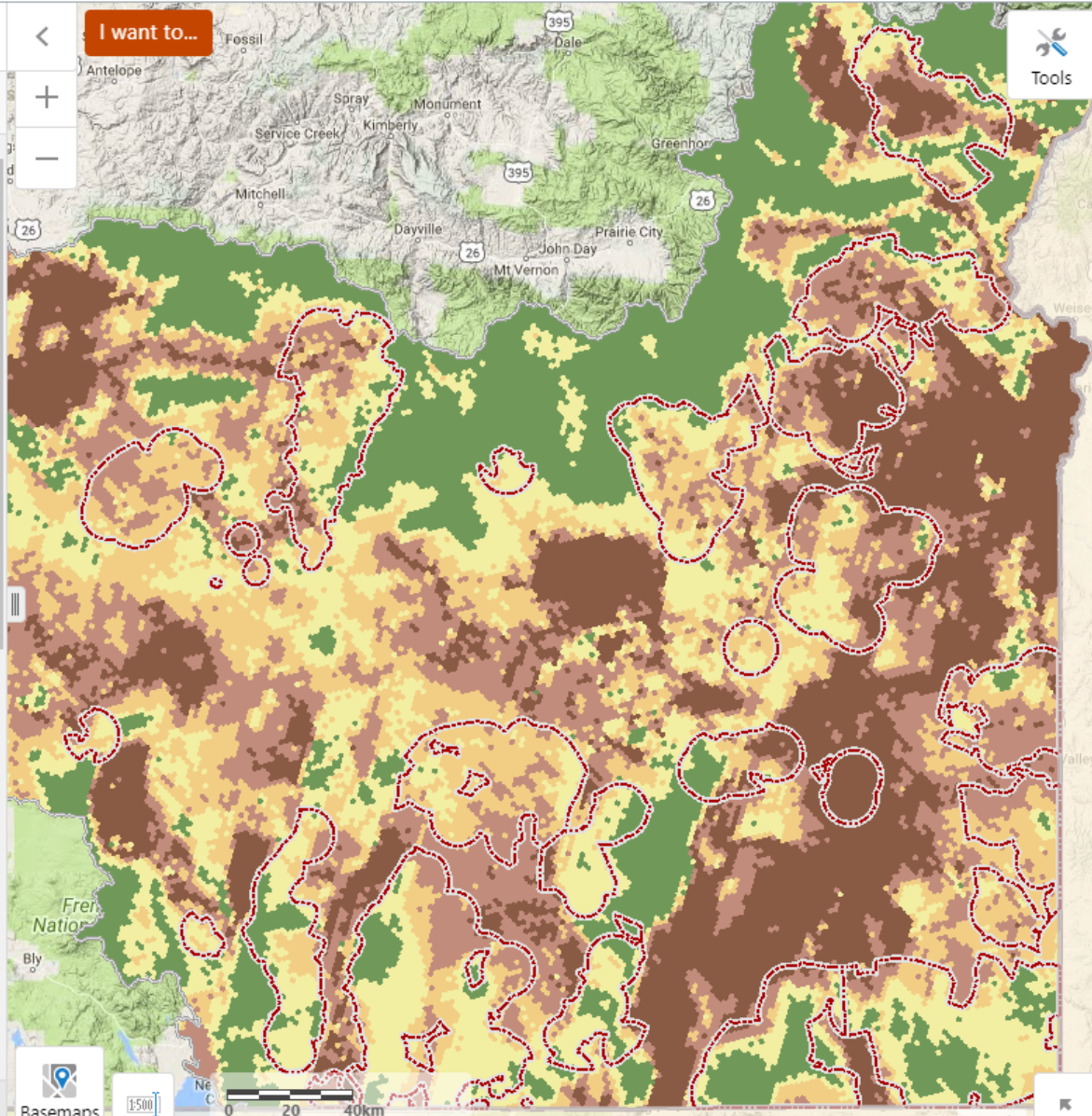
Mean Annual Precipitation

Wildfire Hazard Potential

Elevation

Sage Steppe Biodiversity Theme

Energy Development Potential Themes



1:5000





Layers

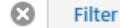


I want to...



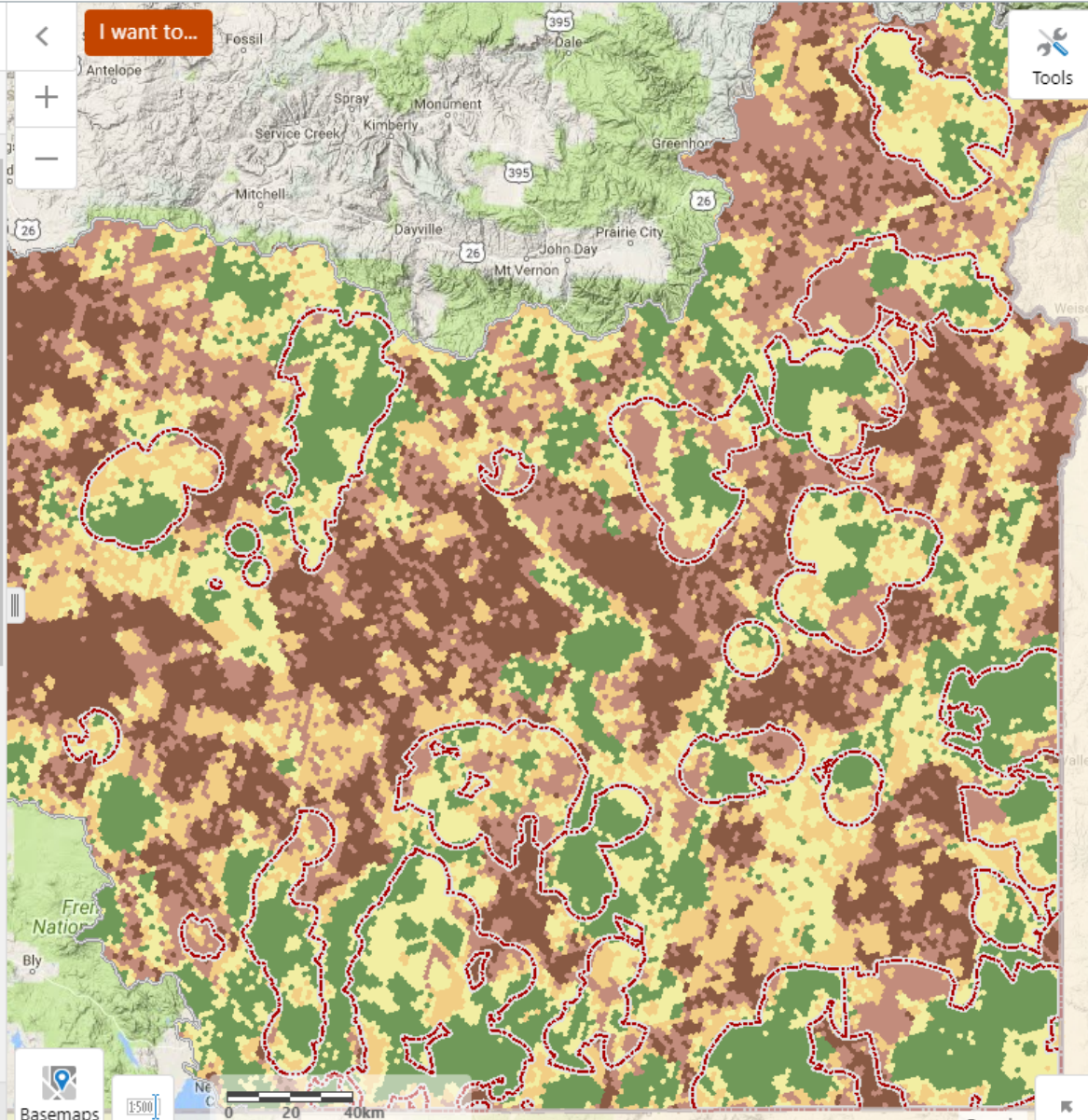
Tools

Filter Layers...



Filter

- Sage-Grouse Habitat Viability Theme
- Fire and Invasives Threat Theme
- Sage Steppe Biodiversity Theme
 - Biodiversity Co-Benefit Theme Score
 - Biodiversity Co-Benefit Theme Score
 - High Biodiversity
 - Moderate-High Biodiversity
 - Moderate Biodiversity
 - Low-Moderate Biodiversity
 - Low Biodiversity
 - Biodiversity Co-Benefit Indicator Data
 - Conservation Priority Areas (TNC)
 - Conservation Opportunity Areas (ODFW)
 - Crucial Habitat (WGA)
 - Conservation Irreplaceability Score (TNC)
 - Critical Habitat (USFWS)
- Energy Development Potential Themes
- Vegetation Condition



0 20 40km



Layers



I want to...



Tools

Filter Layers...

Filter

Sage-Grouse Habitat Viability Theme

Fire and Invasives Threat Theme

Sage Steppe Biodiversity Theme

Energy Development Potential Themes

Vegetation Condition

Sage-Grouse Seasonal Habitat Maps

Sage-Grouse Spring Habitat

Sage-grouse probably absent

Sage-grouse presence possible

Sage-grouse may be present

Sage-grouse likely present

Sage-grouse probably present

Sage-Grouse Summer Habitat

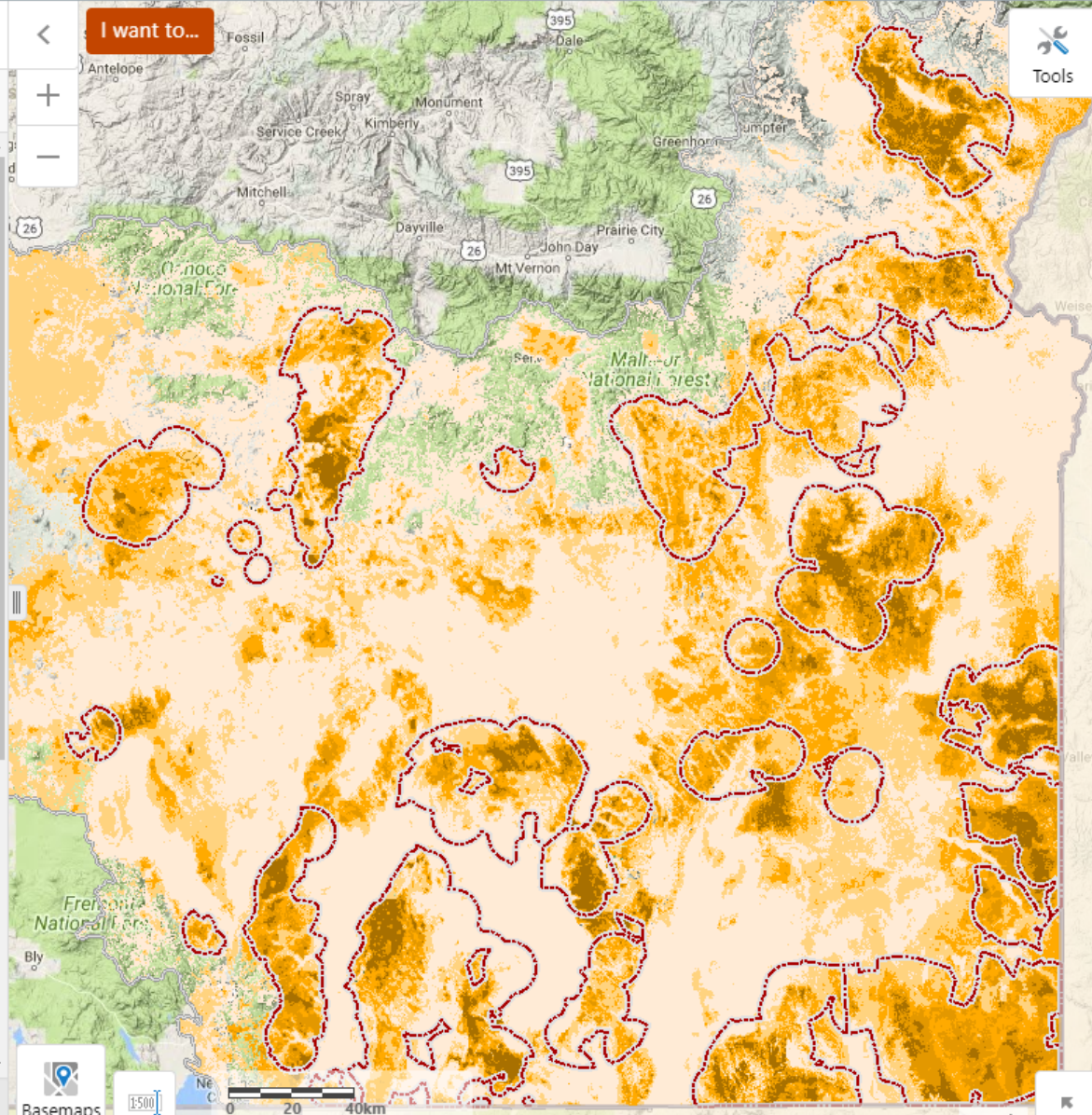
Sage-Grouse Winter Habitat

Sage-Grouse Habitat Connectivity

Previous and Current Wildfires

Base Sage-Grouse Data

Priority Areas for Conservation (PACs)





Layers



I want to...



Tools

Filter Layers...



Filter

Sage-Grouse Habitat Viability Theme

Fire and Invasives Threat Theme

Sage Steppe Biodiversity Theme

Energy Development Potential Themes

Vegetation Condition

Sage-Grouse Seasonal Habitat Maps

Sage-Grouse Habitat Connectivity

Connectivity Barriers

Connectivity Pinchpoints

Connectivity Linkage Robustness

Previous and Current Wildfires

Base Sage-Grouse Data

Priority Areas for Conservation (PACs)

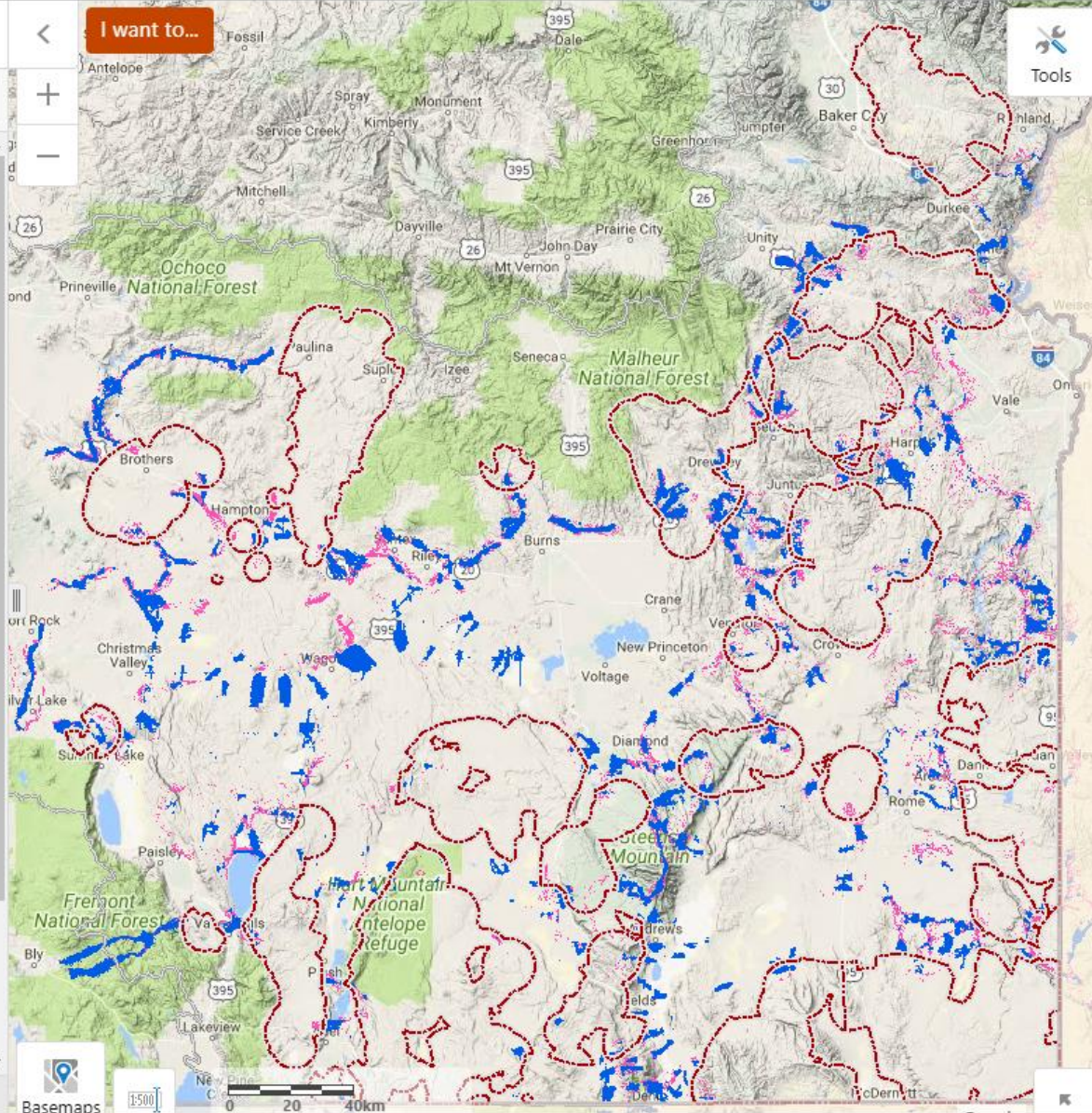
Low Density Habitat

Oregon Counties with Sage-Grouse Habitat

SageCon Planning Area Boundary

Sage-Grouse Action Areas in Oregon

Sage-Grouse Management Zones





Layers



Filter Layers...



Filter

Previous and Current Wildfires

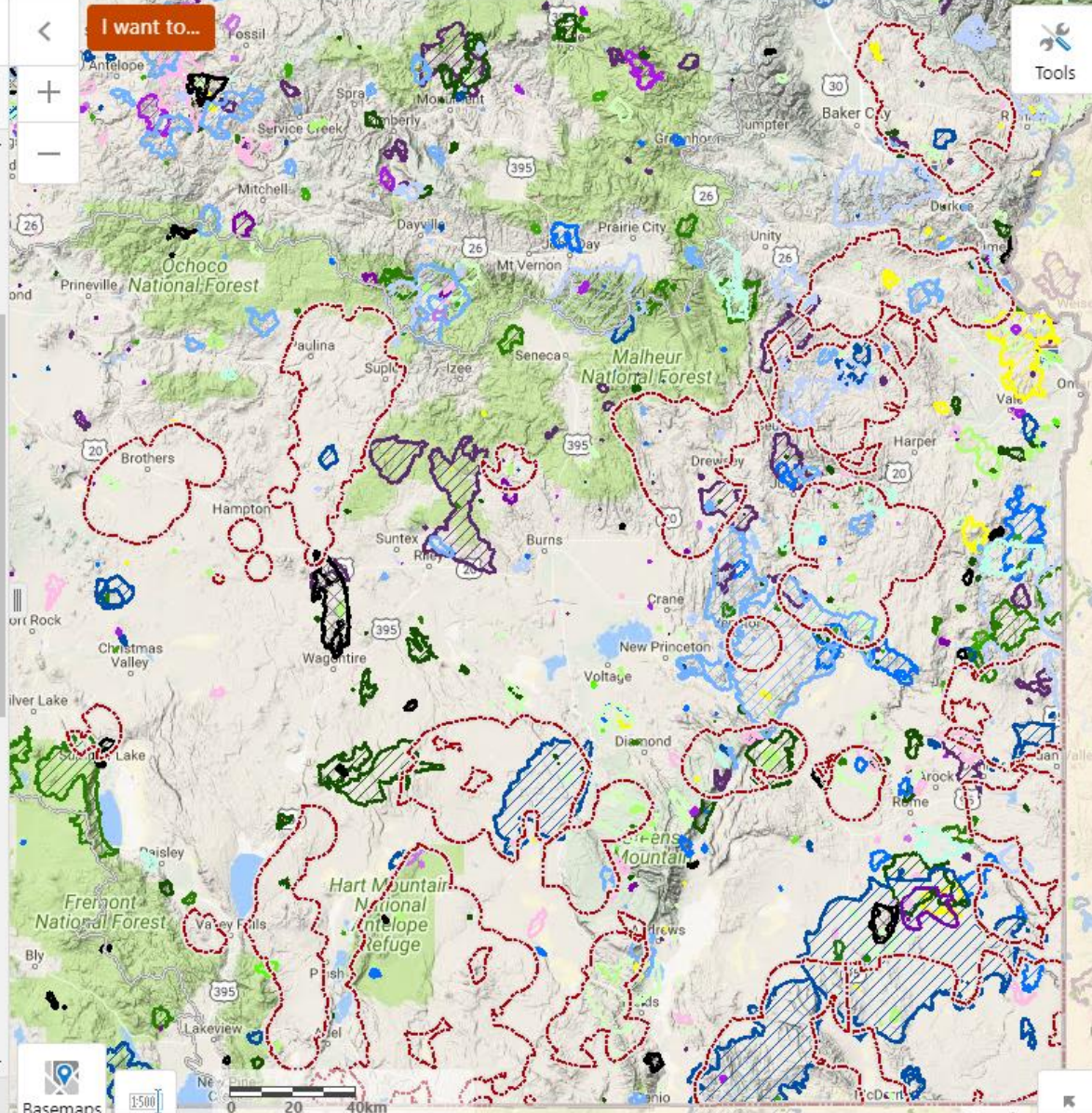
All Current Year Fires

All Current Year Perimeters

Previous Large Fire Perimeters

- | | |
|------|------|
| 2000 | 2009 |
| 2001 | 2010 |
| 2002 | 2011 |
| 2003 | 2012 |
| 2004 | 2013 |
| 2005 | 2014 |
| 2006 | 2015 |
| 2007 | 2016 |
| 2008 | |

I want to...





Layers



I want to...



Filter Layers...

Filter

Base Sage-Grouse Data

Priority Areas for Conservation (PACs)

Low Density Habitat

Oregon Counties with Sage-Grouse Habitat

SageCon Planning Area Boundary

Sage-Grouse Action Areas in Oregon

Sage-Grouse Management Zones

Sage-grouse Population Boundaries in Oregon

Land Management/Ownership (2015)

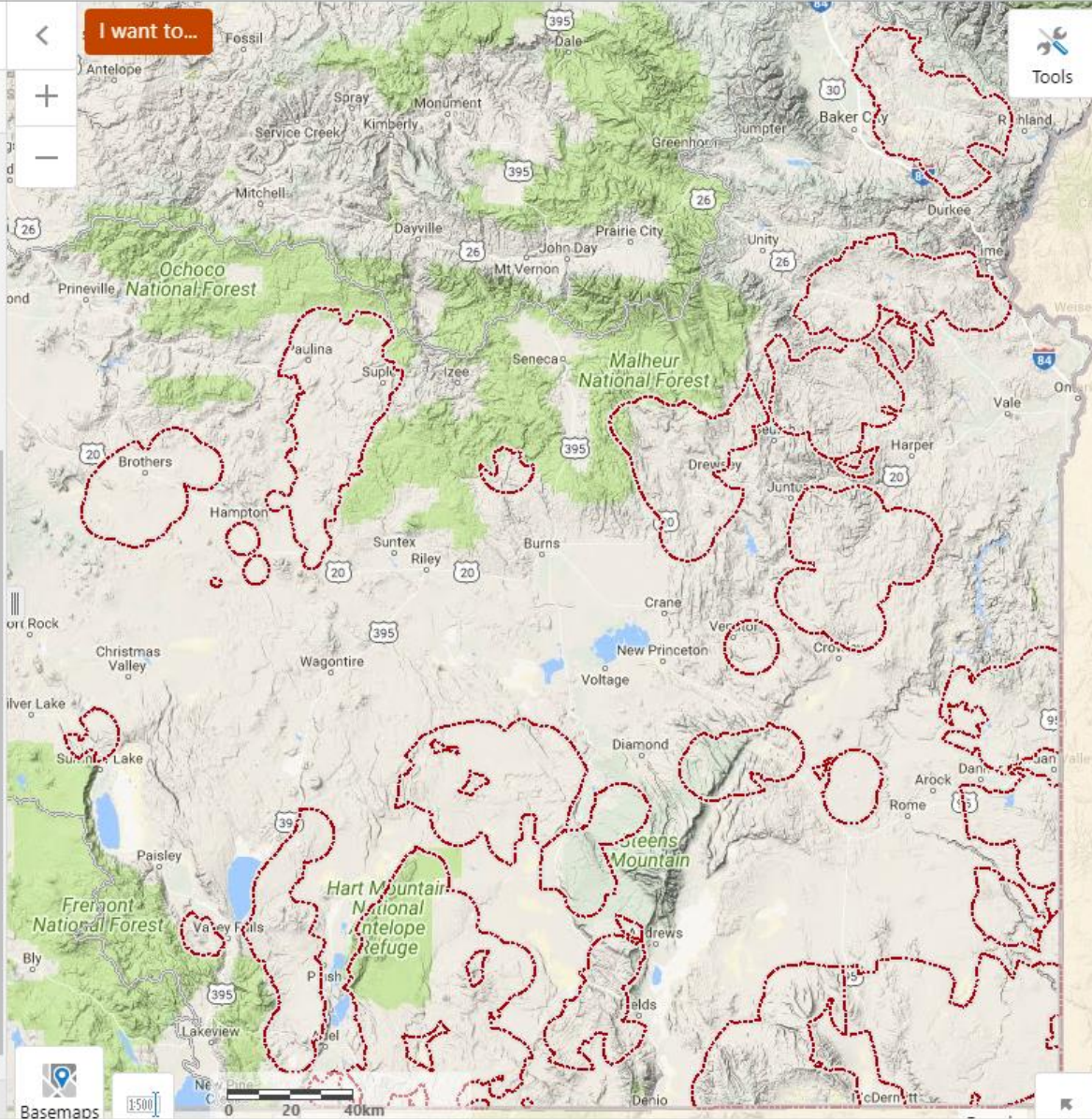
Basemaps

Google labels

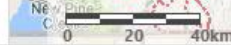
Google Terrain

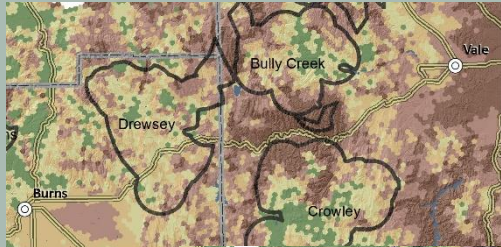
Aerial (Bing)

Aerial With Labels (Bing)



1:500





Habitat Viability



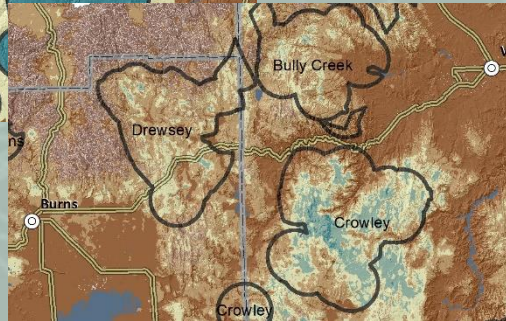
Fire and Invasives Threat



Human modification

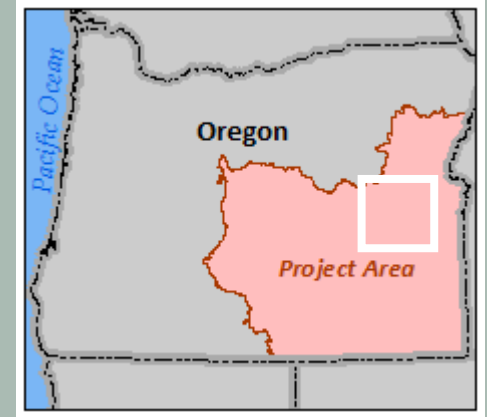


Management priority



Seasonal
Habitat
importance

Green/blue = high
Brown/orange = low



Potential Applications

- Questions:

- Where to target treatments or mitigation credit sites?
- What areas are most important to sage-grouse?
- What areas are at risk?
- What areas are already heavily disturbed or modified?

- Examples:

- Where is *habitat viability, management priority, and seasonal habitat importance* high, and juniper is in phase I?
 - Cut juniper
 - Also on private lands?
 - Prioritize funding assistance for landowner
- Where is *habitat viability, management priority, and seasonal habitat importance* high, and *fire and invasives threat* is also high?
 - Install fuel breaks
- Where is existing *human modification* high and *habitat viability, management priority, and seasonal habitat importance* low
 - Prioritize for development

SageCon and Other Tools

- SageCon Tools are specific to Oregon and geared toward sage-grouse, but...
- Potential connections to other tools we are discussing today
 - Conservation Efforts Database – find out where recent sagebrush treatments have occurred for landscape-scale planning
 - Land Treatment Planning Tool – find out more information about historical treatments in similar areas to maximize the chances of success
 - EEMS – users build customized queries for restoration planning
 - Seedlot Selection Tool – once you've identified a site for restoration, get help with seed selection

Explore the Oregon SageCon Tools here:

<http://oregonexplorer.info/content/sagecon-decision-support-web-tools-and-maps?topic=203>

Sage-Grouse Data Viewer direct link:

http://tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=sagegrouse

Contact: Megan Creutzburg (megan.creutzburg@oregonstate.edu)