Nevada Sagebrush Habitat Plan

January 2023

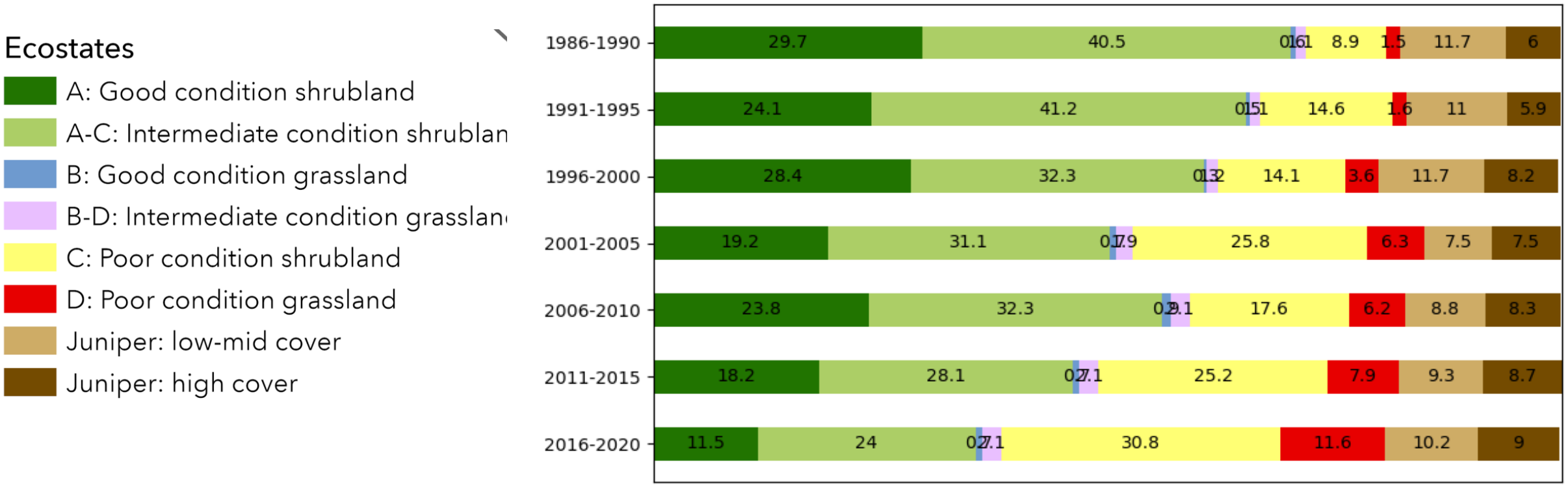
Road Map

- Why
- Background
  - Nevada Habitat Conservation Framework (EO 2021-018)
    - Sagebrush Habitat Plan
    - Wildlife Connectivity Plan
  - Sagebrush Ecosystem Program Strategic Action Plan
- Sagebrush Conservation Design (SCD)
- Overview of recent mapping products and examples from other states
- Update on efforts to date
- Next Steps

Sagebrush Habitat Plan - Why?

- Across the West sagebrush habitats now occupy <55% of its historic range (Sagebrush Conservation Design [SCD]).
- In last 20 years the West is losing about 1.3 million acres of good (Core) and pretty good (Growth Opportunity Areas) sagebrush habitat every year (i.e. converting to “Other Rangelands”) (1.34% loss annually)(SCD).
- The rate of sagebrush degradation and habitat conversion is most dramatic in NV (Kleinhesselink et al 2023).
- Loss of sagebrush habitats negatively impacts wildlife, recreation, livestock grazing, local economies, tribes, carbon sequestration, etc…..all Nevadan’s.
- This loss is unsustainable despite the great conservation work that is occurring.

Over the last 30 years Nevada's habitats characterized as moderate-to-good shrub and grasslands have decreased by half while areas classified as being in poor condition have increased four-fold.



The percent of landscape change through time in Nevada.

- Given the sagebrush habitat degradation, conversion, and loss, how can we (all Nevadan's) collectively address this issue?

- EO 2021-018 (i.e. Habitat Conservation Framework and Sagebrush Habitat Plan) – A management paradigm shift towards embracing strategic conservation based on defending and growing core areas.

Background - Nevada Habitat Conservation Framework (HCF) Executive Order 2021-018

- Concept began with Conservation Partners desires to protect migration corridors, then expanded to include sagebrush habitats, and ultimately all Nevada Habitats.
- The EO states, “NDOW shall collaboratively establish a Habitat Conservation Framework (HCF) to provide for habitat conservation, restoration, rehabilitation, and protection in a coordinated and inclusive manner across landownerships and in partnership with federal land management agencies, other relevant state and local agencies, stakeholders, and local entities.”
- Goals:
  - Conserving and propagating diverse and productive wildlife habitats;
  - Addressing the priority threats to key habitats such as the wildfire and annual invasive grass cycle, and conifer encroachment; and
  - Maintaining connectivity of habitats and corridors
- The EO calls out two primary components:
  - Sagebrush Habitat Plan
  - Wildlife Connectivity Plan

EO states the Sagebrush Habitat Plan will:

1) Be developed collaboratively with counties, federal land management and state agencies, and other stakeholders

2) Identify priority landscapes for action in consideration of associated resource values, site potentials and feasibility;

3) Include identification of the primary threats and challenges to Nevada's sagebrush biome;

4) Identify and prioritize strategies and actions to enhance, restore, or maintain priority habitats for all species dependent upon those habitats for their lifecycles;

5) Be informed by best available science and reference other management plans that overlap within different priority habitats

Sagebrush Habitat Plan

- Development of a Nevada centric map and or mapping toolset based on values and threats to help prioritize conservation actions across Nevada AND conceptual framework/narrative
  - Recent mapping products (e.g. Sagebrush Conservation Design, SageCon, PReSET)
  - Threats and Values
  - Descriptive approaches, strategies and actions
  - Broadly used by all agencies, landowners, work groups, etc. to inform habitat conservation work
  - Collaboratively developed with collective buy-in from partners
  - A useful communication tool
- What it is not
  - A scientific literature synthesis
  - A large planning document
  - An NDOW/SEP only product
  - Replace existing plans, agreements, or partnerships
  - Mandatory participation

Sagebrush Ecosystem Program - Strategic Action Plan

- SHP closely coordinated with SEP
- Update Strategic Action Plan every 5 years.
- The Sagebrush Habitat Plan maybe utilized to help direct conservation actions.
- Guide collaboration efforts

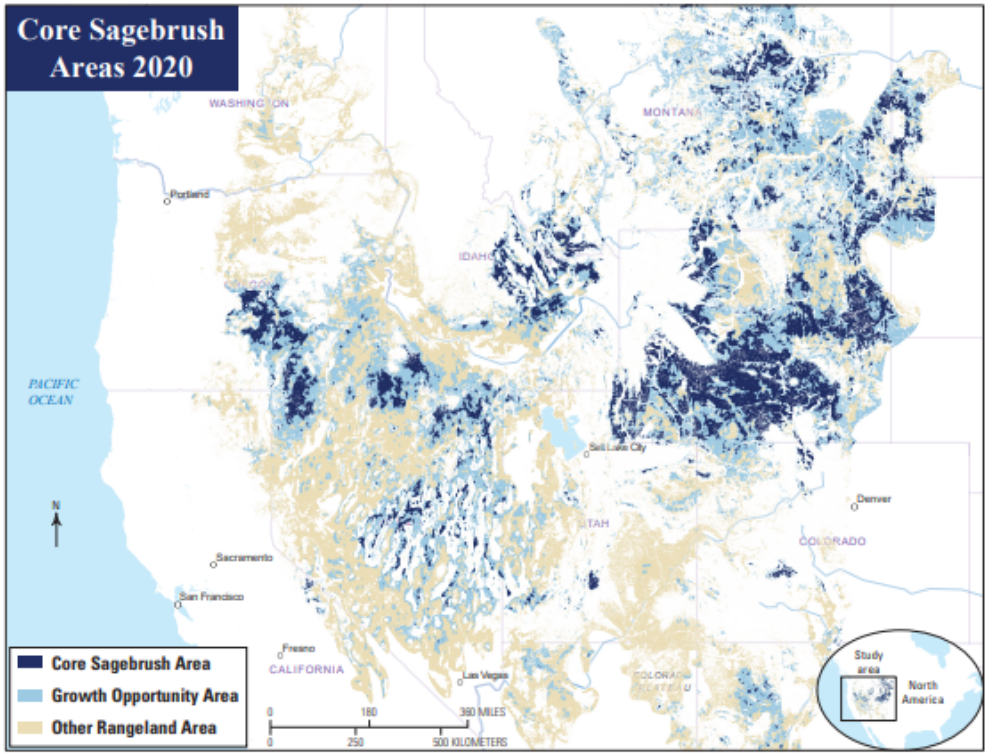
Sagebrush Conservation Design

- Diverse working group of experts
- Quantified and mapped Sagebrush Ecological Integrity
  - Shrub, Perennial Grass, Annual Grass, Conifer Cover
  - Human Modification Index used to Assessed primary threats to parse out areas with higher integrity and lower threats.
  - Ecologic relevance by validating maps with independent sagebrush obligate species data.

USGS
science for a changing world

Prepared in cooperation with the Western Association of Fish and Wildlife Agencies and the U.S. Fish and Wildlife Service

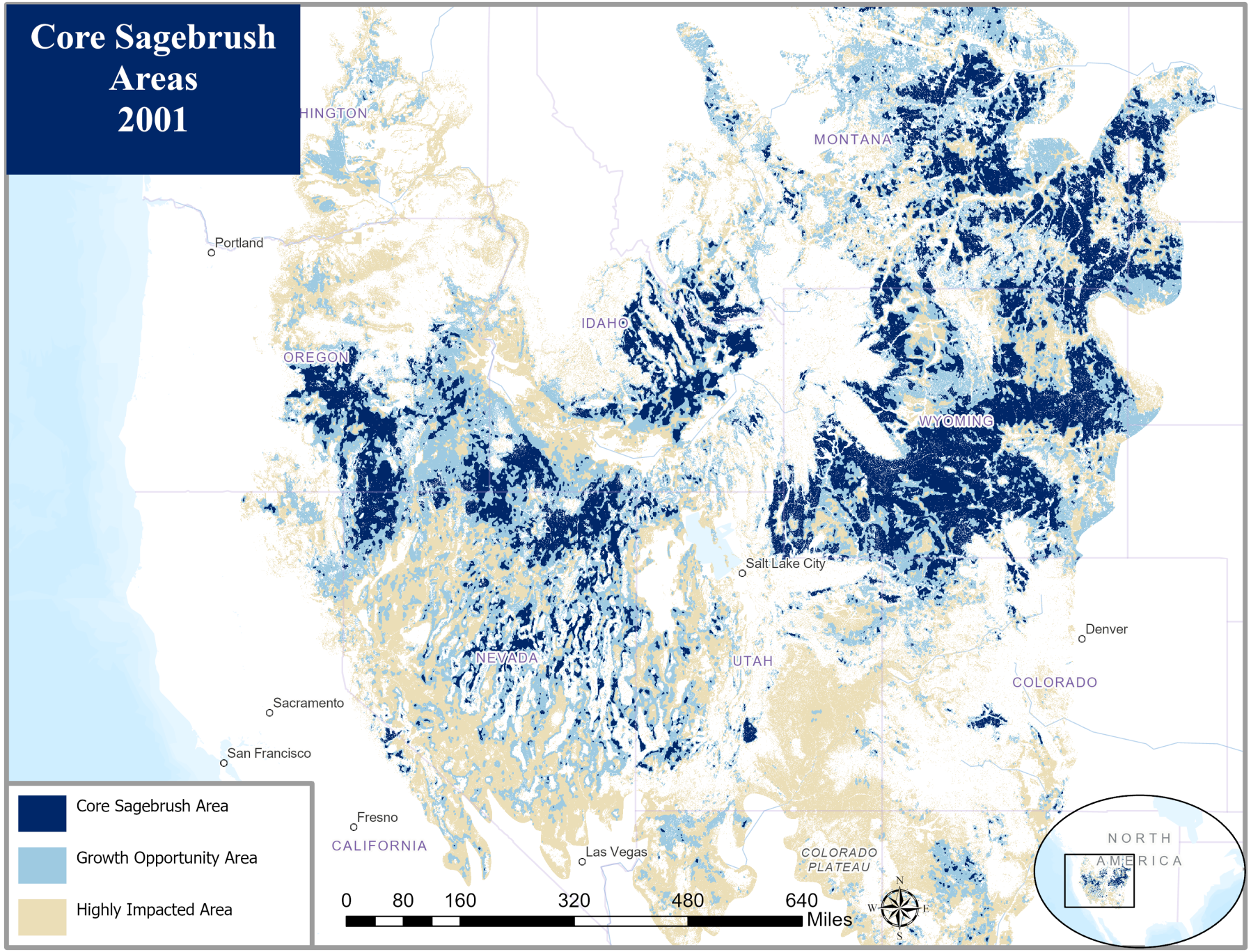
A Sagebrush Conservation Design to Proactively Restore America's Sagebrush Biome



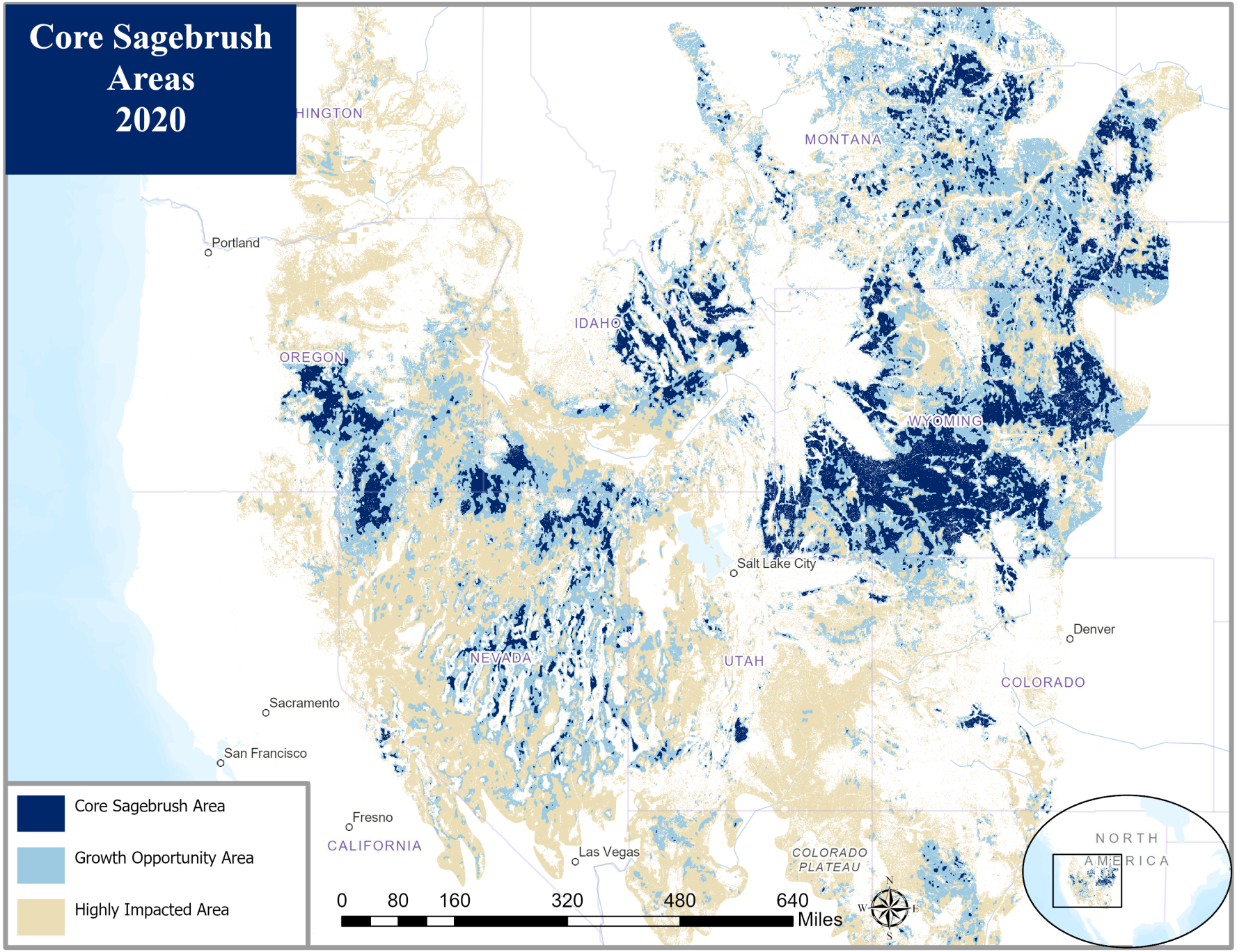
Open-File Report 2022–1081

U.S. Department of the Interior
U.S. Geological Survey

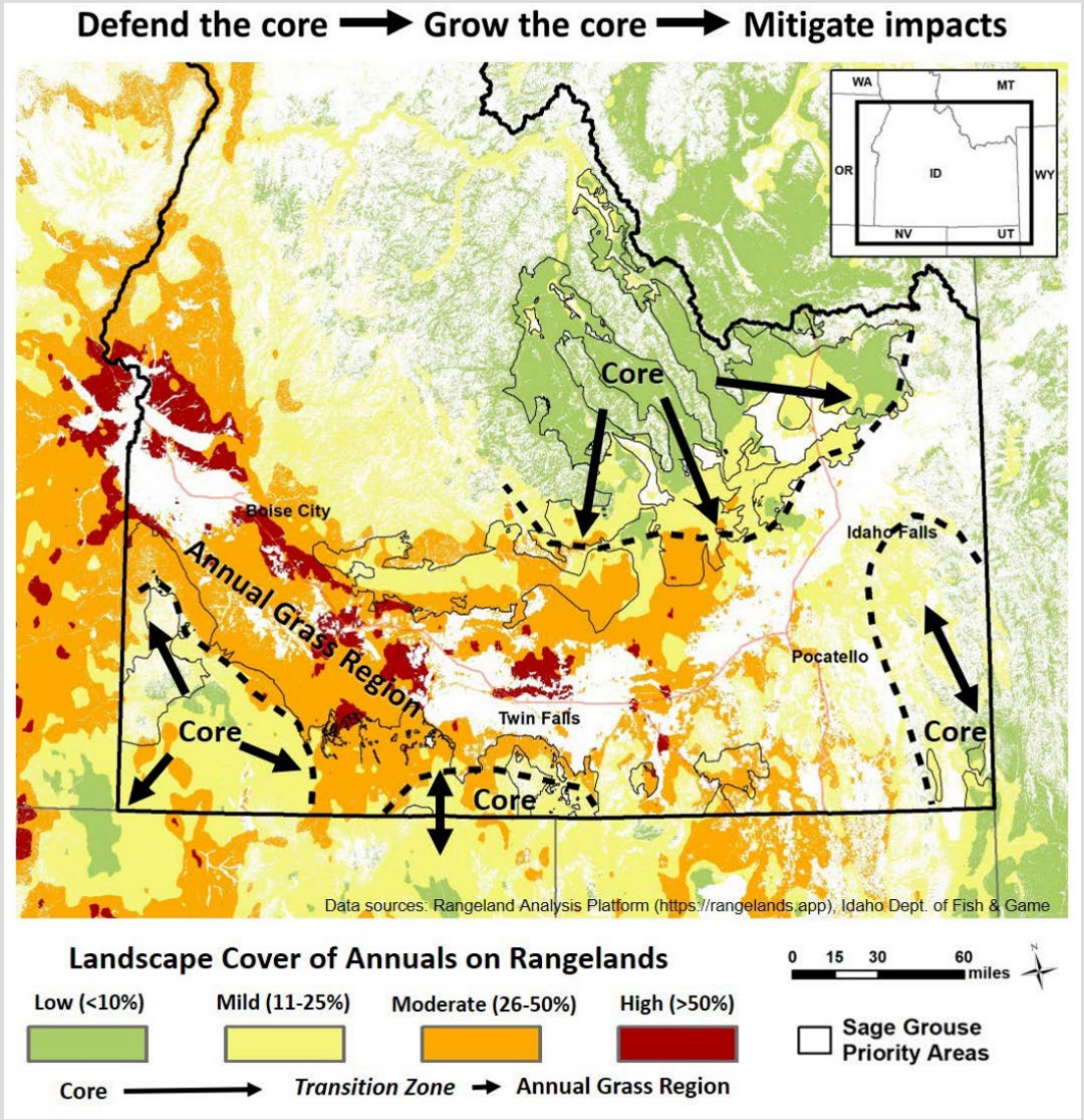
- Core Areas = (↑Integrity, ↓ Threat)
- Growth Opportunity Areas
- Other Rangeland Areas (↓ Integrity, ↑ Threat)

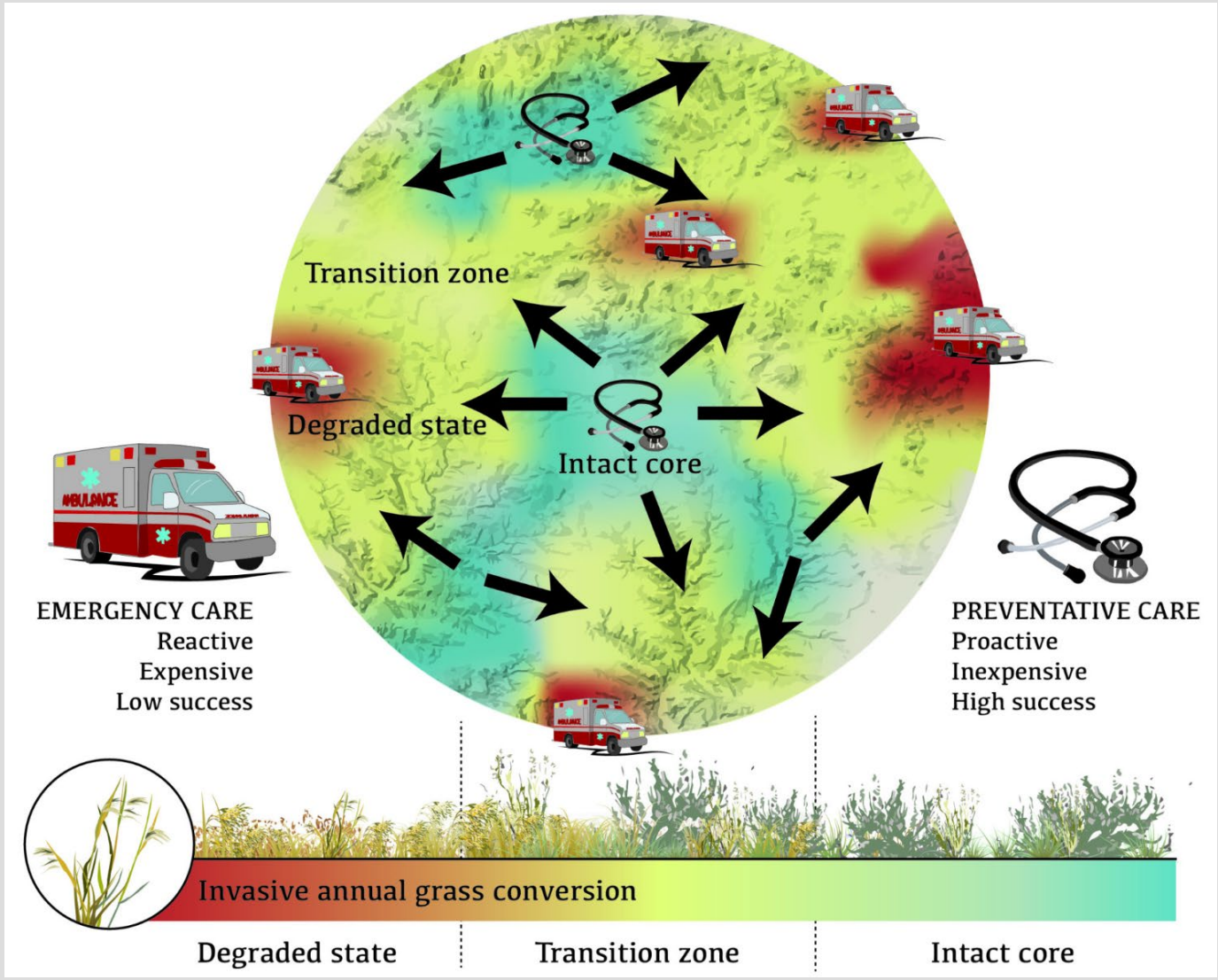


- Core Areas = 33.4 million acres (~14%)
- Growth Opportunity Areas = 84.3 million acres (~34%)
- Other Rangeland Areas = 127.2 million acres (% 52%)
- What are other states doing and what other products exists?

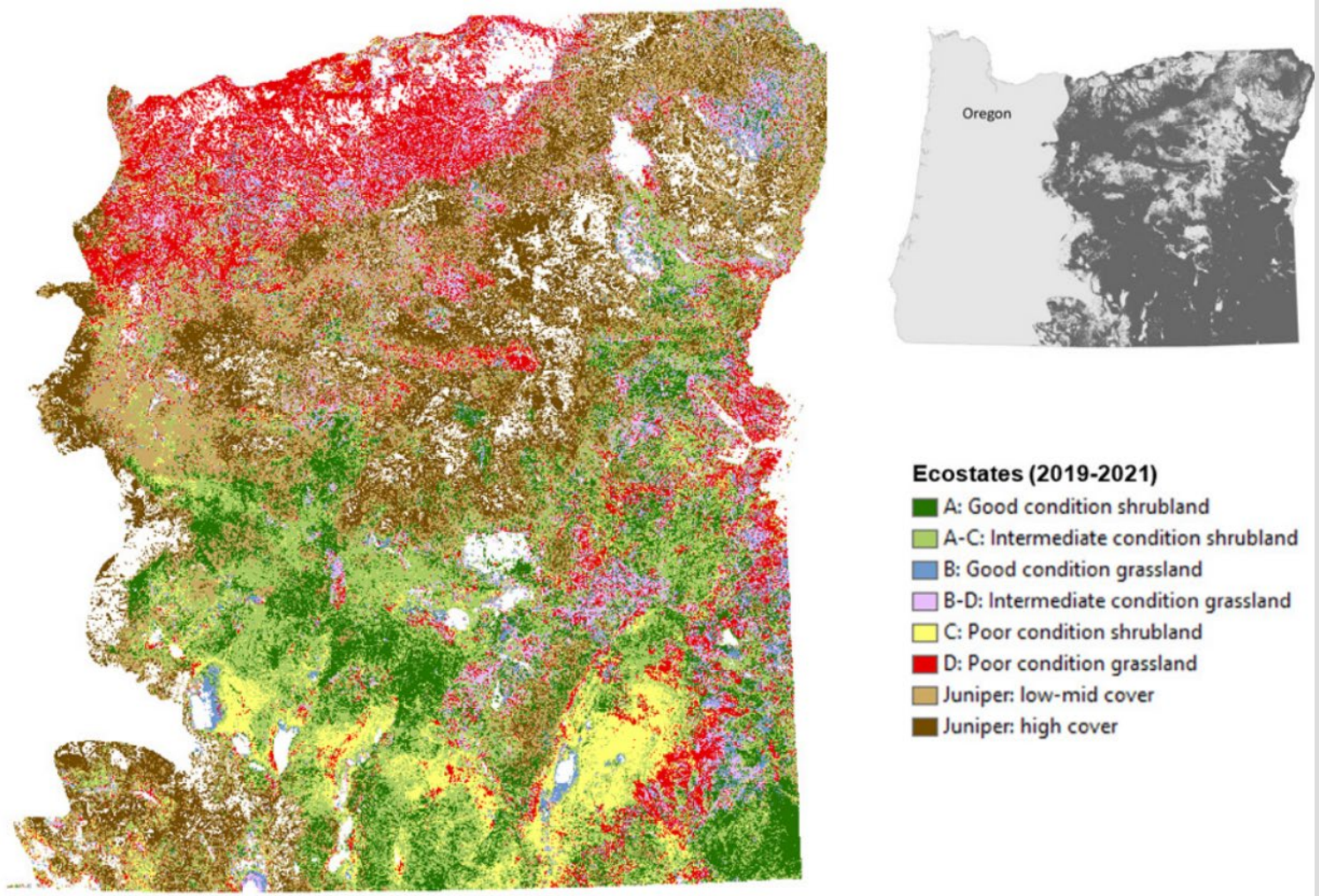


Idaho Cheatgrass Challenge

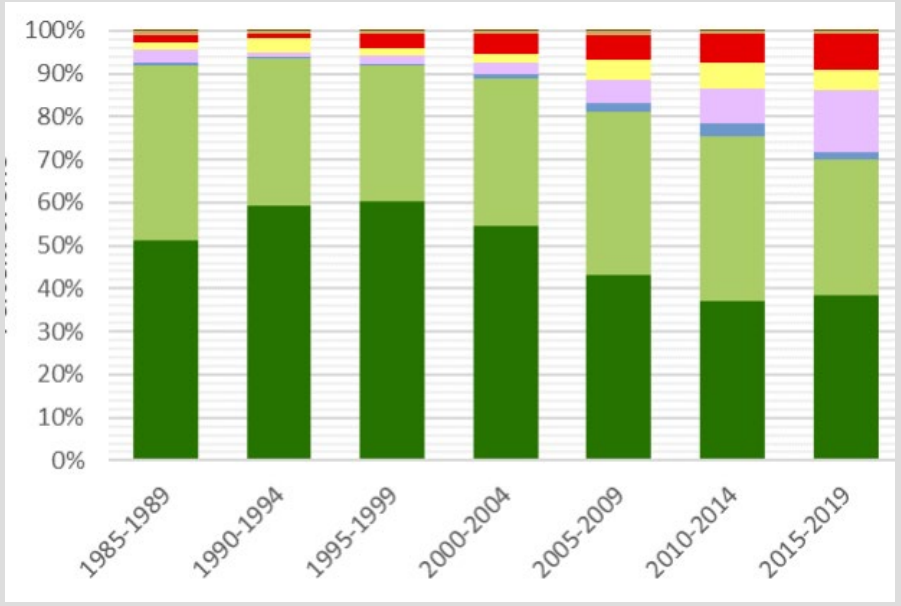


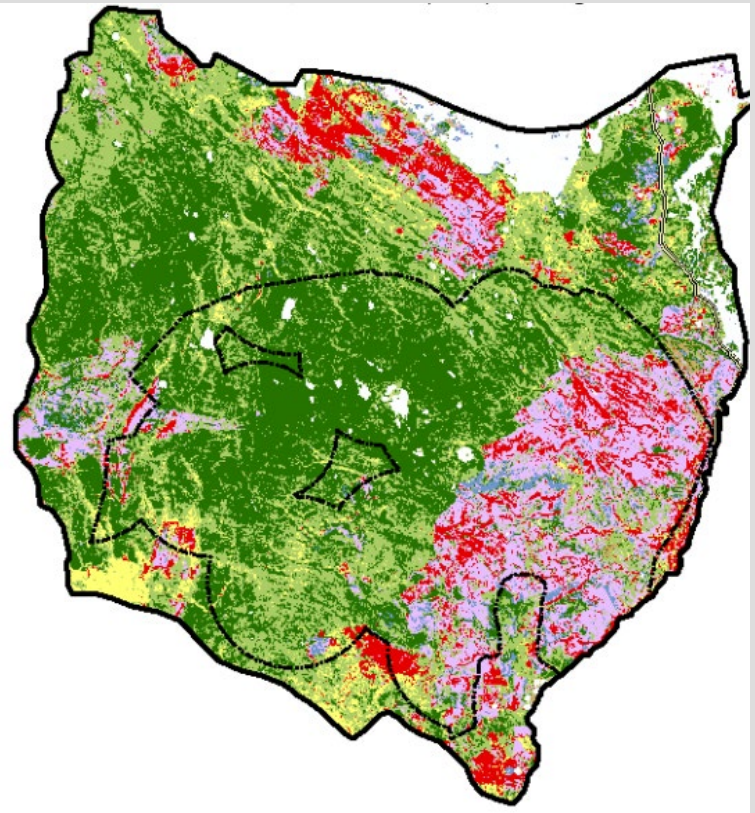


SageCon Threat Based Ecostate Map



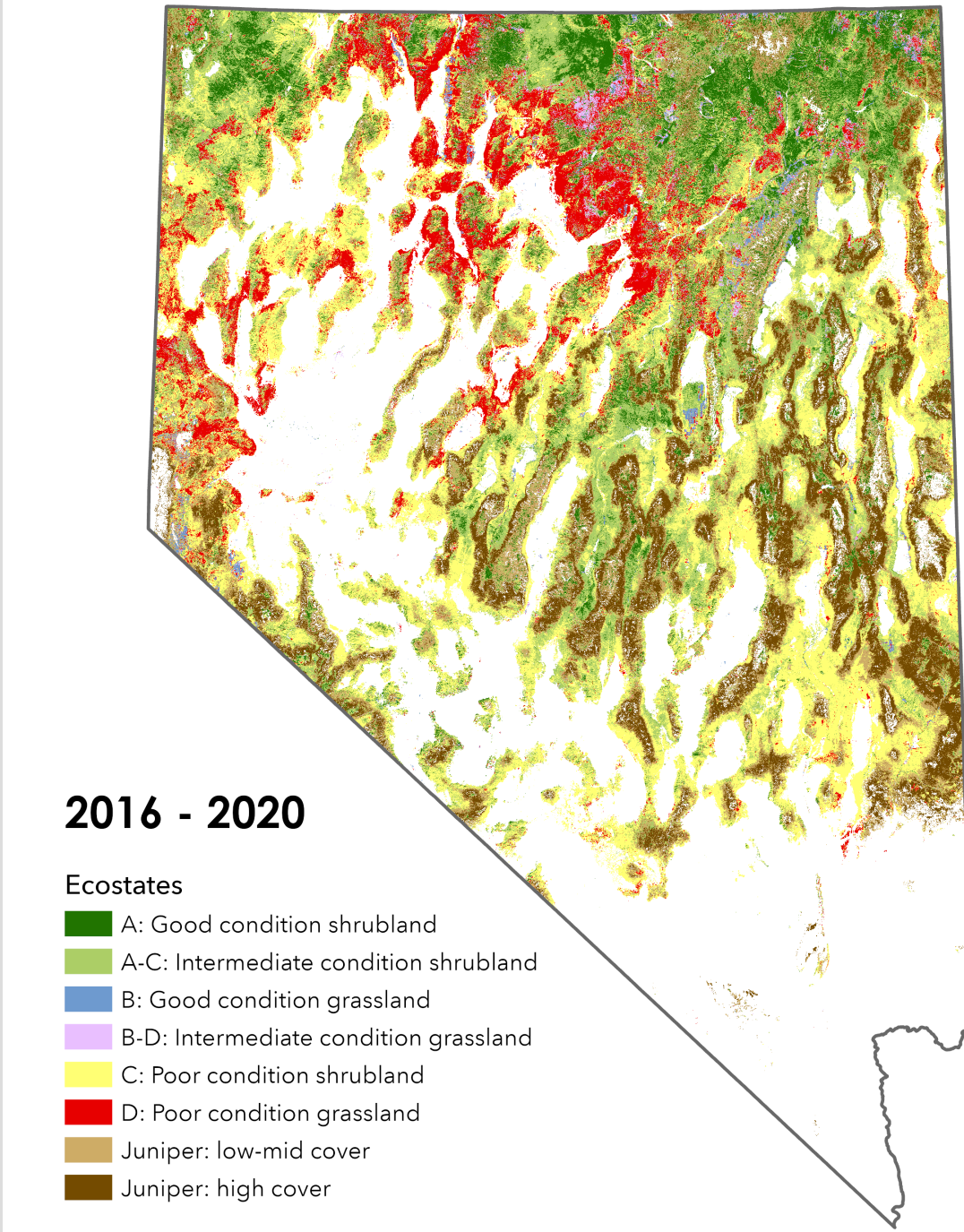
Threat-based ecostate mapping depicts rangeland condition across eastern Oregon based on shrub, grass and tree cover.

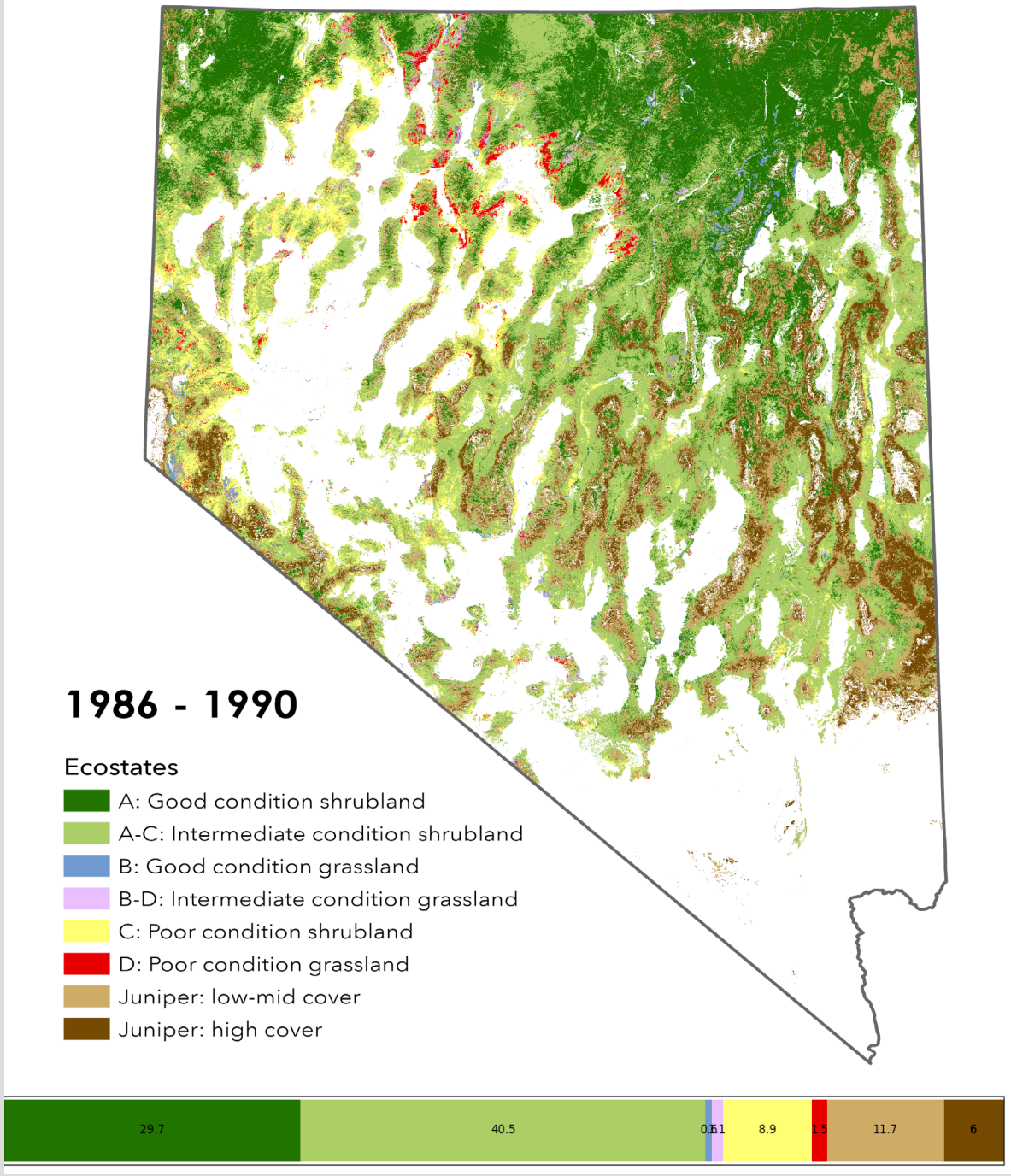


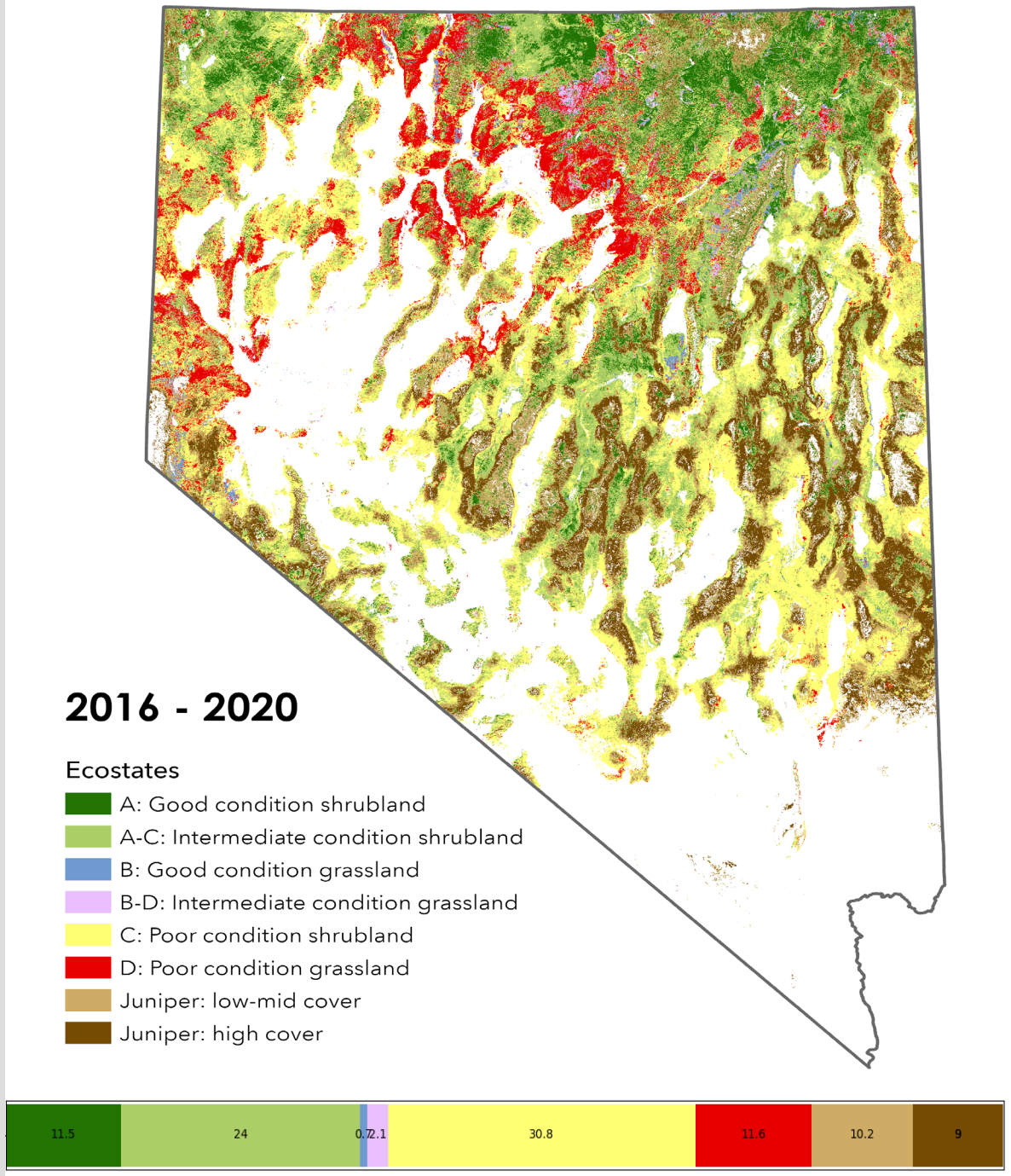


Nevada Sagebrush Threats Map

- Followed Oregon's SageCon Threat Analysis Approach https://oe.oregonexplorer.info/externalcontent/sagecon/SageCon%20Rangeland%20Condition%20Report.pdf
- Uses Rangeland Analysis Platform
  - 30 x 30 meter gid cell data




1986 - 1990
Ecostates
A: Good condition shrubland
A-C: Intermediate condition shrubland
B: Good condition grassland
B-D: Intermediate condition grassland
C: Poor condition shrubland
D: Poor condition grassland
Juniper: low-mid cover
Juniper: high cover
29.7
40.5
0.6
1.1
8.9
1.5
11.7
6


2016 - 2020
Ecostates
A: Good condition shrubland
A-C: Intermediate condition shrubland
B: Good condition grassland
B-D: Intermediate condition grassland
C: Poor condition shrubland
D: Poor condition grassland
Juniper: low-mid cover
Juniper: high cover
11.5
24
0.7
2.1
30.8
11.6
10.2
9

Sagebrush Plan Timelines

- Public Kick-off meeting (at NDOW HQ and zoom) – July 20, 2022
- Developed Core Agency Team – Hosting meetings September 14 and November 16, 2022
- Local Area Meetings
  - Winnemucca - Jan. 17, 2023
  - Elko - Jan. 18, 2023
  - Ely - Jan. 18, 2023
  - Reno - Jan. 19, 2023
  - Las Vegas - Jan. 31, 2023

Values and Threats

Values

- Wildlife
  - LCT
  - Mule Deer
  - Pronghorn
  - Pygmy rabbit
  - Sage-grouse
  - Songbirds (sagebrush obligates, Pinyon Jay)
  - Connectivity data
  - Critical habitat
- Water (WETT Tool, TNC groundwater dependent ecosystems (GDE), DRI products)
  - Surface
  - Ground
  - Riparian/wetland
  - Mesic
  - Springs – spring database
  - Guzzlers
- Conservation Easements – USGS protected lands database
- Vegetation treatments (Fuel breaks, Fire rehabilitation)

Threats

- Catastrophic Wildland Fire
- Fire probability per 100 years
- Fire Perimeters
- Invasive annual grasses
- Conifer cover
- Climate - Prolonged Drought
- Wild horse and burro populations
- Mining and Energy
- Land Use and Development (Roads, fences disturbed land, development, urban, recreation, land disposal, etc.)
- Ravens
- Noxious Weeds
- Resistance and Resilience
- Ecostate time series maps
- Other Limitations (surface management, clearances, tool restrictions, people/capacity, funding)

Local Work Group Meetings – Themes

- Process improvements - meeting notifications, how to participate, clarify “Ask”, etc.
- Bottlenecks - NEPA, Funding, Capacity
- Ecological considerations - Precipitation, Resistance/Resilience, Mt. vs. Wyoming Sagebrush, Native vs. Non-Native Seed, decadent sagebrush communities, etc.
- Local work group participation – improve declining trend, species centric vs. habitat approach, create program similar to Utah Watershed Initiative, etc.
- Mapping – more local area input, how to revise with local area input, SHP mapping vs. previous Sage-grouse mapping products

How you can Help – Your input matters!

- Ask questions
- Participate in discussion
- Visit or write your recommendations on note cards and share with Mark, Lee, Justin, or Emily
- Share missing or recommended geospatial Threats and Values layers
- Review future mapping products and plan narratives providing input
- Participate in future surveys
- Send any recommendations and thought to: ndowshp@ndow.org

Sagebrush Plan Timelines

- Local Area Meetings – summarize input and develop planning approach
- Considerations
  - Communication plan (notifications, website, clarity “ask” and timelines, etc.
  - Additional local work group meetings (spring, summer, fall)
  - Targeted meetings with agencies and local work groups
  - Outreach surveys
- Develop Draft Products – Summer/Fall 2023
- Public Review of Draft Product – Fall 2023
- Final Draft – December 2023
- Continue refining into the future/living plan

Desired Outcomes:

- Improved Communication
- Common Priorities and Vision
- Strategic Conservation

Improved Rangeland and Wildlife Health

Questions?

Sagebrush Biome Conservation Design

Satellite Imagery

Satellite Imagery & Ancillary Sources

Sagebrush w/ perennial grass dom.

Stressors (current)

+

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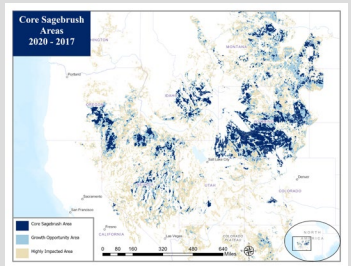
STEP 1

Core Sagebrush Areas



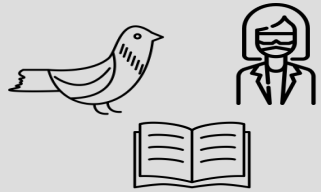
STEP 2

Stressors (matrixes)

	Highly Impacted Areas	Growth Opportunity Areas	Core Sagebrush Area
No/Low Threats	Assess Other Threats	Defend	Defend
Moderate Threats	Mitigate	Grow	Grow
High Threats	Mitigate	Mitigate	Grow/Mitigate
Very High Threats	Mitigate	Mitigate	Mitigate

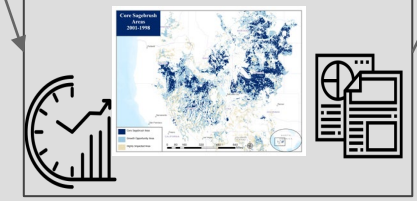
STEP 3

Evaluate



STEP 1

Report card



STEP 4

Web Based Tool

Open File Report

Targeted Comms

Sagebrush Biome Conservation Design

Sagebrush Cores = Q_1 * Q_2 * Q_3 * Q_4 * Q_5

Satellite Imagery

Sagebrush w/ perennial grass dom.

Q_1 (sage 560m) * Q_2 (perennial Grass 560m)

+

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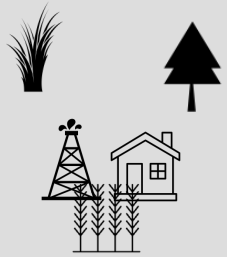
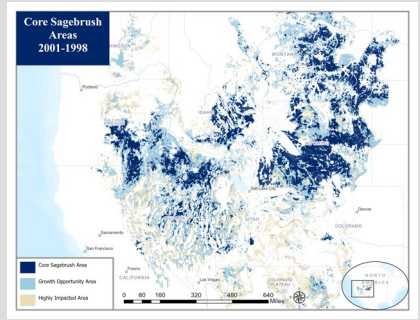
Satellite Imagery & Ancillary Sources

Stressors (current)



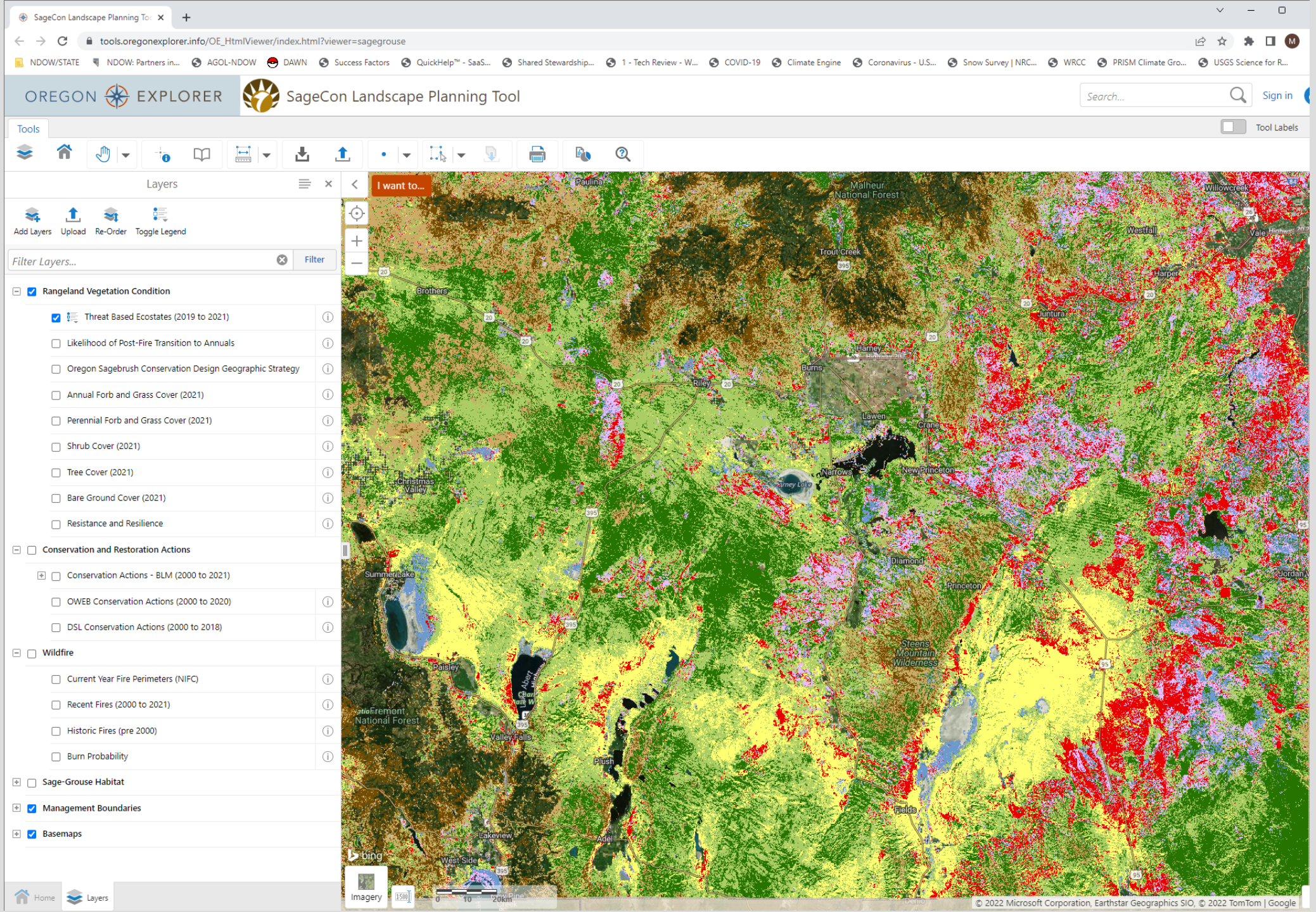
Q_3 (Annual Grasses) * Q_4 (Human Modification Index) * Q_5 (Trees)

Core Sagebrush Areas



Ecostate Mapping Rules

Ecostate	Herb Composition	Rule Set
A: Good condition shrubland	Perennials highly dominant	Tree<5% and Shrub >=10% and AFG:PFG <0.333
B: Good condition grassland	Perennials highly dominant	Tree <5% and Shrub <10% and AFG:PFG ratio <0.333
A-C: Intermediate condition shrubland	Perennials slightly dominant	Tree<5% and Shrub >=10% and AFG:PFG ratio 0.5-1.0
A-C: Intermediate condition shrubland	Perennials dominant	Tree<5% and Shrub >=10% and AFG:PFG ratio 0.333-0.5
B-D: Intermediate condition grassland	Perennials slightly dominant	Tree<5% and Shrub <10% and AFG:PFG ratio 0.5-1.0
B-D: Intermediate condition grassland	Perennials dominant	Tree<5% and Shrub <10% and AFG:PFG ratio 0.333-0.5
C: Poor condition shrubland	Annuals dominant	Tree<5% and Shrub >=10% and AFG:PFG ratio >=1.0
D: Poor condition grassland	Annuals dominant	Tree<5% and Shrub <10% and AFG:PFG ratio>=1.0
Juniper: Low-mid cover	All	Tree 5-20%
Juniper: High cover	All	Tree >=21%


SageCon Landscape Planning Tool
tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=sagegrouse
OREGON EXPLORER
SageCon Landscape Planning Tool
Search...
Sign in
Tools
Tool Labels
Layers
Add Layers
Upload
Re-Order
Toggle Legend
Filter Layers...
Filter
Rangeland Vegetation Condition
Threat Based Ecostates (2019 to 2021)
Likelihood of Post-Fire Transition to Annuals
Oregon Sagebrush Conservation Design Geographic Strategy
Annual Forb and Grass Cover (2021)
Perennial Forb and Grass Cover (2021)
Shrub Cover (2021)
Tree Cover (2021)
Bare Ground Cover (2021)
Resistance and Resilience
Conservation and Restoration Actions
Conservation Actions - BLM (2000 to 2021)
OWEB Conservation Actions (2000 to 2020)
DSL Conservation Actions (2000 to 2018)
Wildfire
Current Year Fire Perimeters (NIFC)
Recent Fires (2000 to 2021)
Historic Fires (pre 2000)
Burn Probability
Sage-Grouse Habitat
Management Boundaries
Basemaps
I want to...
Malheur National Forest
Paulina
Brothers
Trout Creek
Westfall
Willowcreek
Vale
Harper
Juntura
Harney
Burns
Riley
Lawen
Crane
Narrows
New Princeton
Christmas Valley
Diamond
Summer Lake
Princeton
Steens Mountain Wilderness
Paisley
Fremont National Forest
Valley Falls
Plush
Fields
Lakeview
Adel
West Side
bing
Imagery
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Home
Layers

WAFWA Sagebrush Conservation Strategy Part 2:

Threat-Based Landscape Conservation Design