

Section 5: Monitoring Oregon’s Sage-grouse Habitat

The sagebrush biome has less than 60% of its historical range intact (Miller et al. 2011) and is considered one of the most imperiled ecosystems in the West (Noss and Peters 1995). Oregon is not exempt from this loss, despite a strong regulatory framework to protect habitat from development (see Section 7). In this section, we will discuss the historical and current composition of Oregon’s sage-grouse range, assess previous habitat objectives, and provide context for an updated approach to monitoring and conserving sage-grouse habitat.

Historical Distribution of Sage-grouse Habitat

Habitat for sage-grouse in Oregon prior to Euro-American settlement encompassed 17.7 million acres of sagebrush throughout eastern Oregon (Figure 5.1). The conversion of sagebrush-steppe to agricultural land in the Columbia Basin of Oregon was responsible for an estimated loss of 750,000 ha (1.5 million acres) of sage-grouse habitat, nearly all of which is currently in private ownership. The current range, approximately 14.7 million acres, includes varying degrees of suitability for sage-grouse. Although approximately 171,000 acres of potential habitat still exists in the Klamath Basin region, there have been no confirmed observations of sage-grouse in that region since 1993.

Numerous activities have impacted and potentially continue to impact distribution and quality of sage-grouse habitat including land use conversion, fragmentation, resource extraction, historical grazing practices, conifer expansion, invasive annual grasses, and wildfire (Doherty et al. 2022).

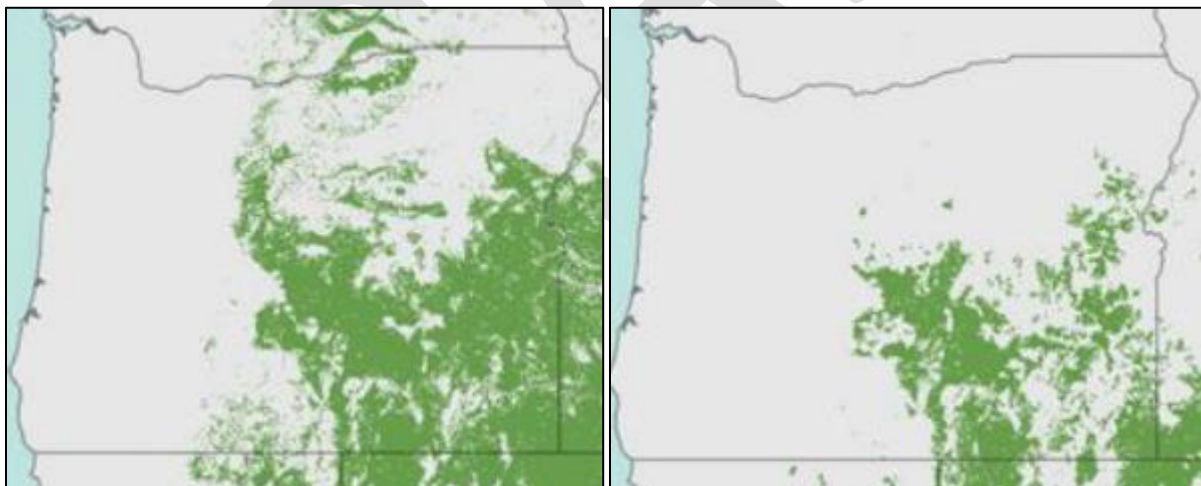


Figure 5.1. The Nature Conservancy map of historic sagebrush ecosystem distribution in Oregon (left) compared to current (right).

Agricultural Conversion

Permanent conversion of sagebrush to agricultural lands was the single greatest cause of decline in sagebrush-steppe habitat in the Columbia Basin (Quigley and Arbelbide 1997). In the northern half of eastern Oregon, large areas of sagebrush-steppe habitat have been converted to agricultural production (Wisdom et al. 2002). In southeastern Oregon, most conversion occurred

in the late 1800s to early 1900s, reached a threshold in the mid-1950s and has remained relatively unchanged since. Sage-grouse will occasionally use agricultural lands (e.g., alfalfa) as late summer and late brood-rearing habitat, but row crops and dryland cereal grains are generally not beneficial habitat (Swensen et al. 1987, Blus et al. 1989). In Washington where sage-steppe habitat is severely imperiled, CRP fields planted to perennial vegetation provide important year-round habitat when intermixed with remnant sagebrush-steppe vegetation (Shirk et al. 2017).

Total acreage of agricultural land use has declined in the past 30+ years based on the USDA Census of Agriculture (Figure 5.2). In those Oregon counties predominantly overlapping sage-grouse range, there has been a nearly universal decline in cropland acres and irrigated acres, while pastureland acreage is steady to increasing. Maintenance of pastureland is important to the persistence of sage-grouse in these counties, where responsible grazing can have minimal impacts on sage-grouse populations and forestall detrimental development.

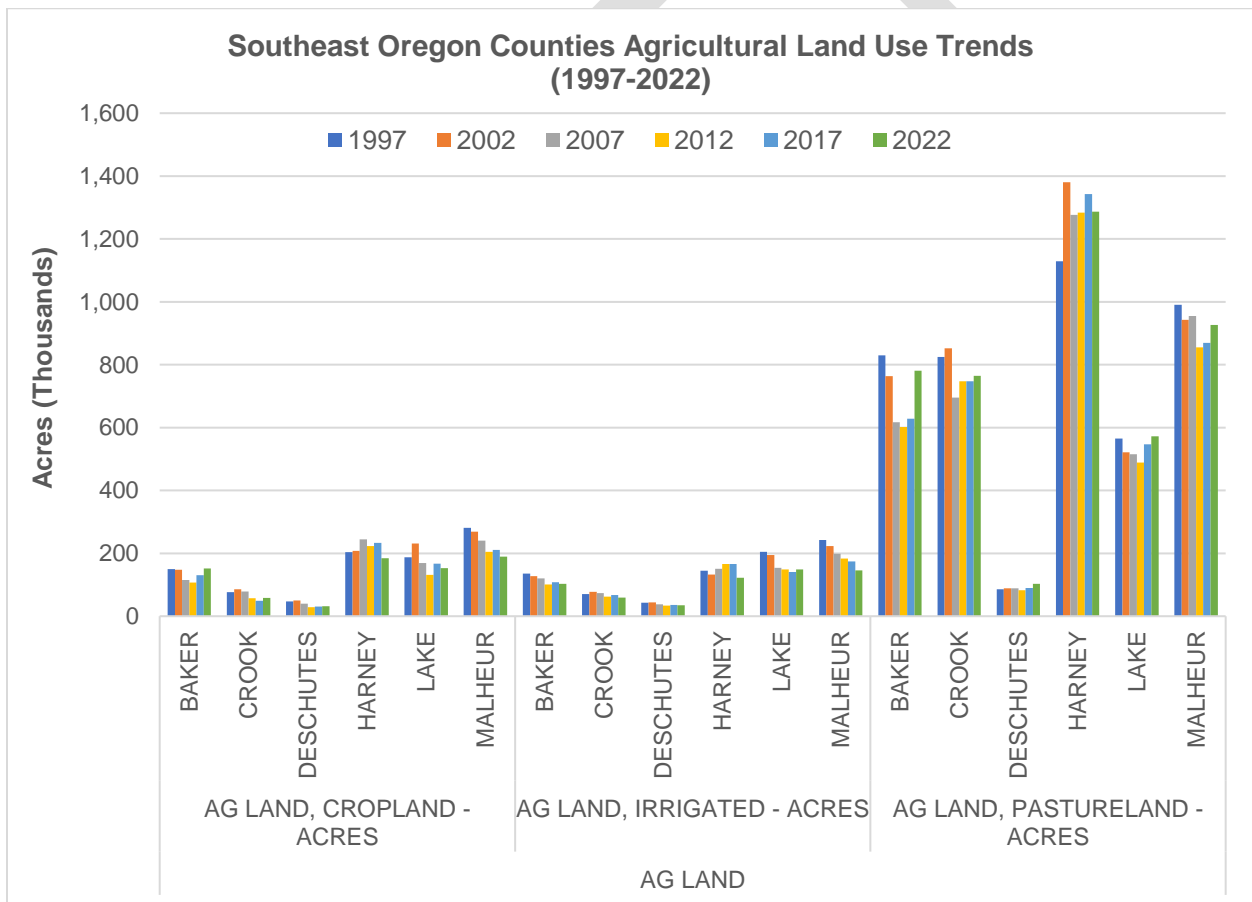


Figure 5.2. Trends in agricultural land use (acres) in 6 eastern Oregon counties coincident with sage-grouse range from 1997-2022 from USDA Census of Agriculture data.

Sagebrush Removal

Prior to the 1980s, herbicide treatment of large tracts of land (primarily using 2,4-D) was a common method of reducing sagebrush (Braun 1987). In addition to the loss of sagebrush, the

use of 2,4-D resulted in the decline of forbs (Miller and Eddelman 2001). In many cases, broad scale herbicide treatment may have contributed to declines in sage-grouse breeding populations (Enyeart 1956, Higby 1969, Peterson 1970, Wallestad 1975). A Utah study suggests this adverse impact on sage-grouse was compounded if the area was subsequently reseeded to crested wheatgrass (*Agropyron cristatum*) (Enyeart 1956). In Malheur County, for example, the Vale Project resulted in approximately 202,000 ha (500,000 ac) of sagebrush eradication projects for the benefit of livestock grazing (Willis et al. 1993). Approximately 50% of the treated area was reseeded with crested wheatgrass and various other grass mixes. Most of these treatments occurred on mild slopes in areas of moderately deep to deep soils which, based on current knowledge of sage-grouse, would have likely impacted breeding and winter habitats. While near monocultures of crested wheatgrass may be detrimental to sage-grouse habitat use in the short term, it can be highly effective in stabilizing an area and reducing the risk of invasive annuals (e.g., cheatgrass). Moreover, sagebrush has been documented to re-colonize some of these seedings and return to usable sage-grouse habitat over the past 30 years (Kindschy 1991).

Reduced application rates of some herbicides (e.g., Tebuthiuron) may result in a dramatic increase in forbs and perennial grasses while retaining some sagebrush cover (Olson and Whitson 2002, Dahlgren et al. 2006). Such applications of Tebuthiuron have been documented to benefit sage-grouse in only one study (Dahlgren et al. 2006). In Oregon, the scope and scale of sagebrush loss from wildfire should give pause to considerations of further removal.

Mechanical treatments (mowing, plowing, chaining) of sagebrush have generally been more “local” or small in nature, but these too, have been known to adversely impact sage-grouse habitat if done on a broad scale (Swensen et al. 1987). Even small-scale projects to reduce sagebrush can be damaging if in the wrong location, for example, in winter habitat. However, mechanical treatments may enhance brood rearing habitats where such habitats have been degraded (Dahlgren et al. 2006).

Fire and Fuel Breaks

Far exceeding the scale of mechanical and herbicidal removal of sagebrush is the escalated scope and scale of modern range fires. Wildfire has contributed to conversion of sagebrush communities into marginal or non-habitat. From 1980-2024, over 4.4M acres of sage-grouse range were affected by wildfire, averaging nearly 100,000 acres per year. The largest fire year on record was 2012, the year after the previous CAAS was approved, with ~894,000 acres burned, including 477,483 acres in core habitat. In 2024, over 666,000 acres of sage-grouse range burned, over 5% of sage-grouse habitat in Oregon, including 512,606 in core habitat, the second largest year on record after 2012 (Figures 5.3 and 5.4). With increasing frequency and scale, wildfire is outpacing the sagebrush biome’s natural capacity to recover.

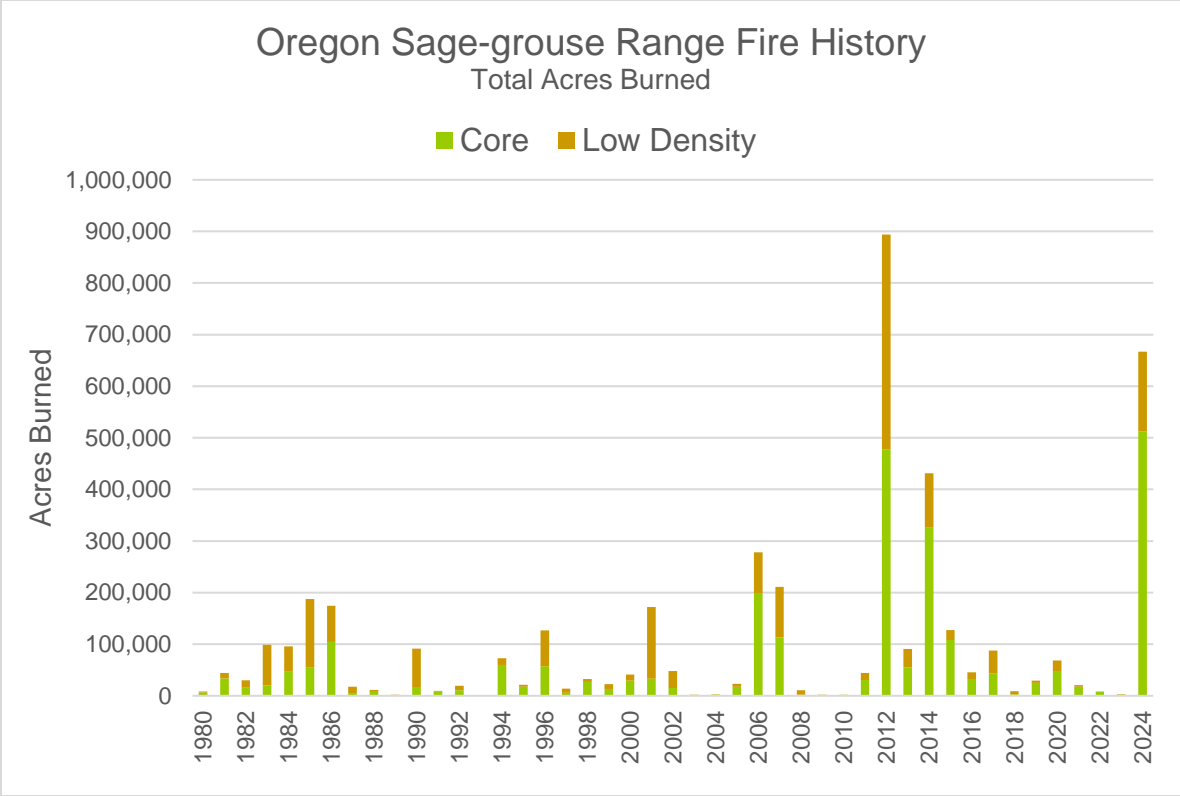


Figure 5.3. Total acres of range burned in sage-grouse core and low density habitat (1980-2024).

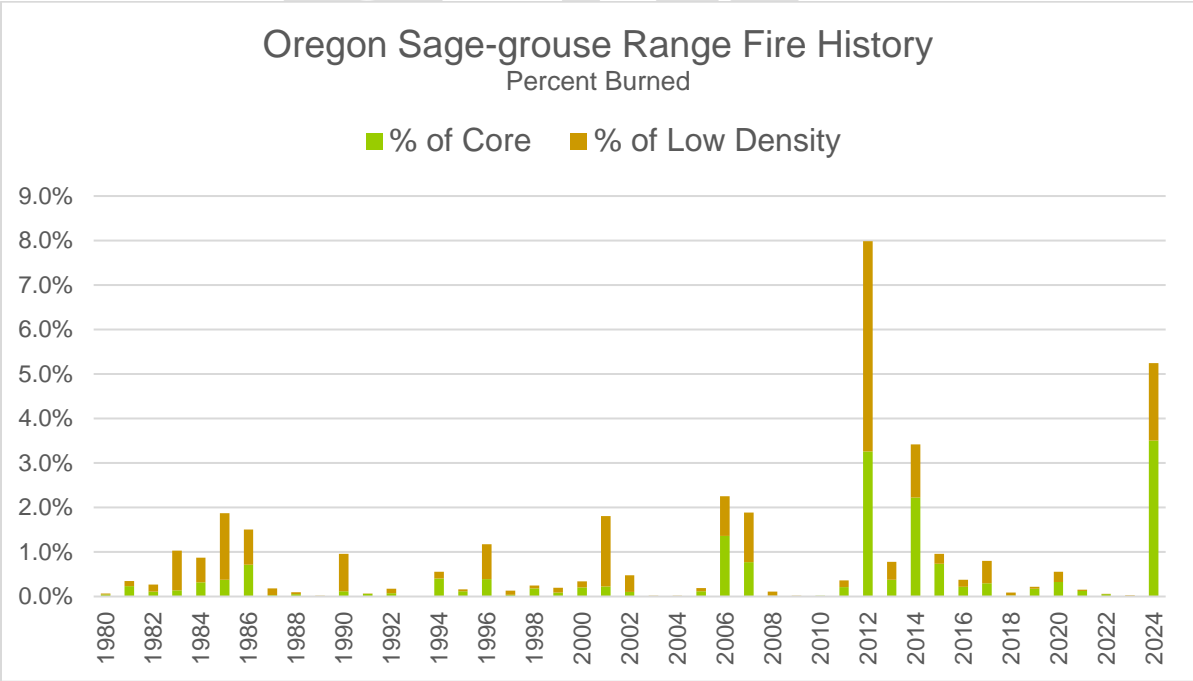


Figure 5.4. Percent of sage-grouse core and low density habitat burned in range fires (1980-2024).

Fuel breaks to control the spread of range fires are increasingly being implemented, but the large-scale impact of this practice comes with concerns for increasing fragmentation and removal of late-stage structural classes of sagebrush. Fuel breaks help facilitate fire suppression by modifying fuels and allowing safe access points for firefighters, and is an increasing management tool of the BLM. A meta-analysis of fuel break performance from 1985-2018 in the western U.S. found fuel breaks were less successful in areas with low resistance and resilience, in areas with more woody fuels, and in high temperature/low precipitation conditions (Weise et al. 2023). Fuel breaks were more effective in areas dominated by fine fuels and were more accessible. Maintenance and fuel break type were also related to performance. There is a need for improved knowledge on the optimum design of fuel breaks to minimize impacts to wildlife while providing an important function in limiting the spread of range fires (Shinneman et al. 2018).

Sage-grouse Habitat Needs

Habitat needs for sage-grouse vary by annual life history activities, but sagebrush is the most crucial. The leaves of sagebrush are eaten throughout the year and comprise 99% of the sage-grouse winter diet. Ideal spring nesting and brood rearing habitats include taller sagebrush (40-80 cm) with canopy coverage of 15-25%, and tall native perennial bunchgrass cover (≥ 18 cm), and abundant native forbs of at least 15% coverage (Crawford et al. 2004, Braun et al. 2005). Lekking sites are small open areas from 1/10th to 10 acres (.04 – 4.0 ha) in size, but located in the vicinity of denser escape cover (Dalke et al. 1963). Summer use areas include important mesic areas abundant with forbs and invertebrates and tall sagebrush with 10-25% canopy cover. Fall habitats are similar to late summer habitats, but birds may move up in elevation to take advantage of the remaining broadleaf forage before switching primarily to sagebrush leaves. During the winter months, sage-grouse forage nearly exclusively on sagebrush leaves, so relatively dense stands of highly palatable sagebrush plants are required. Sage-grouse are to be found on south-facing slopes and protected draws in winter where tall sagebrush still provide coverage and protection over the snow (Braun et al. 2005).

In Oregon, the dominant overstory structure is comprised of Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), low sagebrush (*A. arbuscula*), stiff sagebrush (*A. rigida*), and a small proportion of mountain big sagebrush (*A. t. vaseyana*) at higher elevations. Native understory vegetation consists of common forbs such as *Lupinus*, *Crepis*, and *Lomatium* spp. and native bunchgrasses including bluebunch wheatgrass (*Pseudoroegneria spicata*), giant wildrye (*Leymus cinereus*), Idaho fescue (*Festuca idahoensis*), and Sandberg's bluegrass (*Poa secunda*).

Landscape composition and configuration are essential considerations that can impact sage-grouse movement and space use. More homogeneous sagebrush interspersed with complimentary habitats (e.g. mesic, perennial forbs, perennial grassland) imply a lower energetic cost to achieving daily requirements. Sage-grouse are more likely to occupy large patches of sagebrush compared to small or isolated patches (Shirk et al. 2017). A study of spring habitat use by female sage-grouse in Baker and Malheur counties, Oregon found sage-grouse survival and neighborhood size decreased as the proportion of anthropogenic footprint increased, indicating that anthropogenic presence was causing avoidance behaviors and limiting utilization of the landscape (Owens et al. 2024). The same study found decreased female survival with increasing

juniper cover. Both interspersed anthropogenic disturbance and the presence of juniper increase the risk of predation by providing linear travel corridors for mammalian predators, and perches for avian predators (Owens et al. 2024).

Aldridge et al. (2008) modeled habitat factors explaining sage-grouse extirpation and found 25% sagebrush cover within mean home range size was necessary for minimum probability population persistence (55%) and increased to over 90% probability of persistence at 70% sagebrush cover (Figure 5.5).

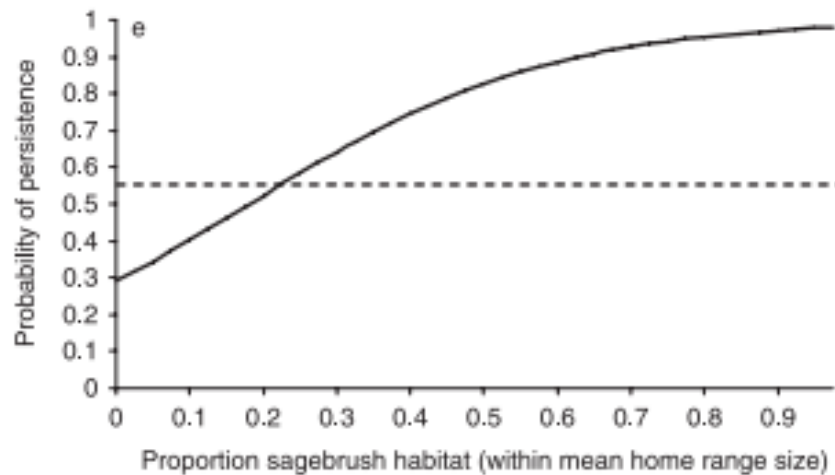


Figure 5.5. Threshold response curve for persistence of greater sage-grouse based on proportion of sagebrush habitat within mean home range size (30.77-km radius). Dashed lines indicate optimal threshold cut-off probability (0.5524) while holding other model parameters at their mean value. Persistence is predicted above the threshold, and extirpation is predicted below the threshold (Aldridge et al. 2008).

Habitat Goal Status

In the 2011 CAAS, Oregon’s sage-grouse habitat goal was set maintain at least 70% of the sage-grouse range as sagebrush habitat in advanced structural stages. Oregon is not currently meeting the habitat goal, though this metric has proven difficult to measure and fails to address overall habitat quality, including understory. In 2011, sage-grouse habitat in Oregon was comprised of approximately 70% sagebrush and 30% potential habitat, which was believed sufficient to support the previous 30 years of sage-grouse populations. This ratio was recommended as a reasonable minimum threshold in the 2001 BLM Proposed Southeastern Oregon Resource Management Plan – Final Environmental Impact Statement (EIS) (Bureau of Land Management 2001; Karl and Sadowski 2005). It was also acknowledged that later stage structural classes of sagebrush should retained for the cover benefits to multiple wildlife species. The findings of Aldridge et al. (2008; Figure 5.5) support the original habitat objectives from the 2011 CAAS, particularly at mid-scales.

The development of remote-sensing platforms, particularly the USDA Rangeland Analysis Platform (RAP; Version 3), have allowed improved analysis tools, particularly the Sagebrush Conservation Design and Threat-based Ecostate Maps (see discussion in Section 2). The ecostate

maps provide a snapshot of vegetation conditions across Oregon rangelands at 30m² pixels, incorporating the threats of invasive annual grasses, juniper encroachment, and wildfire from 1990 to present, allowing for finer-scale scrutiny of habitat. The categories are described in Table 5.1.

Ecostate	Description	Shrub Cover	Herbaceous Cover	Tree Cover
A	Good Condition Shrubland	>12%	Perennials exceed annuals by 3:1	<5%
A-C	Intermediate Condition Shrubland	>12%	Perennials dominant over annuals between 1:1 and 3:1	<5%
C	Poor Condition Shrubland	>12%	Annuals dominant	<5%
B	Good Condition Grassland	<12%	Perennials exceed annuals by 3:1	<5%
B-D	Intermediate Condition Grassland	<12%	Perennials dominant over annuals between 1:1 and 3:1	<5%
D	Poor Condition Grassland	<12%	Annuals dominant	<5%
Tree	Low-mid Cover	N/A	N/A	5-20%
Tree	High Cover	N/A	N/A	≥ 21%

Table 5.1. Summary of threat-based ecostate categories.

Based on the most recent rangeland vegetation maps (2023), sagebrush habitat across all categories (good, intermediate, and poor) covers an estimated 67% of the core sage-grouse habitat and 66% of low-density habitat for a total of 67% (ecostates A, A-C, and C; Tables 5.2, 5.3, and 5.4), falling short of the 2011 objective of 70%. An estimated 12% of the habitat (core and low density) that meets the goal for sagebrush cover is heavily compromised by invasive grasses (Ecostate C: Poor condition shrubland) and at risk of complete habitat loss following wildfire. An additional 35% of areas with adequate sagebrush cover have levels of annual grass invasion that are of concern (Ecostates A-C: Intermediate condition shrubland) if invasion increases. Cumulatively, the percentage of sagebrush habitat along with the widespread distribution of invasive species across the range warrants a high level of concern about the condition of Oregon’s sage-grouse habitat.

Classifying structure and cover provided by sagebrush is a useful approximation of sage-grouse habitat needs, but a more refined approach would consider the quality of the understory and threats associated with invasive vegetation, all relevant to overall ecosystem function. An improved objective sets higher quality habitats (Ecostates A, A-C, and B) at the 70% objective, currently 60% in core habitat, 50% in low density, and 57% total (Tables 5.2, 5.3, and 5.4).

First, the remaining high quality ecostates in core areas must be protected before achieving growth. Ecostate A habitats in Oregon sage-grouse range have declined alarmingly between 1990 and 2023 from 64% to 24% in core habitats, 55% to 13% in low density habitat, and 61% to 20% overall while other poorer quality habitats gained acreage (Tables 5.2, 5.3, and 5.4). This loss can

be attributed to the increased frequency and scale of wildfire and subsequent conversion to lower quality categories, the steady invasion of conifers, and the conversion of understory to invasive annual grasses with or without the aid of fire. Wildfires have cumulatively burned approximately 1.67M acres of core sage-grouse habitat in Oregon between 1990-2023 and 1.13M acres of low density habitat (Table 5.6, Figure 5.13), which only partially accounts for the 5.81M acres of Ecostate A lost since 1990 in core, and 3.57M acres lost in low density habitats. Tree cover has increased in both habitats by approximately 672,000 acres in the same time period. Conversion to poor condition shrubland and poor condition grassland accounts for 5.0M acres of higher quality habitat lost since 1990, overshadowing other threats.

The recovery of habitats from disturbance during the 22-year period from 2000-2021 was exacerbated by the driest period on record for Oregon in the past 1,200 years (Oregon Water Resources Department 2023). Impacts from this megadrought result in drying of groundwater supplies, soils, surface-water bodies without normal recharge, dried vegetation susceptible to fire, and stressed wildlife. A visual comparison of the distribution of ecostate change is shows the entire range is impacted to various degrees, with more severe changes seen within recent fire scars (Figures 5.6 – 5.11). The impact of a 22-year mega-drought on the state of vegetation across sage-grouse range is apparent when looking at the scale of change. Some habitats exhibit more resistance and resilience than others when withstanding and recovering from external disturbances. These habitats tend to be those with deeper, cooler soils and better moisture conditions, often found in higher elevation shrub-steppe.

CORE HABITAT	Acreage			% of Total Acreage			Acreage Change		
	1990	2003	2023	1990	2003	2023	1990-2003	2003-2023	1990-2023
A: Good condition shrubland	4,953,686	2,927,818	1,853,885	64.3	38.3	24.4	(2,025,868)	(1,073,933)	(3,099,801)
A-C: Intermediate condition shrubland	1,225,985	2,425,596	2,612,892	15.9	31.7	34.4	1,199,611	187,296	1,386,907
C: Poor condition shrubland	29,111	332,999	676,647	0.4	4.4	8.9	303,888	343,648	647,536
B: Good condition grassland	326,687	332,717	115,951	4.2	4.3	1.5	6,030	(216,766)	(210,736)
B-D: Intermediate condition grassland	425,622	769,887	728,454	5.5	10.1	9.6	344,265	(41,433)	302,832
D: Poor condition grassland	32,417	258,465	771,110	0.4	3.4	10.2	226,048	512,645	738,693
Tree: low-mid cover	705,638	605,612	832,930	9.2	7.9	11.0	(100,026)	227,318	127,292
Tree: high cover	94,372	139,616	201,182	3.3	2.9	3.4	45,244	61,566	106,810

Table 5.2. Comparison of threat-based ecostate composition within Oregon sage-grouse core habitats (2023 map) during 3 time periods: 1990, 2003, and 2023.

LOW DENSITY	Acreage			% of Total Acreage			Acreage Change		
	1990	2003	2023	1990	2003	2023	1990-2003	2003-2023	1990-2023
A: Good condition shrubland	2,509,107	1,366,997	610,540	54.5	29.8	13.4	(1,142,110)	(756,457)	(1,898,567)
A-C: Intermediate condition shrubland	1,148,923	1,570,458	1,629,517	24.9	34.3	35.9	421,535	59,059	480,594
C: Poor condition shrubland	38,628	383,246	770,009	0.8	8.4	17.0	344,618	386,763	731,381
B: Good condition grassland	125,037	162,285	49,537	2.7	3.5	1.1	37,248	(112,748)	(75,500)
B-D: Intermediate condition grassland	273,300	419,410	352,367	5.9	9.1	7.8	146,110	(67,043)	79,067
D: Poor condition grassland	44,543	282,924	605,432	1.0	6.2	13.3	238,381	322,508	560,889
Tree: low-mid cover	466,622	399,724	524,070	10.1	8.7	11.5	(66,898)	124,346	57,448
Tree: high cover	71,117	91,718	134,729	3.3	2.8	3.3	20,601	43,011	63,612

Table 5.3. Comparison of threat-based ecostate composition within Oregon sage-grouse low density habitats (2023 map) during 3 time periods: 1990, 2003, and 2023.

TOTAL HABITAT	Acreage			% of Total Acreage			Acreage Change		
	1990	2003	2023	1990	2003	2023	1990-2003	2003-2023	1990-2023
A: Good condition shrubland	7,462,793	4,294,815	2,464,425	60.6	35.1	20.3	(3,167,978)	(1,830,390)	(4,998,368)
A-C: Intermediate condition shrubland	2,374,908	3,996,054	4,242,409	19.3	32.7	35.0	1,621,146	246,355	1,867,501
C: Poor condition shrubland	67,739	716,245	1,446,656	0.6	5.9	11.9	648,506	730,411	1,378,917
B: Good condition grassland	451,724	495,002	165,488	3.7	4.0	1.4	43,278	(329,514)	(286,236)
B-D: Intermediate condition grassland	698,922	1,189,297	1,080,821	5.7	9.7	8.9	490,375	(108,476)	381,899
D: Poor condition grassland	76,960	541,389	1,376,542	0.6	4.4	11.3	464,429	835,153	1,299,582
Tree: low-mid cover	1,172,260	1,005,336	1,357,000	9.5	8.2	11.2	(166,924)	351,664	184,740
Tree: high cover	7,462,793	4,294,815	2,464,425	60.6	35.1	20.3	(67,168)	(104,797)	(171,965)

Table 5.4. Comparison of threat-based ecostate composition within total Oregon sage-grouse (core and low density habitats; 2023 map) during 3 time periods: 1990, 2003, and 2023.

Sage Grouse Core Habitat Ecostates - 1990

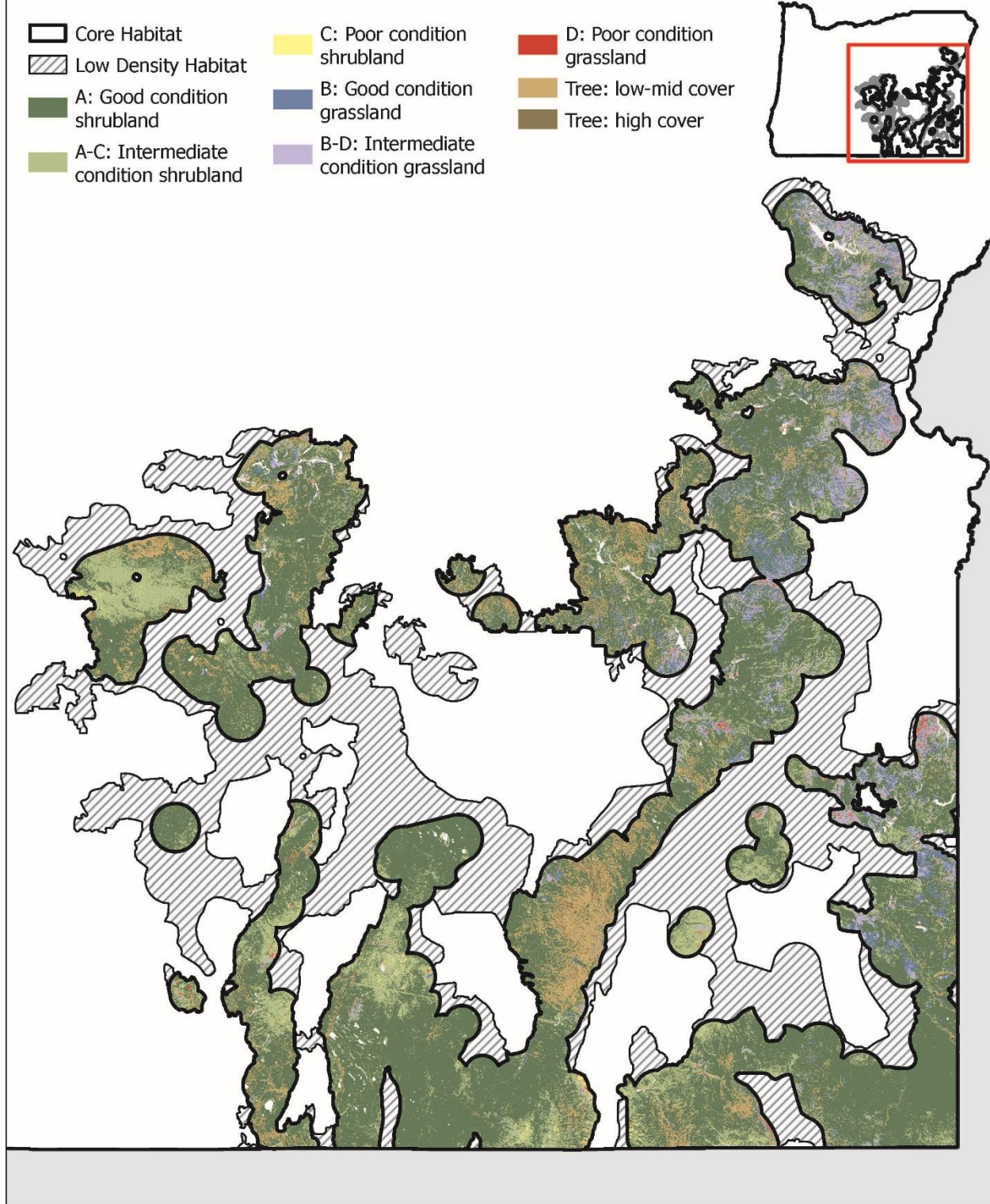


Figure 5.6. Distribution of Ecostate categories in 1990 within sage-grouse core habitat.

Sage Grouse Core Habitat Ecostates - 2003

- Low Density Habitat
- A: Good condition shrubland
- A-C: Intermediate condition shrubland
- C: Poor condition shrubland
- B: Good condition grassland
- B-D: Intermediate condition grassland
- D: Poor condition grassland
- Tree: low-mid cover
- Tree: high cover

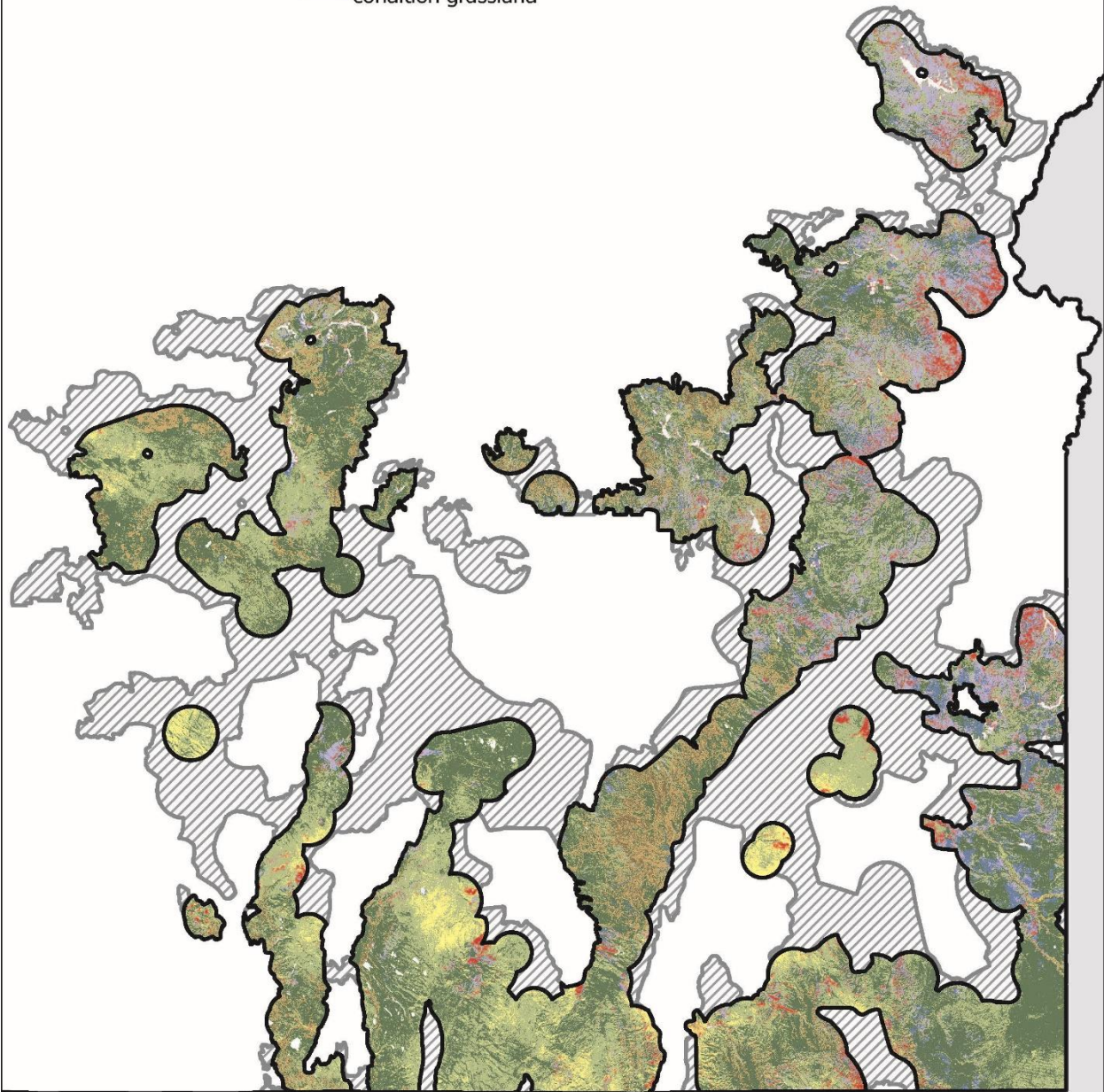
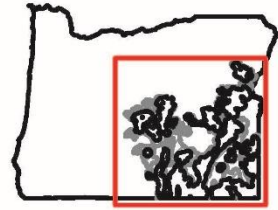


Figure 5.7. Distribution of Ecostate categories in 2003 within sage-grouse core habitat.

Sage Grouse Core Habitat Ecostates - 2023

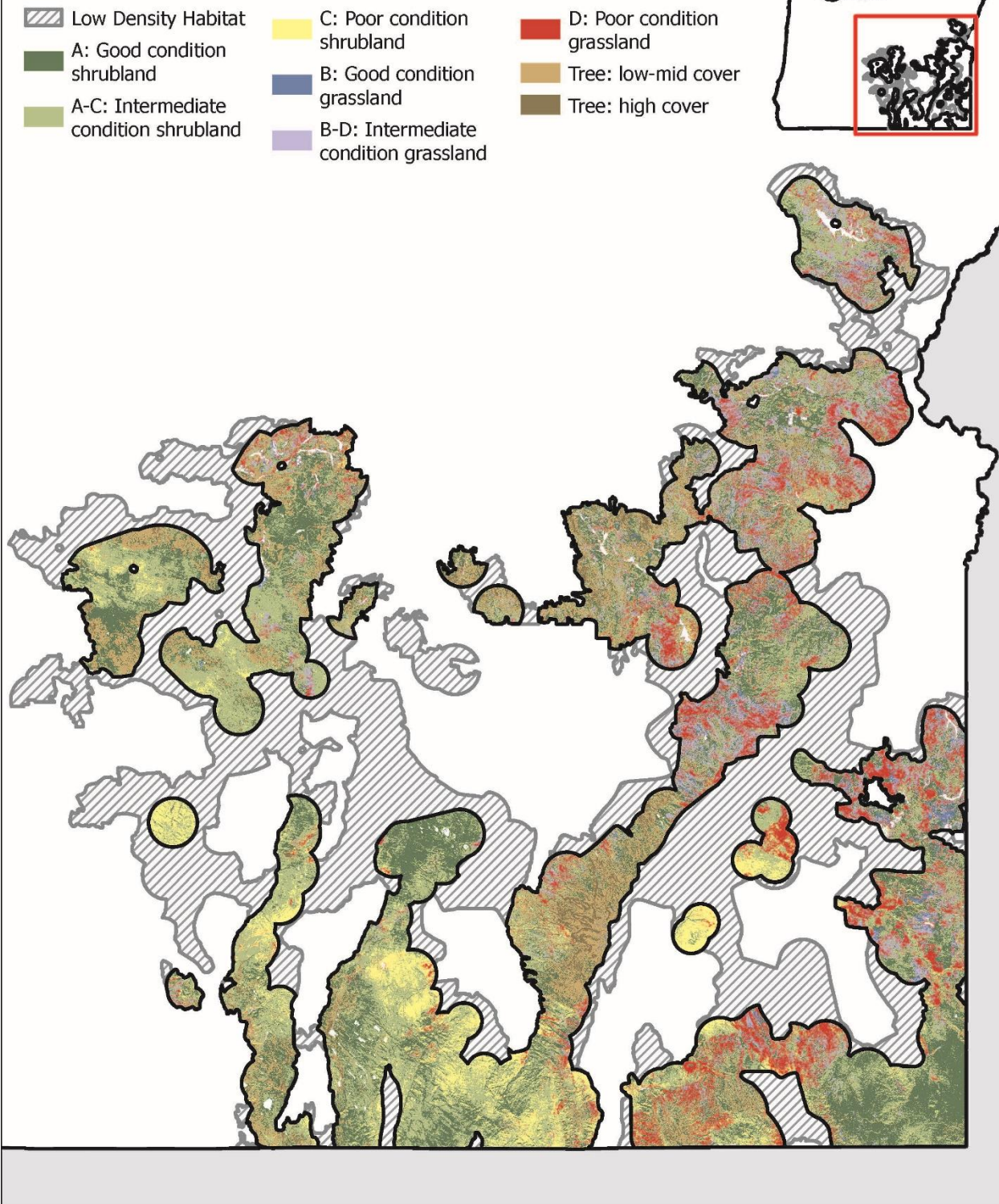


Figure 5.8. Distribution of Ecostate categories in 2023 within sage-grouse core habitat.

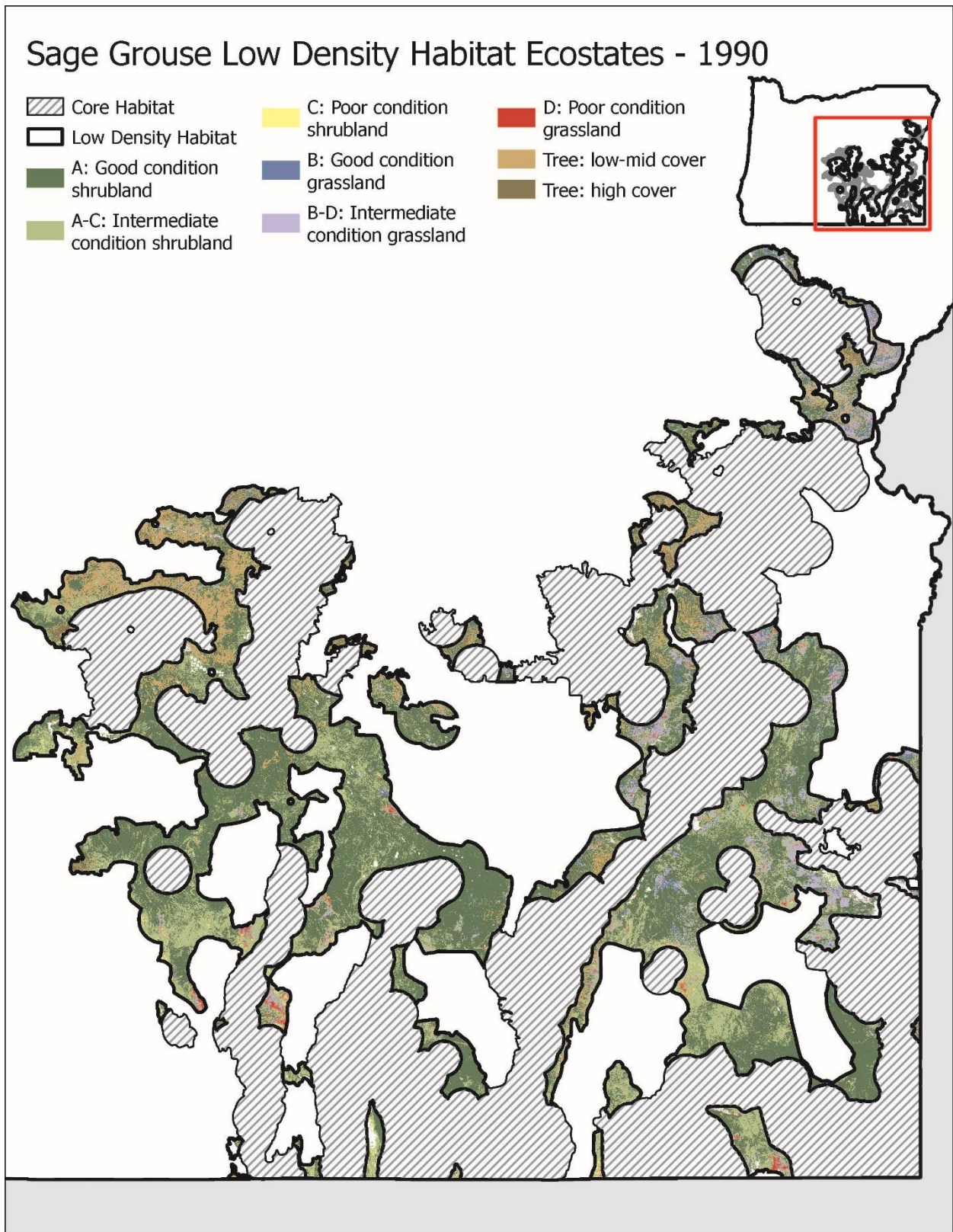


Figure 5.9. Distribution of Ecostate categories in 1990 within sage-grouse low density habitat.

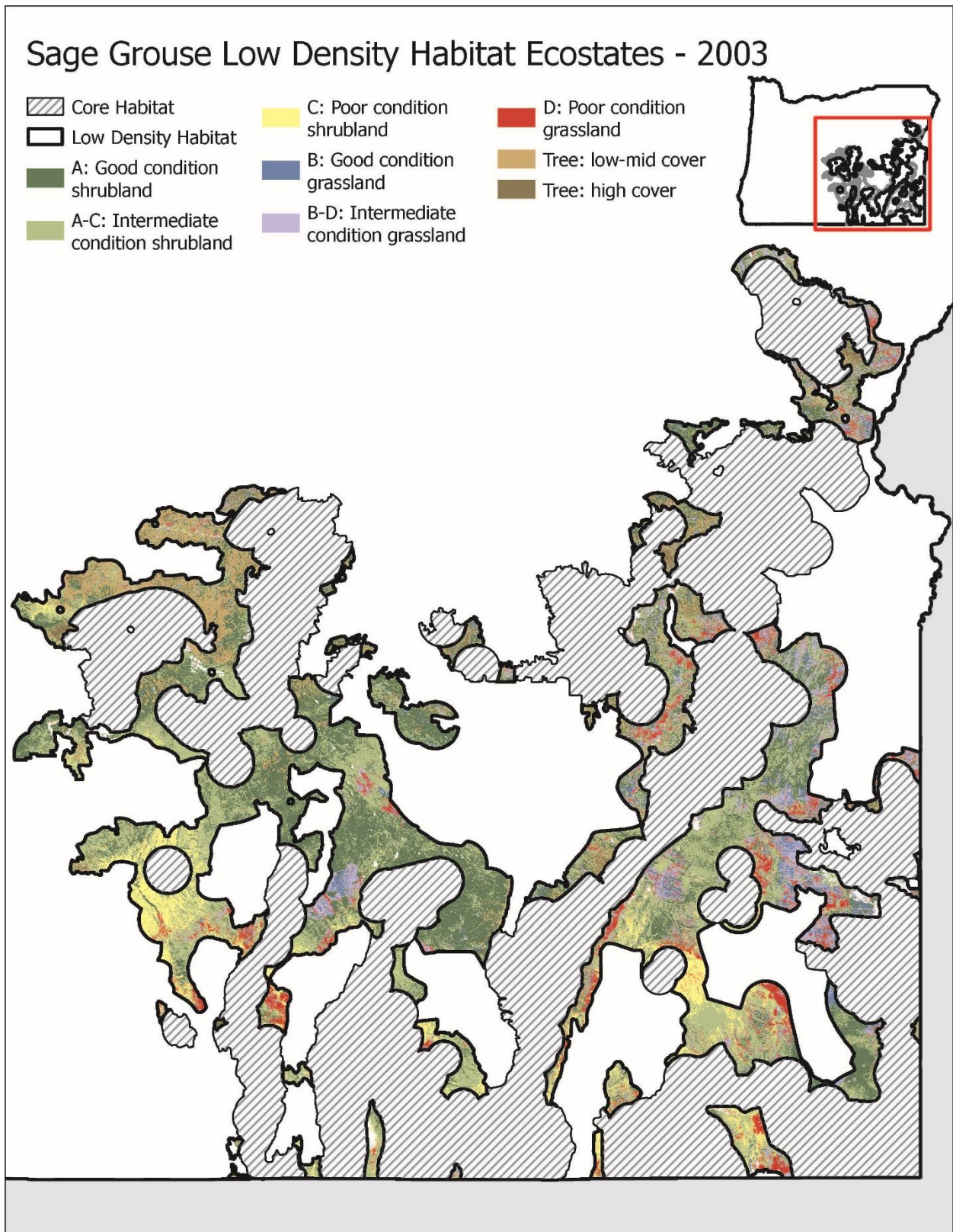












Figure 5.10. Distribution of Ecostate categories in 2003 within sage-grouse low density habitat.

Sage Grouse Low Density Habitat Ecostates - 2023

-  Core Habitat
-  Low Density Habitat
-  A: Good condition shrubland
-  A-C: Intermediate condition shrubland
-  C: Poor condition shrubland
-  B: Good condition grassland
-  B-D: Intermediate condition grassland
-  D: Poor condition grassland
-  Tree: low-mid cover
-  Tree: high cover

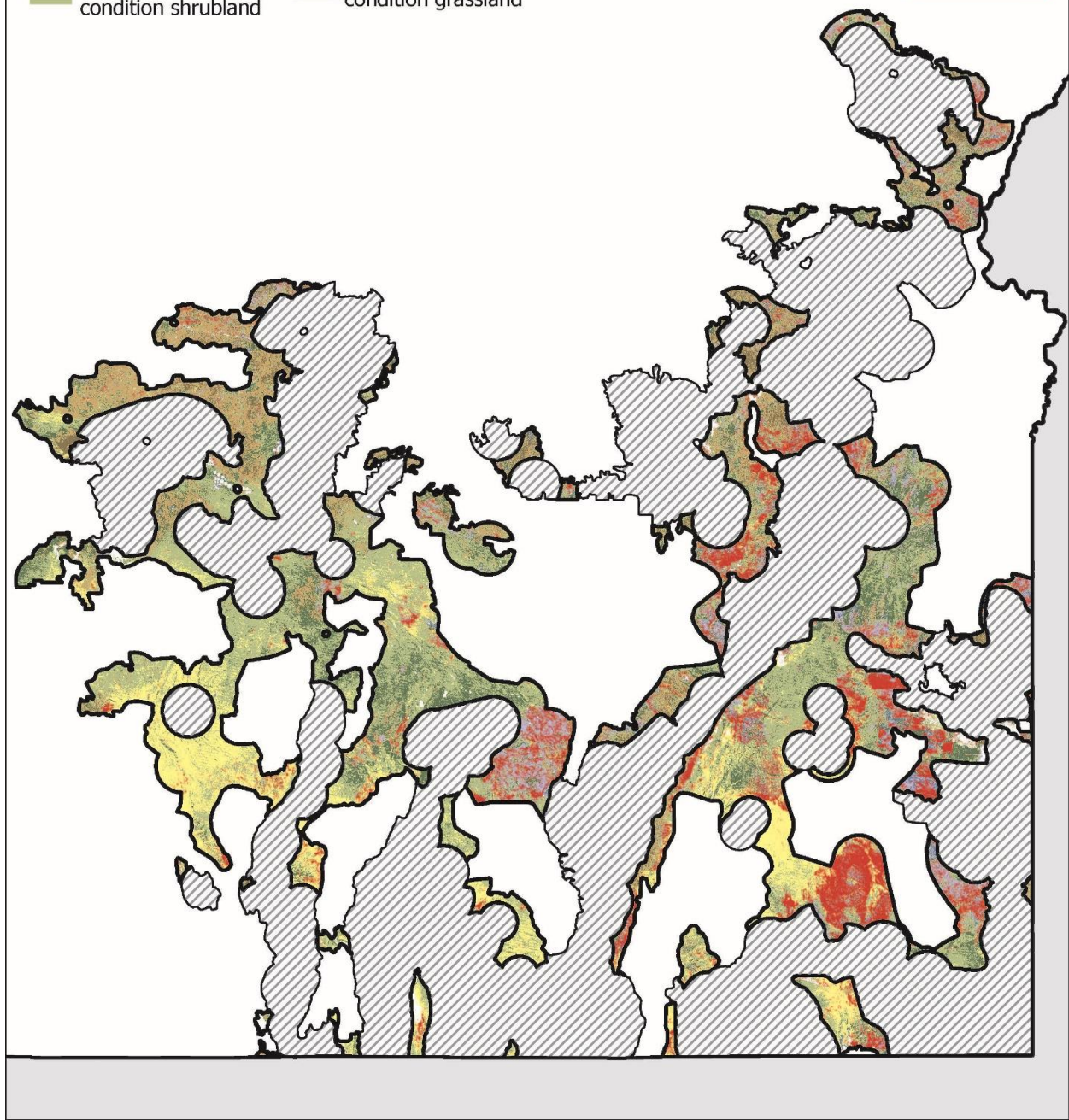
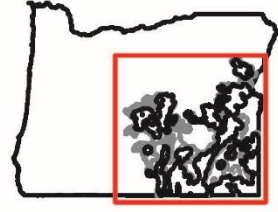


Figure 5.11. Distribution of Ecostate categories in 2023 within sage-grouse low density habitat.

Examining the distribution of ecostates at the PAC-level shows those PACs that are most severely impacted and those that are at or near the objective of 70% Ecostates A, A-C, and B (Table 5.5).

PAC	A: Good condition shrubland	A-C: Intermediate condition shrubland	C: Poor condition shrubland	B: Good condition grassland	B-D: Intermediate condition grassland	D: Poor condition grassland	Tree: low-mid cover	Tree: high cover	Proportion of A, A-C, and B
Tucker Hill	5,199	12,821	2,107	155	2,788	2,329	3,277	1,333	0.61
Sheepshead	1,056	6,478	40,991	9	12	820	71	-	0.15
Diablo	1,781	18,395	35,586	38	25	20	357	-	0.36
Warner	67,220	136,812	40,177	128	731	2,844	63,296	13,801	0.63
Saddle Butte	1,938	38,951	36,149	85	2,202	27,056	6	-	0.39
Soldier Creek	97,757	116,962	14,530	14,717	64,141	76,098	14,863	1,682	0.57
Burns	13,727	16,141	618	597	4,306	1,414	27,201	10,528	0.41
Brothers	116,441	136,723	21,332	94	1,053	1,648	95,229	11,055	0.66
Paulina	147,048	196,359	11,607	3,873	35,558	31,399	88,148	16,269	0.65
Bully Creek	65,502	134,754	10,971	12,802	114,343	88,235	54,538	9,399	0.43

Baker	35,601	106,339	4,959	6,066	67,425	34,749	11,500	557	0.55
North Wagontire	38,767	159,477	16,149	680	8,244	3,577	41,315	1,752	0.74
Dry Valley/Jack Mountain	121,037	62,563	5,506	100	2,728	2,301	135	-	0.95
Beatys	220,855	388,536	154,649	474	3,921	10,937	31,821	6,104	0.75
Pueblos	62,856	138,854	118,785	1,126	4,481	15,082	11,564	631	0.57
Steens	90,673	108,345	25,409	4,569	24,640	32,308	183,256	75,269	0.37
Trout Creeks	85,431	129,631	65,293	4,334	31,734	108,893	41,542	6,892	0.46
Louse Canyon	279,266	164,917	19,986	3,323	25,430	44,700	10,898	316	0.82
Cow Lakes	70,023	68,253	3,323	21,481	79,267	82,676	9,087	252	0.48
Crowley	141,257	173,136	9,200	24,637	118,273	96,037	18,176	3,021	0.58
Drewsey	80,351	109,253	9,272	7,793	45,195	43,627	94,619	37,005	0.46
Cow Valley	83,594	111,692	3,265	8,762	91,185	60,624	29,501	3,859	0.52
Juniper Mountain	26,032	76,648	26,421	56	494	3,375	1,875	1,185	0.75

Table 5.5. Threat-based Ecostate composition (acres) of Oregon sage-grouse PACs. (2023).

Fire Perimeter	1990-2003 Cumulative burned acres	2003-2023 Cumulative burned acres	1990-2023 Cumulative burned acres	1990 -2003 % burned	2003-2023 % burned	1990-2023 % burned
Core Habitat	327,865	797,480	1,125,345	1.9%	9.5%	11.4%
Low Density Habitat	280,845	1,392,390	1,673,235	1.9%	4.5%	6.4%
Total	608,710	2,189,870	2,798,580	2.6%	9.5%	12.3%

Table 5.6. Cumulative and percent acres burned within core, low density, and total sage-grouse habitat in Oregon during the periods 1990-2003, 2003-2023, and 1990-2023.

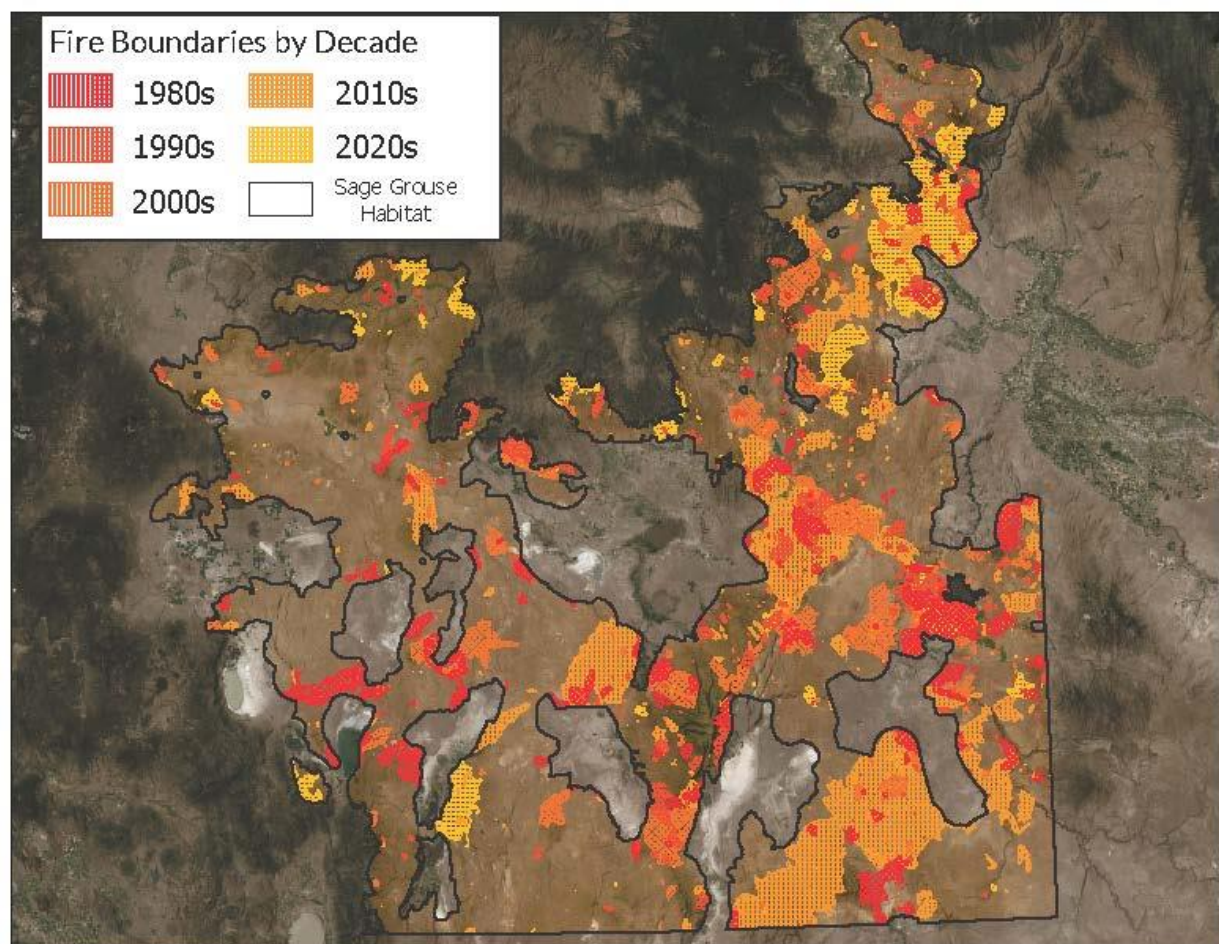


Figure 5.12. Fire boundaries within sage-grouse habitat (all categories) by decade (1980s – 2020s).

While ODFW is responsible for the management of the state’s sage-grouse population, the department manages very little of the actual habitat (~0.02%). The vast majority of Oregon’s sage-grouse range is owned and managed by the BLM (72%) and private landowners (20.5%), and less so by the Oregon Department of State Lands, U.S. Fish and Wildlife Service, and U.S. Forest Service (Table 5.7). This situation emphasizes the importance of cooperation and collaboration among land managers and highlights the need to monitor the quality and quantity of habitat across the range of ownership boundaries.

Land Manager	Core Acres (% of Total Core)	Low Density Acres (% of Low Density)	Total Acres (% of Total)
BLM	5,558,884 (69.9%)	3,616,460 (75.3%)	9,175,344 (72.0%)
Private	1,780,647 (22.4%)	837,489 (17.4%)	2,618,136 (20.5%)
ODSL	266,205 (3.3%)	229,070 (4.8%)	495,275 (3.9%)
USFWS	247,183 (3.1%)	15,541 (0.3%)	262,724 (2.1%)
USFS	53,112 (0.7%)	65,939 (1.4%)	119,051 (0.9%)
All Others	42,471 (0.5%)	36,955 (0.8%)	79,427 (0.6%)

Table 5.7. Approximate distribution of land management in Oregon sage-grouse core, low-density, and total range.

Summary

Sage-grouse require the structure of sagebrush and a healthy understory of forbs and perennial grasses. Sagebrush habitat has suffered conversion to other habitats and a decline in existing habitat quality in Oregon. A minimum of 70% sagebrush cover in high to intermediate states is necessary to maximize sage-grouse population persistence. Oregon is not currently achieving this objective primarily due to the loss of sagebrush to fire and subsequent conversion to poor quality ecostates, in addition to historic removal and conversion. Prioritizing protection of existing high quality habitats from conversion to other ecostates is critical.

Recommendations

1. Adopt “Threat-Based Ecostates” as a tool for monitoring habitat quality and quantity.
2. Objective 1: Manage a minimum of 70% of greater sage-grouse range for sagebrush habitat in ecostates A (good condition shrubland), B (good condition grassland) and A-C (intermediate condition shrubland) and prioritize the protection and growth of these areas.
3. Objective 2: Manage sagebrush habitats to achieve a net conservation gain of intact sagebrush communities (ecostate A) and maintain stable or increasing amounts of sagebrush and perennial grassland habitats in ecostates A, B, and A-C, at the statewide and PAC-scale.

4. Engage with BLM and other land managers to design fuel breaks that optimize function while minimizing direct wildlife habitat impacts. a
5. Engage with land manager partners to advise on best potential practices to get habitat up to healthy standards.
6. Support research efforts to understand sage-grouse habitat interactions, experimental invasives control, fire and fuel breaks, and conservation and restoration of sagebrush habitats.

DRAFT

DRAFT