

Monitoring Land Cover Changes in California

California Land Cover Mapping and Monitoring Program



Cascade Northeast Project Area

Cycle II

December 2003

Land Cover Monitoring Team

Lisa Levien, USDA Forest Service, Forest Health Protection

*Chris Fischer, California Department of Forestry and Fire Protection
Fire and Resource Assessment Program*

Lianne Mahon, UC Berkeley, DANR Wildlands Resource Center

Sean Parks, Space Imaging

Barbara Maurizi, Space Imaging

Pauline Longmire, Space Imaging

James Suero, Space Imaging

Acknowledgments

California Department of Forestry and Fire Protection, Fire and Resource Assessment Program

William Stewart, FRAP Chief

Robin Marose, Chief Technology Officer

Dean Cromwell, Research Manager

Russ Henley, Watershed Chief

USDA Forest Service

Leigh Beck, Director, State and Private Forestry

John Neisess, Assistant Director, State and Private Forestry

Sheri Smith, Forest Health Protection, Northeastern Shared Service Area, Entomologist

Dave Schultz, Forest Health Protection, Northern Shared Service Area, Entomologist

TABLE OF CONTENTS

Summary and Highlights	iii
Introduction	1
Change Detection Monitoring Procedures	4
Interpreting Results.....	7
Discussion of Results: Entire Project Area	10
Conifers	10
Hardwoods	13
Shrub/Chaparral	15
Grass/Forb/NFO	18
All Lifeforms	19
Discussion of Results: Forest Service Land	20
All Vegetation	20
Conifers	21
Hardwoods.....	24
Shrub/Chaparral	25
Data Availability	27
Terminology	28
Literature Cited	29
Appendix A – Data Sources	30
Appendix B – Methodology	34
Appendix C – Data Accuracy	36
Appendix D – WHR Type Descriptions	38
Appendix E – WHR Vegetation Hierarchy	40
Appendix F – CALVEG Codes	41
Appendix G – Detailed Maps and Tables	42
Project Area Maps and Tables	43
County Maps and Tables	60
National Forest Maps and Tables	132

FIGURES AND TABLES

Figures

Figure 1 – Location and extent of project areas with monitoring schedule	1
Figure 2 – Land ownership distribution	2
Figure 3 – Location of Cascade Northeast Project Area and corresponding land ownership ..	2
Figure 4 – Proportion of each lifeform in project area	4
Figure 5 – Portion of change map with typical harvest pattern in the Hermit Butte quadangle, Modoc County	6
Figure 6 – Comparison of two fires that burned in chaparral dominated areas	8
Figure 7 – Acres of vegetation change by lifeform	10

Tables

Table 1 – Acres of County Analyzed by Private and Public Ownership	3
Table 2 – Change Classes and Corresponding Description	7
Table 3 – Acres of Conifer Canopy Cover Change by WHR Type	11
Table 4 – Acres of Conifer Change by Cause and WHR Type	11
Table 5 – Acres of Conifer Canopy Cover Change by County	12
Table 6 – Acres of Conifer Change by Cause and County	12
Table 7 – Acres of Conifer Canopy Cover Change by Owner	13
Table 8 – Acres of Conifer Change by Cause and Owner	13
Table 9 – Acres of Hardwood Canopy Cover Change by WHR Type	14
Table 10 – Acres of Hardwood Change by Cause and WHR Type	14
Table 11 – Acres of Hardwood Canopy Cover Change by County	14
Table 12 – Acres of Hardwood Change by Cause and County	15
Table 13 – Acres of Hardwood Canopy Cover Change by Owner	15
Table 14 – Acres of Hardwood Change by Cause and Owner	15
Table 15 – Acres of Shrub/Chaparral Cover Change by WHR Type	16
Table 16 – Acres of Shrub/Chaparral Change by Cause and WHR Type	16
Table 17 – Acres of Shrub/Chaparral Cover Change by County	17
Table 18 – Acres of Shrub/Chaparral Change by Cause and County	17
Table 19 – Acres of Shrub/Chaparral Cover Change by Owner	17
Table 20 – Acres of Shrub/Chaparral Change by Cause and Owner	18
Table 21 – Acres of Grass/Forb and NFO Change by Cause and County	18
Table 22 – Acres of Grass/Forb and NFO Change by Cause and Owner	19
Table 23 – Acres of All Lifeform Change by Cause and County	19
Table 24 – Acres of Change of All Vegetation by National Forest	20
Table 25 – Acres of Change of All Vegetation by Cause and National Forest	21
Table 26 – Acres of Conifer Canopy Cover Change by National Forest and CALVEG Type	22
Table 27 – Acres of Conifer Change by Cause, National Forest and CALVEG Type	23
Table 28 – Acres of Hardwood Canopy Cover Change by National Forest and CALVEG Type	24
Table 29 – Acres of Hardwood Change by Cause, National Forest and CALVEG Type	25
Table 30 – Acres of Shrub/Chaparral Cover Change by National Forest and CALVEG Type	26
Table 31 – Acres of Shrub/Chaparral Change by Cause, National Forest and CALVEG Type	27

SUMMARY & HIGHLIGHTS

The California Land Cover Mapping and Monitoring Program (LCMMP) uses Landsat Thematic Mapper (TM) satellite imagery to map vegetation and derive land cover change (losses and gains) within five-year time periods. This report focuses on land cover changes between 1994 and 1999 in the Cascade Northeast project area, which is one of the five project areas in the state. The LCMMP uses Landsat Thematic Mapper (TM) satellite imagery, which has a spatial resolution of 900 square meters (each pixel within a TM image is 30 meters on each side), or about 1/5 of an acre, to detect changes in land cover.

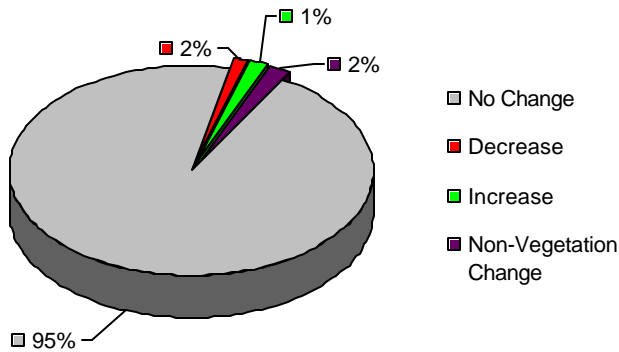
The Cascade Northeast project area covers 11.9 million acres, including all or most of Modoc, Lassen, and Siskiyou Counties, while partially covering 7 additional counties. It also completely encompasses three national forests (Klamath, Lassen, and Modoc), a portion of the Shasta-Trinity National Forest and other federal, state, county and privately owned lands. This report assesses vegetation cover changes on 10.8 million acres within hardwood, conifer, shrub/chaparral and grass/forb vegetation types. Although the total project area spans 11.9 million acres, 1.1 million acres are not forest, shrub/chaparral or grass/forb (e.g., urban, agriculture, barren and water) and are not assessed in this report.

Change classes for LCMMP monitoring data are based on canopy cover (cc) change. For hardwood and conifer canopy cover loss, change classes are broken down into three categories –71 to –100% CC (71 to 100% decrease in canopy cover), -41 to –70% CC and –16 to –40% CC. For hardwood and conifer canopy cover gain, change classes are broken down into two categories: +16 to +40% CC and +41 to +100% CC. In the shrub, chaparral, grass and forb vegetation types, the change classes are quantified as a decrease or increase in vegetation cover of 16% or greater. The cause of change is also determined when possible. The monitoring data for this project area have an overall accuracy of 84.5%.

This summary provides a brief overview of the analysis performed for this project area. Types of changes (increases and decreases in vegetation) and causes of change are highlighted for all lifeforms throughout the project area. The conifer lifeform is the predominant lifeform within the Cascade Northeast project area and, as such, displays the largest areas of both decrease and increase in vegetation. All other lifeforms (hardwood, shrub/chaparral, and grass/forb) do not display a significant change between 1994 and 1999. Highlights for conifer change and cause information are broken down by county and national forest. A more in depth review of this analysis, as well as analysis for all other lifeforms can be found in the “Discussion of Results”, as well as in Appendix G.

SUMMARY & HIGHLIGHTS

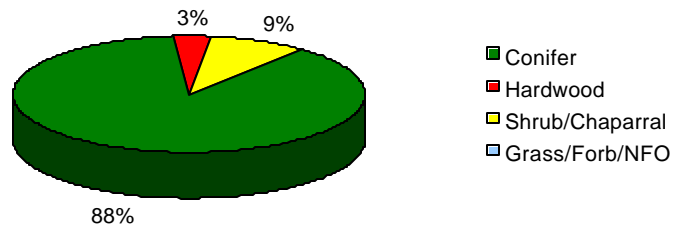
Project Area Summary



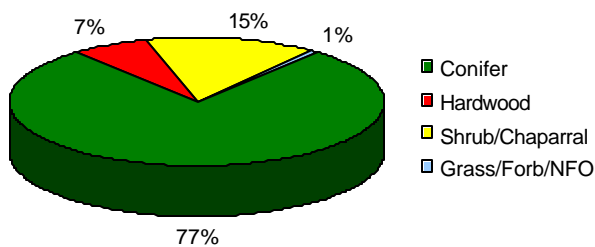
- Results show that 95% of the vegetation in the assessed 10.8 million acres does not have a detectable change between 1994 and 1999.
- Decreases across all vegetation types occur on approximately 183,100 acres. Increases occur on about 175,000 acres.

- Decreases in conifer account for about 160,000 acres of the total decrease in vegetation.
- Hardwood and shrub/chaparral show a decrease on about 5,900 acres and 16,800 acres, respectively.

Decrease by Lifeform



Increase by Lifeform

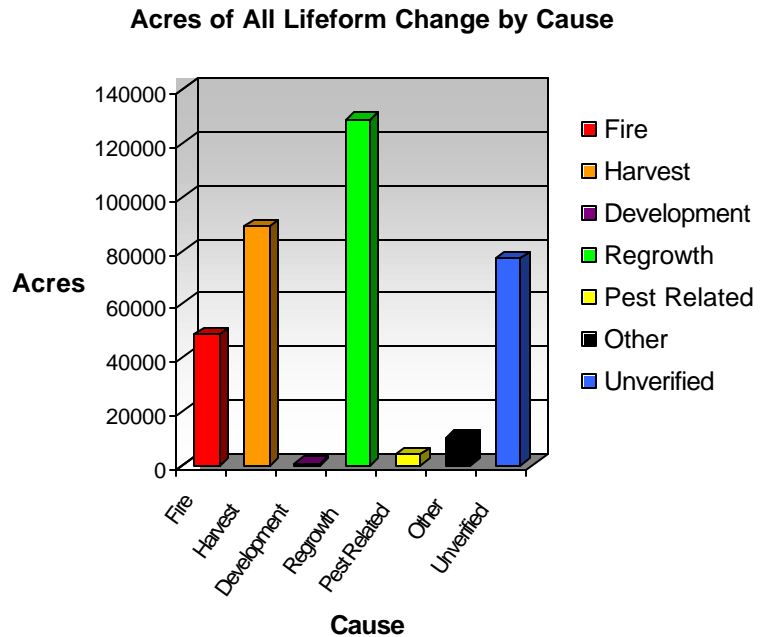


- Of the 175,000 acres of increase in vegetation, almost 136,600 acres occur in the conifer lifeform.
- Hardwood and shrub/chaparral show an increase on 11,800 acres and 26,100 acres, respectively.

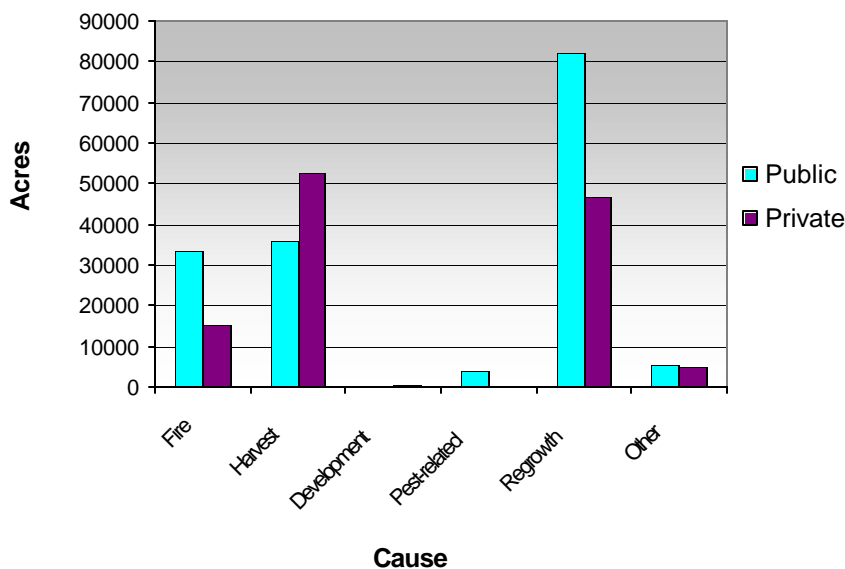
SUMMARY & HIGHLIGHTS

Change by Cause and Ownership

- Regrowth, harvest, and fire are the largest identified causes of change.
- Together regrowth and harvest account for nearly 61% of all vegetation change.
- Fire is responsible for about 14% of the total vegetation change. However, as fire nearly always results in a decrease in vegetation, it accounts for about 27% of the total decrease.
- Cause of change could not be verified on 22% of the vegetation change within the project area.



Acres of All Lifeform Change by Cause and Ownership

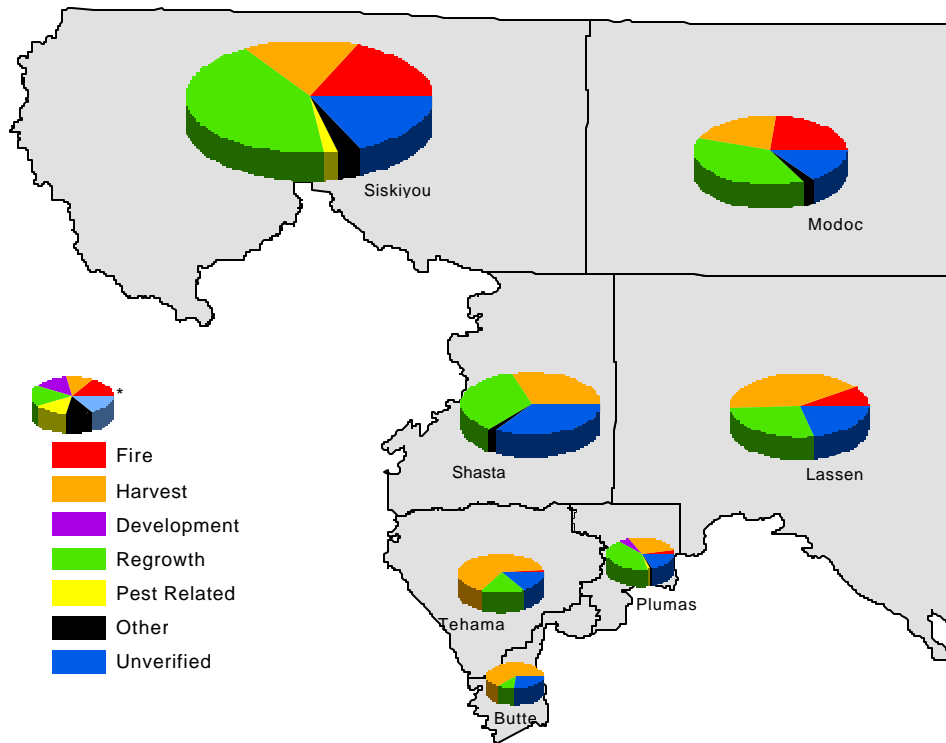


- Nearly twice as much regrowth occurs on public land as on private land.
- Harvest is responsible for a greater area of change on private land than on public land.
- The majority of change due to fire is found on public land.
- Change due to pest-related causes is verified exclusively on public land.

SUMMARY & HIGHLIGHTS

County Highlights

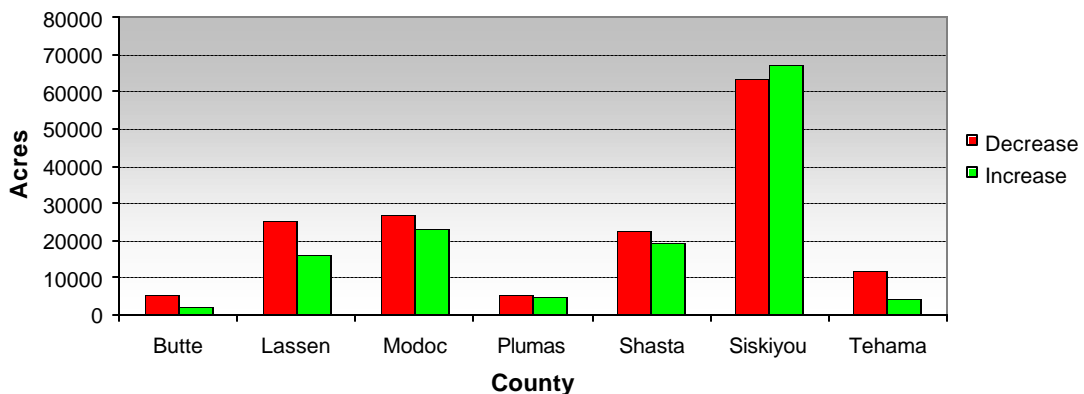
Conifer Change by Cause and County



* size in proportion to the total acres of conifer change in each county.

- Siskiyou County has the largest area of conifer change, with 130,600 acres showing a change in vegetation. This equates to 5.3% of the total conifer area in Siskiyou County.
- Modoc, Lassen and Shasta Counties show a change in conifer vegetation on about 49,900, 41,600, and 41,500 acres, respectively.
- The predominant causes of change for all 4 of these counties are regrowth and harvest. Fire also accounts for a large proportion of conifer change in Siskiyou and Modoc Counties.

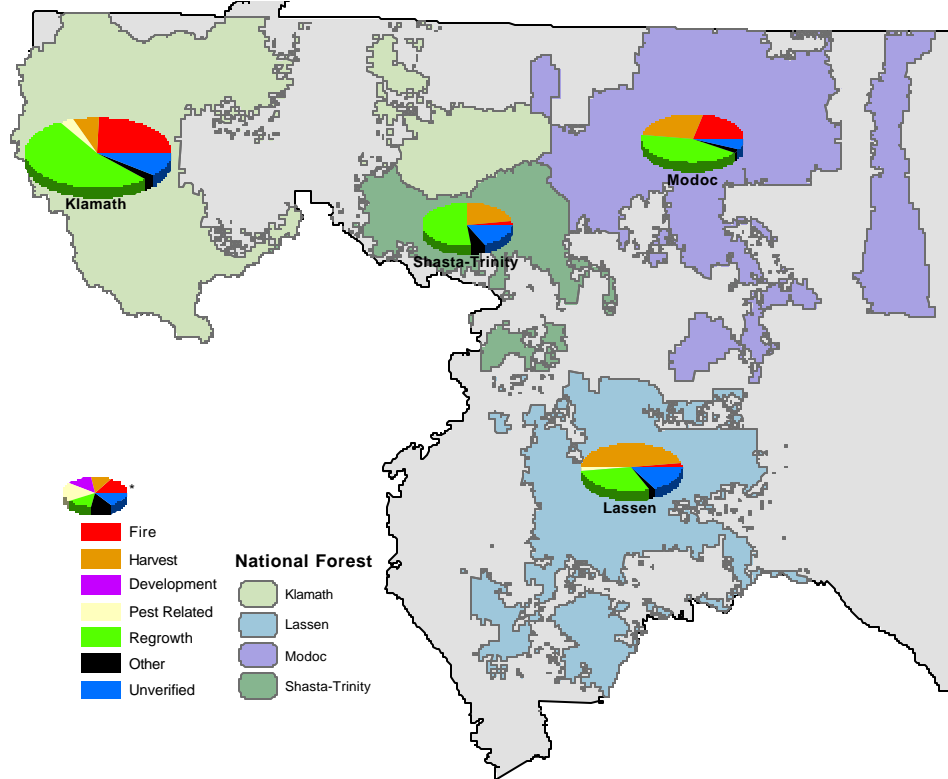
Acres of Conifer Change by County



SUMMARY & HIGHLIGHTS

National Forest Highlights

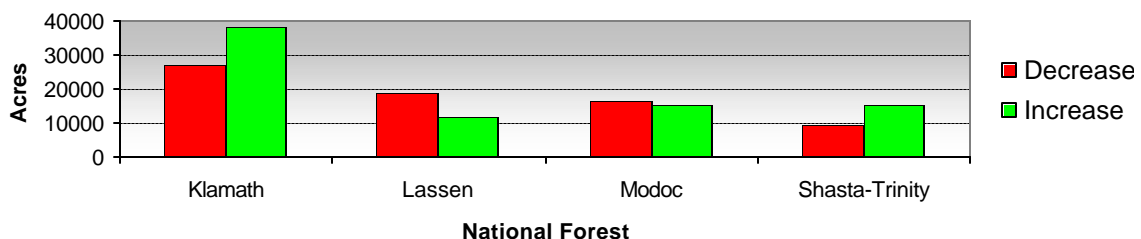
Conifer Change by Cause and National Forest



* size in proportion to the total acres of conifer change in each forest

- The largest area of pest-related decrease is found in the Klamath National Forest, with over 3,000 acres affected.
- The Klamath National Forest shows the largest area of both decrease and increase in vegetation. Most of the decrease is caused by fire, while the majority of the increase is due to regrowth.
- The Shasta-Trinity National Forest is the only forest to display a larger area of increase in vegetation than decrease.
- Over half of the decrease in the Lassen National Forest is caused by harvest.

Acres of Conifer Change by National Forest



INTRODUCTION

The California Land Cover Mapping and Monitoring Program (LCMMP¹) is a collaboration between the USDA Forest Service (FS) and the California Department of Forestry and Fire Protection (CDF) to create seamless vegetation and monitoring data across most ownerships and vegetation types within the state. This program uses Landsat Thematic Mapper (TM) satellite imagery to derive land cover change (vegetation decreases and increases) within five-year time periods. It also determines the cause of change through fieldwork, aerial photo interpretation and GIS analysis. Monitoring data created by the LCMMP quantify changes in California's landscape and provide necessary information for regional assessment across jurisdictional boundaries. These data provide consistent, high quality information to help manage, assess and protect California's diverse vegetation resources at a low per acre cost (approximately 2 cents per acre).

Monitoring of land cover change occurs in one of five distinct project areas per year (Figure 1). Analysis is complete for all project areas in the first statewide cycle. Each project area will be revisited during the next statewide cycle. Land cover monitoring maps can be downloaded from <http://frap.cdf.ca.gov/data/frapgismaps/select.asp>. Reporting is complete or in progress for all areas. Completed reports can be downloaded from <http://frap.cdf.ca.gov/titles/publications.asp>. Additionally, an interactive mapping application is available for some project areas on a CDF internet map sever (IMS) at http://frap.cdf.ca.gov/projects/land_cover/monitoring/index.html.

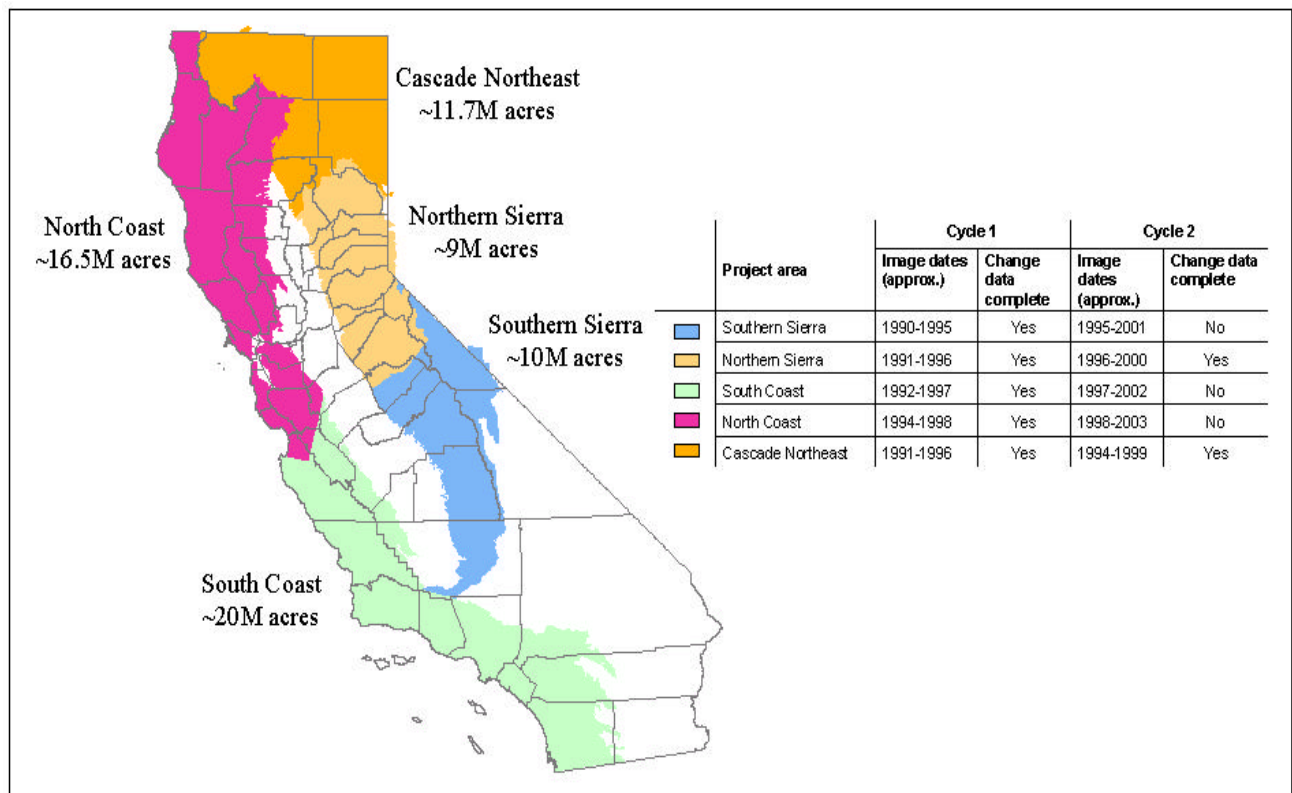


Figure 1. Location and extent of project areas with monitoring schedule.

¹For additional information visit our web pages at http://frap.cdf.ca.gov/projects/land_cover/index.html

The FS and CDF have mapping, resource management and resource protection responsibilities across much of the non-irrigated and non-urban land in the Cascade Northeast region. The FS manages most resource activities within the national forests, such as timber management, recreation, forest health programs, fire protection and grazing allotments. CDF is responsible for providing fire protection on most private and state lands, regulating timber harvests on private lands and monitoring resource conditions across all wildlands in the area. The LCMMP monitoring information provides a single consistent source of current landscape level and site-specific change to the FS and CDF as well as other interested federal agencies (e.g., Fish and Wildlife Service, National Park Service, Bureau of Land Management), state agencies (Fish and Game, Parks and Recreation, State Water Resources Control Board), county governments, city governments and other interested parties. The project area covers all or most of Lassen, Modoc and Siskiyou Counties, while partially covering seven other counties, as indicated in Table 1. It also completely encompasses three national forests (Klamath, Lassen and Modoc), a small portion of the Shasta-Trinity National Forest and other federal, state and privately owned lands (Figures 2 and 3). This report assesses land cover changes on 10.8 million acres within conifer, hardwood, shrub/chaparral and grass/forb vegetation types. Although the total project area spans 11.9 million acres of land, 1.1 million acres are not forest, shrub, chaparral or grass lands (e.g., urban, agriculture, barren and water) and are not included in this analysis.

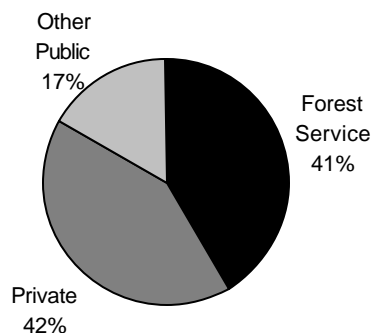


Figure 2. Land ownership distribution

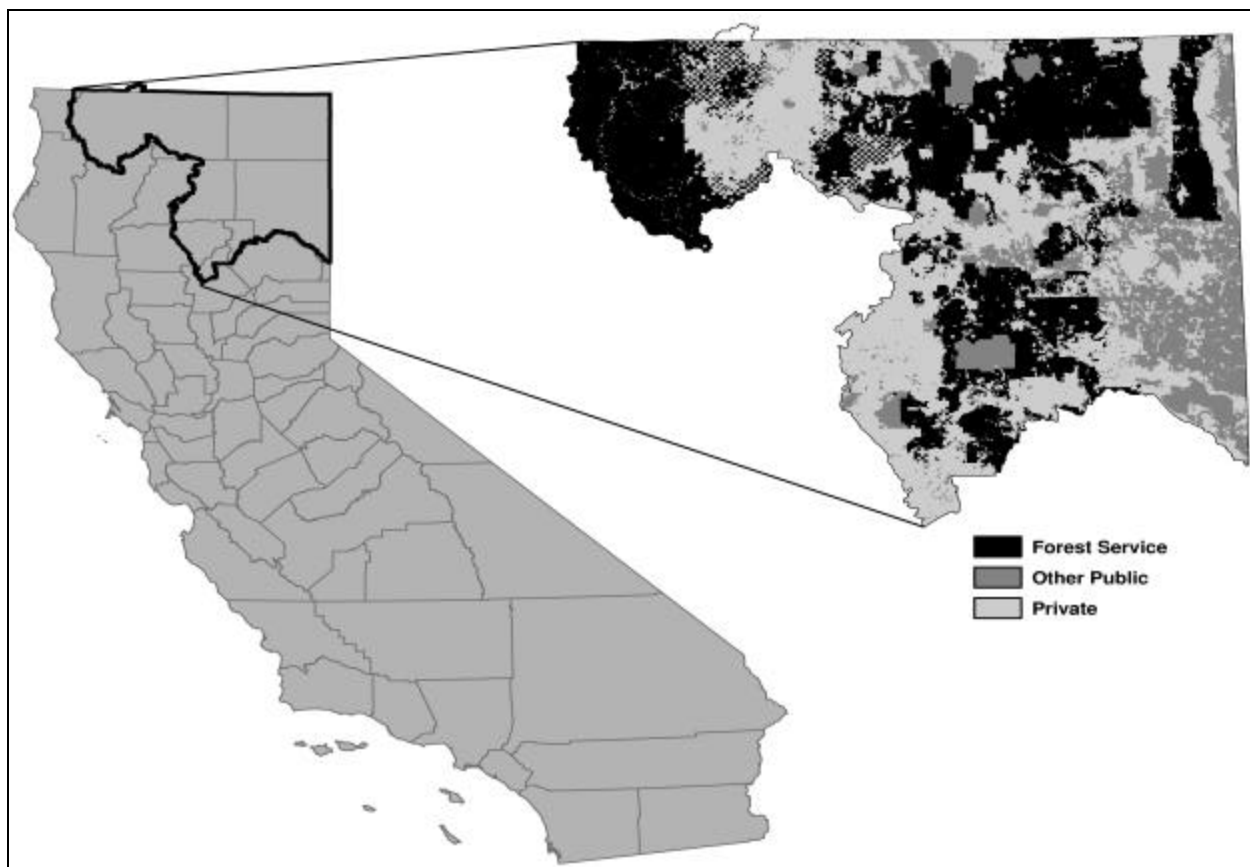


Figure 3. Location of Cascade Northeast Project Area and corresponding land ownership.

Table 1 shows the proportion of each county covered by the project area. In this report, some counties are only partially analyzed, as the boundary of the Cascade Northeast project area does not overlap completely with these counties. This is because project area boundaries are defined predominantly by ecological zones. Other factors are also taken into account when defining project area boundaries, such as national forest and TM scene boundaries. Additionally, agriculturally dominated areas are excluded from the project area.

Table 1. Acres of County Analyzed by Private and Public Ownership

COUNTY	Private Acres	Public Acres	Total Acres in County Acres	% of County Analyzed %
Butte	190,128	49,144	1,072,709	22
Del Norte	240,	24,514	650,061	4
Humboldt	0	156	2,289,626	<1
Lassen	1,113,749	1,784,281	2,951,996	98
Modoc	953,253	1,733,508	2,687,407	100
Plumas	148,650	162,704	1,673,707	19
Shas ta	723,177	461,653	2,460,493	48
Siskiyou	1,436,228	2,449,749	4,062,205	96
Tehama	428,031	268,613	1,893,580	37
Trinity	1	28	2,051,111	<1

CHANGE DETECTION MONITORING PROCEDURES

Images and Maps

The LCMMP uses two dates of TM imagery to derive land cover change. Change detection techniques interpret differences in spectral reflectance between image dates to produce a map depicting various levels of vegetation change. A difference in spectral reflectance (the amount of sunlight reflected from surface features to the satellite in space) between image dates indicates where change probably occurred (for further details, see Appendix B). For hardwood and conifer canopy cover loss, change classes are broken down into three categories: -71 to -100% CC (71 to 100% decrease in canopy cover), -41 to -70% CC and -16 to -40% CC. For hardwood and conifer canopy cover gain, change classes are broken down into two categories: +16 to +40% CC and +41 to +100% CC. In the shrub, chaparral, grass and forb vegetation types, the change classes are quantified as a decrease or increase in vegetation cover of 16% or greater (Figure 5; Table 2).

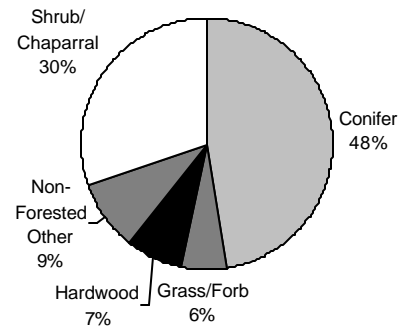


Figure 4. Proportion of each lifeform in project area.

The overall accuracy of the Cascade Northeast change map is 84.5%. A total of 669 randomly selected change areas with known reference information were evaluated to assess the accuracy of the change map. Out of the 669 sample sites, 565 were correctly classified (see Appendix C for details on the accuracy assessment).

Vegetation data are used to determine which lifeforms, WHR types and CALVEG types are experiencing various magnitudes of change. “Lifeforms” are general land cover categories, such as conifer and hardwood (Figure 4). WHR stands for Wildlife Habitat Relationships System, and is a habitat classification system (e.g., Blue Oak Woodland, Klamath mixed conifer, and Coastal Scrub). CALVEG types are more specific vegetation types (e.g., coast live oak and red fir) and are only used to summarize change on Forest Service land in this report (see Appendix A for more details on vegetation data). Every WHR and CALVEG type is represented by a lifeform (Appendix E and F).

Because many vegetation layers exist for different parts of the project area, the best available vegetation data are collected and combined into one seamless data layer. Vegetation layers not containing a WHR classification (Mayer and Laudenslayer, 1988) are given a WHR classification based on the information in that layer. LCMMP vegetation data are used for the entire project area, and contain lifeform, WHR and CALVEG type. See Appendix A for vegetation data sources.

Causes of Change

Once the final change map is complete, an attempt is made to verify cause on all change areas. Causes of change are verified through GIS overlay analysis, fieldwork, photo interpretation and interpretation by land managers, landowners and other stakeholders. The GIS overlay analysis uses the CDF forest practices database, FS stand record system and statewide fire history layer to attribute changes caused by harvests, regeneration and wildfires. FS resource managers interpret change maps by applying local knowledge and fieldwork to identify sources of change on Forest Service lands. Similarly, University of California (UC) Integrated Hardwood Rangeland Management Program (IHRMP) personnel consult private landowners to verify causes of change in hardwood rangelands. Despite all of these efforts, complete cause verification is not always possible due to the large number of change areas, insufficient information and inaccessible lands. See Appendix B for more information on cause verification.

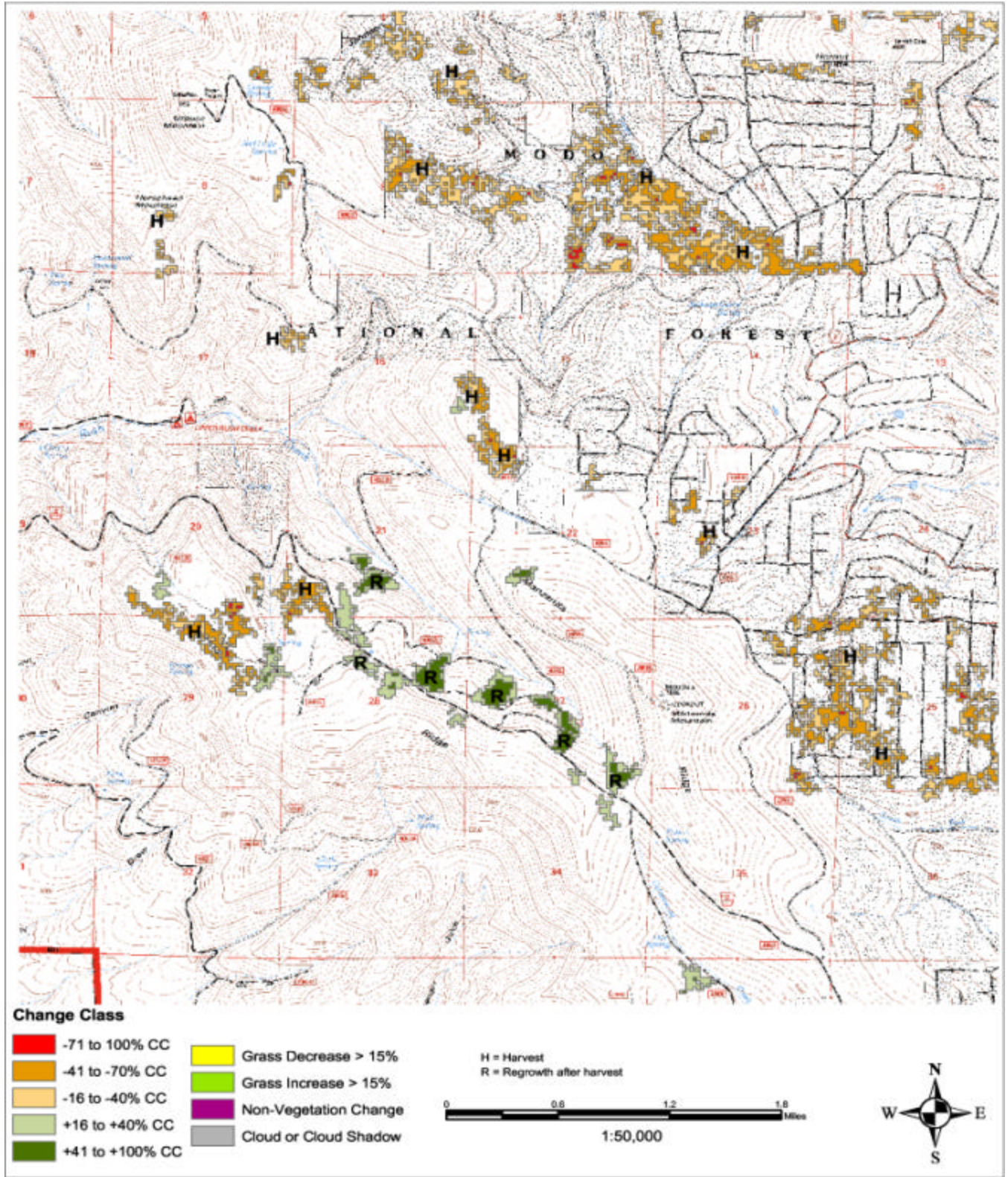


Figure 5. Portion of change map with typical harvest pattern in the Hermit Butte quadrangle, Modoc County

INTERPRETING RESULTS

Interpreting Change

Mapped vegetation change indicates areas that have undergone some form of vegetation decrease or increase between image dates (refer to Figure 1a in Appendix A for exact dates). For hardwood and conifer canopy cover loss, change classes are broken down into three categories: -71 to -100% CC (71 to 100% decrease in canopy cover), -41 to -70% CC and -16 to -40% CC. For hardwood and conifer canopy cover gain, change classes are broken down into two categories: +16 to +40% CC and +41 to +100% CC. In the shrub, chaparral, grass and forb vegetation types, the change classes are quantified as a decrease or increase in vegetation cover of 16% or greater. The little to no change class indicates that change within the existing vegetation is either nonexistent or too subtle to detect. Table 2 describes the different change classes.

Multiple change classes are created to represent different levels of canopy cover change (Table 2). In the text and tables of the main report, however, changes are generalized and denoted simply as an “increase” or “decrease” in canopy cover. To see details on each change class, see the tables in Appendix G.

Table 2. Change Classes and Corresponding Description

CHANGE CLASS	DESCRIPTION
-71 to -100% CC	71 to 100% decrease in canopy cover
-41 to -70% CC	41 to 70% decrease in canopy cover
-16 to -40% CC	16 to 40% decrease in canopy cover
+15 to -15% CC (Little or No Change)	Little or no change in canopy, shrub/chaparral, or grass cover
+16 to +40% CC	16 to 40% increase in canopy cover
+41 to +100% CC	41 to 100% increase in canopy cover
Shrub/Grass Decrease > 15%	16 to 100% decrease in shrub/grass
Shrub/Grass Increase > 15%	16 to 100% increase in shrub/grass
Non-vegetation Change (Includes Change Within Existing Developed Area)	Change not related to a vegetation change including change within urban area
Cloud or Cloud Shadow	Cloud or cloud shadow (prevents change assessment)

Change values are reported in two ways: by area, or acres of change, and proportion. A particular value in acres, such as 15,000 acres, indicates that 15,000 acres have undergone a vegetation change of 16% or more. Proportion refers to the amount of land undergoing a change relative to the total area of that particular vegetation type. As an example, if 1.3% of montane hardwood experienced a decrease in canopy cover, then 1.3% of the montane hardwood analyzed in the project area experienced a canopy cover change of 16% or more. This does not mean that 1.3% of montane hardwood is gone, that the canopy cover of montane hardwood has decreased by 1.3%, nor does it mean that the volume of montane hardwood has decreased by 1.3%.

Bear in mind that a detected vegetation cover increase, particularly a small increase, does not necessarily represent a gain in canopy or extent of a specific vegetation type. In some cases it represents understory regrowth or seasonal variation. The hardwood and shrub/chaparral types with low canopy cover are particularly sensitive to this phenomenon due to the presence of understory grasses and forbs within these types. Conversely, once vegetation fully covers a site, a change may not be detected even though biomass is increasing or stand structure is changing.

Results are particularly difficult to interpret for brushland types. Land uses that cause type conversion from brushlands (e.g., development) are most likely to result in detectable levels of vegetation change. Disturbances that do not result in type conversion (e.g., changes in grazing or low intensity fires) may escape detection. For example, Figure 6 shows two fires that burned chaparral dominated areas in 1990. The monitoring process detected regrowth in the northernmost fire, but not in the southernmost, possibly because the area in the southernmost fire had burned and regrown prior to the second image date, causing the monitoring process to effectively “miss it” due to timing. Complex interactions between many factors such as site quality, vegetation composition and structure and fire intensity determine conditions at the two monitoring dates, and thus whether or not a change can be detected. Additional research is needed to explore potential improvements in the methodology for monitoring brushlands.

Interpreting Cause

When interpreting results by cause, it is important to note that some ancillary data sources are more complete than others. Change caused by wildfire is easily verified because the FS and CDF maintain a comprehensive fire perimeter data layer. Other sources of change are often more difficult to verify as data is unavailable and exhaustive fieldwork to identify all changes is impractical.

Cause is usually identified in one of three ways. First, ancillary data layers (e.g., FS plantation database, state fire history database, etc.) are used to identify cause. Second, regional experts familiar with a particular area are asked to identify causes of change. And lastly, photo interpretation is used to identify causes of vegetation change. Some error in cause attribution is expected since ground experts may make errors, ancillary data layers may not be perfect and photo interpreters may not be 100% correct.

Vegetation mapping errors may also contribute to change/cause combinations that seem unrealistic or inconsistent. For instance, Table 16 shows that 1,941 acres of shrub/chaparral change are caused by harvest. This could be due to the attribution errors mentioned in the previous paragraph, or this could be due to errors in the input vegetation data. In this case, it is likely that harvest is the identified cause of change according to data layers or ground experts, but because the input vegetation shows the area as shrub/chaparral, the area is classified as a shrub/chaparral decrease due to harvest.

Many causes are extremely difficult to verify, particularly causes that affect only small areas, such as development. Because a particular cause may have little or no affected area, it does not necessarily follow that this cause was not important. The unverified cause acreage could belong to any of the categories mentioned in this report, such as harvest or development. But the unverified cause could also be due to other cause agents, such as a landslide or management

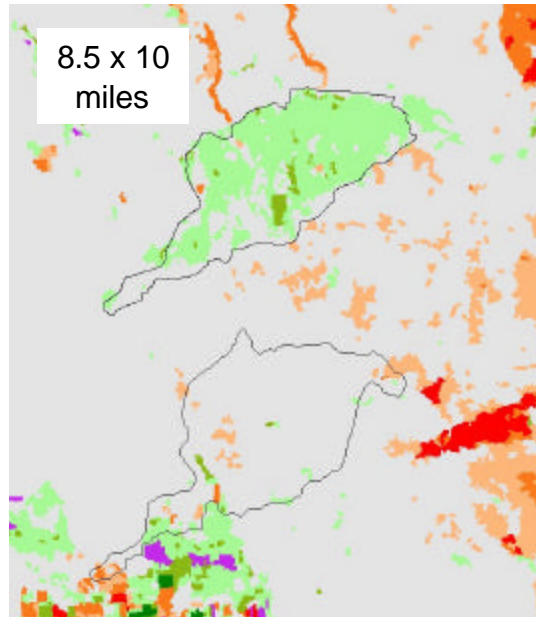


Figure 6. Comparison of two fires that burned in chaparral dominated areas.

activity; therefore, acres listed for the various causal agents represent a minimum acreage of cause.

Calculating a “net” change by simply comparing acres of decrease and increase does not necessarily provide a full and accurate portrait of change. Vegetation decreases are usually quick and dramatic, such as those caused by fire, harvest, and development, while increases in vegetation are often more gradual (particularly for hardwood and conifer), and may not increase at the minimum change class of at least 16%. A decrease in large trees or other mature vegetation types will take decades to regrow, however many of the increases are in younger vegetation types and represent less than a single decade of growth. Some decreases in vegetation, such as development and conversion to agriculture, are permanent losses to that particular vegetation. Comparing vegetation that is permanently lost or removed to vegetation that has temporarily increased mixes two different processes.

DISCUSSION OF RESULTS: ENTIRE PROJECT AREA

Of the 11.9 million acres in the project area, about 1.1 million are barren, agriculture, water or urban. The remaining 10.8 million vegetated acres are composed of the conifer, hardwood and grass/forb lifeforms, each covering about 5.8, .7, 3.6 and .7 million acres, respectively.

Approximately 96.0% of the vegetation in the project area does not exhibit a detectable change between 1994 and 1999. Decreases in vegetation cover occur on approximately 1.7% (~183,100 acres) of the assessed 10.8 million acres in the project area and increases on about 1.6%

(~175,500 acres). Most of the change occurs in the conifer lifeform (Figure 7). The conifer lifeform shows a larger area affected by decrease in vegetation than an increase, while the hardwood, shrub/chaparral and grass/forb lifeforms show a larger area affected by an increase in vegetation. See Appendix G for more detailed change tables.

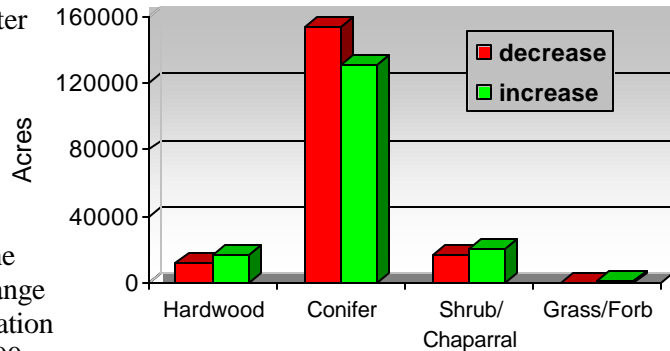


Figure 7. Acres of vegetation change by lifeform

Cause of change is verified on 281,543 acres (78.5% of the vegetation change within the project area). Regrowth, harvest and fire are the predominant causes of change, verified on about 129,000, 89,000 and 49,000 acres, respectively. The cause of vegetation change could not be verified on 77,070 acres.

Conifers

The conifer lifeform encompasses about 5.8 million acres of the Cascade Northeast project area. The predominant conifer types are sierran mixed conifer, eastside pine and juniper; together they comprise about 63.5% of the conifer area. Sierran mixed conifer covers about 31.0% of the conifer area, eastside pine about 19.1% and juniper covers about 13.4%. The remaining area is distributed among Douglas fir (8.5%), Klamath mixed conifer (8.2%), white fir (5.6%), red fir (5.7%), montane hardwood-conifer (3.1%), ponderosa pine (3.0%), lodgepole pine (1.5%), subalpine conifer (0.7%), Jeffrey pine (0.4%) and closed cone pine-cypress (0.2%).

Conifers show canopy cover change on 296,627 acres within the project area, which equates to 5.1% of their total area (Table 3). A decrease occurs on 160,049 acres (2.7%) and an increase occurs on 136,578 acres (2.3%). Cause is verified on 240,192 acres, or 81% of the conifer change. Regrowth (106,264 acres), harvest (85,491 acres) and fire (36,255 acres) are the predominant verified causes of conifer change.

Of the conifer types in the project area, sierran mixed conifer displays the largest area affected by a decrease in canopy cover with 73,062 acres affected (4.0%). Eastside pine also has a large area of decrease in canopy cover (25,714 acres; 0.3%). Proportionally, the closed cone pine-cypress conifer type shows the largest decrease at 6.0% (764 acres). The conifer types experiencing the largest increases in canopy cover are sierran mixed conifer (47,609 acres; 2.6%), eastside pine (34,683 acres; 3.1%) and Douglas fir (25,267 acres; 5.1%). Table 3 shows canopy cover change by conifer type.

Table 3. Acres of Conifer Canopy Cover Change by WHR Type

WHR Type	Decrease in CC	% Decrease	Increase in CC	% Increase	Total Change	Total % Change
Closed Cone Pine-Cypress	764	6.0	109	0.9	872	6.9
Douglas Fir	15,329	3.1	25,267	5.1	40,596	8.2
Eastside Pine	25,714	0.3	34,683	3.1	60,397	5.4
Jeffrey Pine	755	3.6	582	2.8	1,337	6.4
Juniper	5,294	0.7	438	0.1	5,732	0.7
Klamath Mixed Conifer	12,781	2.7	9,849	2.0	22,630	4.7
Lodgepole Pine	1,504	1.7	1,266	1.4	2,770	3.1
Montane Hardwood-Conifer	6,427	3.6	5,295	2.9	11,722	6.5
Ponderosa Pine	3,909	2.2	2,987	1.7	6,896	3.9
Red Fir	3,904	1.2	3,887	1.2	7,791	2.5
Sierran Mixed Conifer	73,062	4.0	47,609	2.6	120,672	6.7
Subalpine Conifer	250	0.6	90	0.2	341	0.8
White Fir	10,354	3.2	4,517	1.4	14,871	4.6
Total	160,049	2.7	136,578	2.3	296,627	5.1

Most of the change in the juniper type is caused by fire (3,478 acres), and nearly one-third of the change in the montane-hardwood conifer type is attributed to fire. Fire also affects 9,877 acres of Douglas fir and 9,500 acres of eastside pine. Harvest is the verified cause of change on 32,873 acres of sierran mixed conifer, 28,740 acres of eastside pine and 23,291 acres of Douglas fir. Pest-related causes are responsible for change on 821 acres of Klamath mixed conifer, 620 acres of red fir, and 580 acres of white fir. Regrowth is verified on 32,740 acres of sierran mixed conifer, 28,740 acres of eastside pine and 23,291 acres of Douglas fir. Over half of the change with unverified cause falls in the sierran mixed conifer type (29,727 acres). The cause of change is also unverified on 9,475 acres of eastside pine and 4,041 acres of Klamath mixed conifer.

Table 4. Acres of Conifer Change by Cause and WHR Type

WHR Type	Fire	Harvest	Develop- ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Closed Cone Pine-Cypress	98	57	0	69	2	513	134	872
Douglas Fir	9,877	3,151	0	23,291	448	632	3,196	40,596
Eastside Pine	9,500	11,141	19	28,740	379	1,143	9,475	60,397
Jeffrey Pine	496	129	0	461	18	46	187	1,337
Juniper	3,478	148	0	167	10	1,249	680	5,732
Klamath Mixed Conifer	5,219	4,620	0	7,330	821	598	4,041	22,630
Lodgepole Pine	1	1,067	7	690	85	91	830	2,770
Montane Hardwood-Conifer	3,749	1,175	0	4,259	209	433	1,897	11,722
Ponderosa Pine	204	2,204	19	1,958	36	135	2,338	6,896
Red Fir	407	1,698	0	3,048	620	540	1,480	7,791
Sierran Mixed Conifer	2,707	52,544	531	32,873	254	2,036	29,727	120,672
Subalpine Conifer	26	115	0	44	28	27	102	341
White Fir	493	7,442	0	3,334	580	674	2,348	14,871
Total	36,255	85,491	576	106,264	3,488	8,117	56,435	296,627

At the county level, Siskiyou County displays the largest area of conifer canopy cover decrease, with 63,590 acres of decrease (2.6%). Proportionally, Tehama County shows the largest decrease in conifer canopy cover at 4.6% (11,775 acres). Large areas of decreased canopy cover also occur in Modoc County (26,579 acres; 2.6%), Lassen County (25,425 acres; 2.5%) and Shasta County (25,425 acres; 2.5%). The largest increase in canopy cover takes place in Siskiyou County, with 67,056 acres, or 2.7%, showing an increase (Table 5). Shasta County and Modoc

County also exhibit large increases in conifer canopy cover, at 19,113 acres (2.7%) and 23,279 acres (2.3%), respectively.

Table 5. Acres of Conifer Canopy Cover Change by County

County	Decrease in CC	% Decrease	Increase in CC	% Increase	Total Change	Total % Change
Butte	5,154	4.2	1,799	1.5	6,953	5.7
Del Norte	37	0.2	68	0.4	104	0.6
Humboldt	0	0	29	23.1	29	23.1
Lassen	25,425	2.5	16,205	1.6	41,630	4.1
Modoc	26,579	2.6	23,279	2.3	49,858	4.9
Plumas	5,048	2.0	5,013	2.0	10,060	3.9
Shasta	22,441	3.2	19,113	2.7	41,554	6.0
Siskiyou	63,590	2.6	67,056	2.7	130,646	5.3
Tehama	11,775	4.6	4,018	1.6	15,793	6.2
Total	160,049	2.7	136,578	2.3	296,627	5.1

Regrowth is responsible for a large portion of the change in both Siskiyou and Modoc Counties, with 54,098 acres and 19,179 acres affected by an increase, respectively. Lassen County has 11,673 acres of increase in conifer canopy cover caused by regrowth. Harvest is the verified cause of decrease on 26,166 acres in Siskiyou County, 17,910 acres in Lassen County, 12,850 acres in Shasta County and 11,304 acres in Modoc County. In Siskiyou and Modoc Counties, fire is the verified cause of change on 21,228 acres and 11,496 acres, respectively. Pest-related causes account for 5,242 acres of decrease in Siskiyou County. Cause is unverified on about one-sixth of the change in Siskiyou County (20,978 acres), as well as on 14,909 acres in Shasta County (Table 6).

Table 6. Acres of Conifer Change by Cause and County

County	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Butte	0	4,244	0	915	0	0	1,794	6,953
Del Norte	0	0	0	1	0	0	103	104
Humboldt	0	0	0	29	0	0	0	29
Lassen	2,973	17,910	0	11,673	294	184	8,595	41,630
Modoc	11,496	11,304	0	19,179	160	1,517	6,202	49,858
Plumas	147	3,210	531	4,140	116	210	1,708	10,060
Shasta	131	12,850	19	12,787		857	14,909	41,554
Siskiyou	21,228	26,156	26	54,098	2,918	5,242	20,978	130,646
Tehama	281	9,817	0	3,442	0	107	2,146	15,793
Total	36,255	85,491	576	106,264	3,488	8,117	56,435	296,627

When analyzing conifer canopy cover change by ownership, private land shows the largest decrease by both area and proportion. This decrease affects 79,606 acres of privately owned land, or 3.8% of the conifer area on private land. Forest Service land displays the largest area of increase in conifer canopy cover, with 84,256 acres showing an increase (Table 7). Proportionally, both private land and Forest Service land each show an equal increase at 2.5%.

Table 7. Acres of Conifer Canopy Cover Change by Owner

Owner	Decrease in CC	% Decrease	Increase in CC	% Increase	Total Change	Total % Change
Forest Service	77,537	2.3	84,256	2.5	161,793	4.8
Other Public	2,905	0.7	979	0.2	3,884	1.0
Private	79,606	3.8	51,343	2.5	130,950	6.3
Total	160,049	2.7	136,578	2.3	296,627	5.1

On Forest Service land, regrowth, harvest and fire are the main causes of change, verified on 74,339 acres, 34,540 acres and 27,657 acres, respectively. Pest-related causes are responsible for another 3,349 acres of change on Forest Service land. On private land, harvest is verified on 50,119 acres and regrowth is verified on 31,630 acres (Table 8). Cause is unverified on 37,662 acres of private land.

Table 8. Acres of Conifer Change by Cause and Owner

Owner	Fire	Harvest	Develop- ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Forest Service	27,657	34,540	32	74,339	3,349	4,380	17,497	161,793
Other Public	1,279	832	28	296	99	95	1,256	3,884
Private	7,319	50,119	517	31,630	41	3,642	37,682	130,950
Total	36,255	85,491	576	106,264	3,488	8,117	56,435	296,627

Hardwoods

Within the project area, hardwood vegetation types total approximately 700,000 acres. The majority of the hardwood lifeform is comprised of montane hardwood and blue oak woodland, covering 51.8% and 41.4%, respectively. The remainder of the hardwood lifeform is composed of blue oak/foothill pine (3.2%), montane riparian (2.1%), aspen (1.2%), valley oak woodland and valley foothill riparian (<0.1%).

Between 1994 and 1999 the hardwoods in the project area showed a canopy cover change on about 2.5% of their area (17,664 acres; Table 9). A canopy cover decrease of at least 16% is detected on 0.8% (5,858 acres) and an increase is detected on 1.7% (11,805 acres). The cause of change is verified on 8,578 acres, which is about 48.6% of the change in the hardwood lifeform. Regrowth, fire and harvest are the major verified causes of change, affecting 4,246 acres, 2,149 acres and 1,227 acres, respectively (Table 10). Cause is unverified on 9,086 acres (7,559 acres are an increase in canopy cover), and could belong to any of the cause categories (fire, regrowth, development, etc.).

Within the hardwoods in the project area, the montane hardwood type experiences the greatest decrease in canopy cover. This decrease affects 1.5%, or 5,553 acres, of montane hardwood. The montane hardwood type also displays the largest increase in canopy cover, with 2.7% (9,803 acres) of its area affected. Table 9 shows canopy cover change by hardwood type.

Table 9. Acres of Hardwood Canopy Cover Change by WHR Type

WHR Type	Decrease in CC	% Decrease	Increase in CC	% Increase	Total Change	Total % Change
Aspen	8	0.1	74	0.9	82	1.0
Blue Oak Woodland	185	0.1	1,721	0.6	1,907	0.7
Blue Oak-Foothill Pine	62	0.3	83	0.4	145	0.7
Montane Hardwood	5,553	1.5	9,803	2.7	15,356	4.2
Montane Riparian	50	0.3	123	0.8	173	1.2
Valley Oak Woodland	0	0	2	0.1	2	0.1
Total	5,858	0.8	11,805	1.7	17,664	2.5

Within the montane hardwood type, the main verified causes of change are regrowth (3,939 acres), fire (2,148 acres) and harvest (1,211 acres). Pest-related causes account for 133 acres of change in this type. In the blue oak woodland type, regrowth is verified on 262 acres.

Table 10. Acres of Hardwood Change by Cause and WHR Type

WHR Type	Fire	Harvest	Develop-ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Aspen	0	1	0	22	0	0	59	82
Blue Oak Woodland	1	13	0	262	0	8	1,622	1,907
Blue Oak-Foothill Pine	0	0	0	16	8	2	120	145
Montane Hardwood	2,148	1,211	7	3,939	133	795	7,124	15,356
Montane Riparian	0	2	0	7	0	3	160	173
Valley Oak Woodland	0	0	0	0	0	0	2	2
Total	2,149	1,227	7	4,246	140	808	9,086	17,664

When examining the hardwood lifeform at the county level, the largest area of decrease in canopy cover occurs in Siskiyou County (4,936 acres; 1.8%). The largest area of increase in canopy cover also occurs in Siskiyou County, with 7,367 acres (2.7%) affected (Table 11). All counties in the project area display a larger increase in hardwood canopy cover than decrease.

Table 11. Acres of Hardwood Canopy Cover Change by County

County	Decrease in CC	% Decrease	Increase in CC	% Increase	Total Change	Total % Change
Butte	211	0.3	524	0.8	735	1.1
Del Norte	8	1.4	23	3.9	32	5.2
Humboldt	0	0	<1	0.9	<1	0.9
Lassen	2	<0.1	155	1.2	157	1.2
Modoc	1	<0.1	9	0.1	11	0.1
Plumas	0	0	102	4.2	102	4.2
Shasta	242	0.2	2,961	1.9	3,203	2.0
Siskiyou	4,936	1.8	7,367	2.7	12,303	4.6
Tehama	458	0.2	664	0.4	1,122	0.6
Total	5,858	0.8	11,805	1.7	17,664	2.5

Most of the change in the hardwood canopy cover of Siskiyou County is caused by regrowth and fire (3,580 acres; 2,124 acres). Pest-related causes are responsible for 140 acres of vegetation change in Siskiyou County. Cause remains unverified on 2,781 acres in Shasta County and 5,025 acres in Siskiyou County (Table 12).

Table 12. Acres of Hardwood Change by Cause and County

County	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Butte	0	161	0	117	0	0	457	735
Del Norte	0	0	0	0	0	0	32	32
Humboldt	0	0	0	0	0	0	26	26
Lassen	0	0	0	45	0	0	112	157
Modoc	0	1	0	9	0	0	1	11
Plumas	0	0	0	22	0	0	80	102
Shasta	7	16	0	318	0	81	2,781	3,203
Siskiyou	2,124	701	7	3,580	140	727	5,025	12,303
Tehama	18	349	0	155	0	0	598	1,122
Total	2,149	1,227	7	4,246	140	808	9,086	17,664

When analyzed by ownership, Forest Service land displays the largest area affected by a decrease in hardwood canopy cover (3,533 acres; 2.0%). Private land exhibits the largest acreage affected by an increase in hardwood canopy (5,928 acres; 1.3%). Proportionally, however, the largest increase in hardwood canopy cover (5,447 acres; 3.0%) is seen on Forest Service land (Table 13).

Table 13. Acres of Hardwood Canopy Cover Change by Owner

Owner	Decrease in CC	% Decrease	Increase in CC	% Increase	Total Change	Total % Change
Forest Service	3,533	2.0	5,447	3.0	8,980	5.0
Other Public	28	<0.1	430	0.7	458	0.8
Private	2,297	0.5	5,928	1.3	8,225	1.8
Total	5,858	0.8	11,805	1.7	17,664	2.5

On Forest Service land, regrowth and fire are the major causes of change, affecting 3,537 and 2,094 acres, respectively. Harvest (1,022 acres) and regrowth (679 acres) are the leading verified causes of hardwood canopy cover change on private land. However, cause of canopy cover change is unverified on 6,251 acres of private land. Pest-related causes are verified on 140 acres, all of which fall on Forest Service lands (Table 14).

Table 14. Acres of Hardwood Change by Cause and Owner

Owner	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Forest Service	2,094	205	0	3,537	140	597	2,407	8,980
Other Public	0	1	0	30	0	0	428	458
Private	55	1,022	7	679	1	211	6,251	8,225
Total	2,149	1,227	7	4,246	140	808	9,086	17,664

Shrub/Chaparral

The shrub/chaparral lifeform encompasses 3.6 million acres within the Cascade Northeast project area. The predominant shrub/chaparral types in the project area are sagebrush (60.5%), montane chaparral (14.6%), mixed chaparral (9.1%), bitterbrush (7.1%) and low sagebrush (5.3%); together they cover over 96.6% of the shrub/chaparral in the project area. The remainder is covered by the shrub/chaparral types of alkali scrub (3.0%) and alpine dwarf scrub (0.4%).

The shrub/chaparral within the project area displays a decrease on 16,844 acres (0.5%) and an increase on 26,138 acres (0.7%) (Table 15). The predominant verified cause of change is

regrowth, with 18,077 acres affected (Table 16). Fire is responsible for 10,469 acres of shrub/chaparral change. The cause of change is undetermined on nearly one-fourth of all shrub/chaparral change (10,749 acres) (Table 16).

Among the different shrub/chaparral types, montane chaparral displays the largest area of decrease in cover, with 11,701 acres of decrease (2.2%). Mixed chaparral also shows a large area of decrease in cover with 2,338 acres affected (0.7%). Montane chaparral exhibits the largest area and proportion of increase with 16,092 acres, or 3.1%, showing an increase in shrub/chaparral cover.

Table 15. Acres of Shrub/Chaparral Cover Change by WHR Type

WHR Type	Decrease in Cover	% Decrease	Increase in Cover	% Increase	Total Change	Total % Change
Alkali Scrub	3	<0.1	0	0	3	<0.1
Bitterbrush	971	0.4	999	0.4	1,970	0.8
Low Sagebrush	1	<0.1	14	<0.1	15	<0.1
Mixed Chaparral	2,338	0.7	4,962	1.5	7,301	2.2
Montane Chaparral	11,701	2.2	16,092	3.1	27,793	5.3
Sagebrush	1,829	0.1	4,070	0.2	5,900	0.3
Total	16,844	0.5	26,138	0.7	42,982	1.2

Over half of the shrub/chaparral change in the montane chaparral and mixed chaparral types is due to regrowth. Fire is a verified cause of change on 7,624 acres of montane chaparral. Cause is undetermined on at least 24% of all of the change in the montane chaparral, mixed chaparral and sagebrush shrub/chaparral types.

Table 16. Acres of Shrub/Chaparral Change by Cause and WHR Type

WHR Type	Fire	Harvest	Develop-ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Alkali Scrub	0	0	0	0	0	0	3	3
Bitterbrush	739	88	0	741	0	143	258	1,970
Low Sagebrush	0	0	0	10	0	0	4	15
Mixed Chaparral	1,114	166	0	3,272	48	177	2,524	7,301
Montane Chaparral	7,624	1,484	31	11,668	242	1,011	5,732	27,793
Sagebrush	992	202	0	2,385	0	94	2,227	5,900
Total	10,469	1,941	31	18,077	290	1,425	10,749	42,982

Siskiyou County and Modoc County show the largest decrease in shrub/chaparral cover, with decreases on 6,177 acres (1.0%) and 5,951 acres (0.5%) respectively (Table 17). Proportionally, the largest decrease occurs in Tehama County, which shows a decrease on 1.4% (1,533 acres) of its shrub/chaparral. With the exception of Siskiyou and Tehama Counties, all counties exhibit a greater increase in shrub/chaparral cover than a decrease. The largest increase occurs in Shasta County, with an increase in shrub/chaparral cover on 8,197 acres (4.0%). The shrub/chaparral of Modoc County also exhibits a large area of increase, with 7,550 acres (0.7%) showing an increase in cover.

Table 17. Acres of Shrub/Chaparral Cover Change by County

County	Decrease in Cover	% Decrease	Increase in Cover	% Increase	Total Change	Total % Change
Butte	130	0.5	441	1.7	572	2.2
Del Norte	0	0	16	0.3	0	0.3
Lassen	1,878	0.1	3899	0.3	5,778	0.4
Modoc	5,951	0.5	7550	0.7	13,501	1.2
Plumas	79	0.4	724	3.8	803	4.3
Shasta	1,095	0.5	8197	4.0	9,291	4.5
Siskiyou	6,177	1.0	4805	0.8	10,982	1.8
Tehama	1,533	1.4	507	0.5	2,040	1.9
Total	16,844	0.5	26138	0.7	42,982	1.2

Nearly half of the shrub/chaparral change is attributed to regrowth in Modoc (7,182 acres), Shasta (5,471 acres), Lassen (2,190 acres) and Siskiyou (2,163 acres) counties. Fire is verified on 5,484 acres of shrub/chaparral in Modoc County and on 3,030 acres in Siskiyou County. Cause is unverified on almost half the shrub/chaparral change in Lassen County (2,291 acres), as well as on 3,285 acres in Shasta County and 3,635 acres in Siskiyou County (Table 18).

Table 18. Acres of Shrub/Chaparral Change by Cause and County

County	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Butte	0	36	0	148	0	0	388	572
Del Norte	0	0	0	0	0	0	0	0
Humboldt	0	0	0	0	0	0	2	2
Lassen	861	421	0	2,190	13	2	2,291	5,778
Modoc	5,484	100	0	7,182	0	159	576	13,501
Plumas	24	33	6	614	0	0	126	803
Shasta	86	213	0	5,471	0	236	3,285	9,291
Siskiyou	3,030	828	24	2,163	278	1,023	3,635	10,982
Tehama	984	310	0	310	0	5	430	2,040
Total	10,470	1,941	31	18,078	290	1,425	10,747	42,982

The largest decrease in shrub/chaparral cover by both area and proportion occurs on privately owned lands (Table 19). This decrease affects 12,567 acres of shrub/chaparral, or 1.1%. Private land also displays the largest increase in shrub/chaparral cover, with 19,835 acres (1.7%) affected.

Table 19. Acres of Shrub/Chaparral Cover Change by Owner

Owner	Decrease in Cover	% Decrease	Increase in Cover	% Increase	Total Change	Total % Change
Forest Service	3,639	0.3	5,562	0.5	9,201	0.8
Other Public	637	0.1	741	0.1	1,378	0.1
Private	12,567	1.1	19,835	1.7	32,402	2.8
Total	16,844	0.5	26,138	0.7	42,982	1.2

Fire is a verified cause of shrub/chaparral change on 7,904 acres of private land and 2,064 acres of Forest Service land (Table 20). Regrowth on private land is verified on 13,929 acres and is also verified on 4,014 acres of Forest Service land. Of the 31 acres of development, 30 fall on private land. All 290 acres of the verified change due to pest-related causes occur on Forest Service land.

Table 20. Acres of Shrub/Chaparral Change by Cause and Owner

Owner	Fire	Harvest	Develop- ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Forest Service	2,064	494	1	4,014	290	439	1,899	9,201
Other Public	502	30	0	135	0	0	711	1,378
Private	7,904	1,416	30	13,929	0	986	8,137	32,402
Total	10,470	1,941	31	18,078	290	1,425	10,747	42,982

Grass/Forb and Non-Forested Other

The “Non-Forested Other” (NFO) category contains land classified as water, urban, agriculture and barren. In some instances, land classified as “barren” is actually sparsely vegetated grasslands, and hence is able to undergo vegetation change. Additionally, there are a few instances where recent clearcuts have been classified as NFO (barren). Most of these areas have a vegetation increase after the clearcut. Because of the confusion between these two lifeforms, they have been combined. But because the NFO lifeform contains urban, water, agriculture and legitimately barren lands, no percentages of change are given due to the complexities of the calculation. See Appendix G for more details on the change in the grass/forb and NFO lifeform.

In the grass/forb and NFO lifeforms, regrowth is verified on 368 acres (Table 21). Fire is verified on 54 acres within these lifeforms. The cause of vegetation change is unverified on 860 acres.

At the county level regrowth is verified on 318 acres in Siskiyou County (Table 21). Fire is responsible for 39 acres of change in Tehama County.

Table 21. Acres of Grass/Forb and NFO Change by Cause and County

County	Fire	Harvest	Develop- ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Butte	0	8	0	0	0	0	0	8
Del Norte	0	0	0	0	0	0	0	0
Humboldt	0	0	0	0	0	0	0	0
Lassen	10	26	0	0	0	0	64	101
Modoc	0	0	0	32	0	0	0	32
Plumas	0	0	1	2	0	0	32	34
Shasta	4	0	0	0	0	0	74	78
Siskiyou	1	6	0	318	0	90	673	1,088
Tehama	39	36	0	0	0	0	35	109
Total	54	77	1	368	0	90	860	1,450

Nearly 70% (1,007 acres) of the vegetation change in the grass/forb and NFO lifeform occurs on private land (Table 22). Regrowth is verified on 348 acres of private land and fire is verified on 42 acres. The cause of change is unverified on 860 acres of the grass/forb and NFO lifeforms, 535 acres of which are on private land.

Table 22. Acres of Grass/Forb and NFO Change by Cause and Owner

Owner	Fire	Harvest	Develop- ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Forest Service	1	1	0	18	0	86	111	217
Other Public	10	0	0	2	0	0	214	227
Private	42	77	1	348	0	4	535	1,007
Total	54	77	1	368	0	90	860	1,450

All Lifeforms

Table 23 offers an overview of all causes across the project area, showing all causes of vegetation change sorted by county. This includes the conifer, hardwood, shrub/chaparral, grass/forb and NFO lifeforms. In this way, a better understanding of each contributing cause and its magnitude compared to other causes can be obtained.

Regrowth, harvest and fire are the most predominant causes of change throughout the project area, verified on 128,939 acres, 88,736 acres and 48,928 acres, respectively. Pest-related causes are responsible for 3,919 acres of change. Cause remains unverified on 77,145 acres.

Siskiyou and Modoc Counties experience the most change due to fire, with 26,383 acres and 16,980 acres affected, respectively. Harvest primarily affects the counties of Siskiyou (27,691 acres), Lassen (18,357 acres), Shasta (13,080 acres), Modoc (11,405 acres) and Tehama (10,511 acres). Siskiyou County shows 3,336 acres of change due to pest-related causes. Regrowth is verified on 60,158 acres in Siskiyou County, 26,403 acres in Modoc County, 18,577 acres in Shasta County and 13,908 acres in Lassen County. Both Siskiyou and Shasta Counties display large acres of unverified cause of change at 30,311 acres and 21,050 acres, respectively.

Table 23. Acres of All Lifeform Change by Cause and County

County	Fire	Harvest	Develop- ment	Regrowth	Pest- related	Other	Unverified Cause	All Causes
Butte	0	4,449	0	1,180	0	0	2,639	8,268
Del Norte	0	0	0	1	0	0	135	136
Humboldt	0	0	0	29	0	0	0	29
Lassen	3,845	18,357	0	13,908	307	185	11,063	47,665
Modoc	16,980	11,405	0	26,403	160	1,676	6,778	63,402
Plumas	170	3,243	538	4,777	116	210	1,945	10,999
Shasta	227	13,080	19	18,577	0	1,173	21,050	54,126
Siskiyou	26,383	27,691	57	60,158	3,336	7,083	30,311	155,019
Tehama	1,323	10,511	0	3,907	0	113	3,209	19,063
Trinity	0	0	0	0	0	0	28	28
Total	48,928	88,736	615	128,939	3,919	10,440	77,173	358,750

DISCUSSION OF RESULTS: FOREST SERVICE LAND

In this portion of the report, in which Forest Service land is analyzed, CALVEG vegetation types are used instead of WHR vegetation types. This is done because Forest Service managers and personnel use the more detailed CALVEG classification. As CALVEG and WHR are different classification systems, it is not appropriate to compare the two. See Appendix A for more details on the WHR and CALVEG classification systems.

All Vegetation

Within the 11.9 million acres Cascade Northeast project area, Forest Service land covers a little over 4.9 million acres. The Modoc National Forest (NF) covers approximately 1.7 million acres, the Klamath NF covers approximately 1.6 million acres and the Lassen NF covers about 1.1 million acres. The portion of the Shasta-Trinity NF that falls within the project area covers around 476,000 acres. A very small portion of the Plumas NF is included in the project area; however, this forest is not analyzed in this project area, as it is covered more completely in another project area. The acres of change (1,102 in the Plumas) are included in the totals for national forest lands.

Overall, Forest Service land displays a decrease in vegetation on 84,687 acres (1.7%) and an increase in vegetation on 95,200 acres (1.9%; Table 24). Cause has been verified on about 88% of the change on Forest Service land. Regrowth is verified on 81,905 acres, harvest on 35,234 acres and fire on 31,815 acres (Table 25). Cause is unverified on 21,620 acres.

Among the national forests, the Klamath NF exhibits both the largest area as well as the highest proportion of decrease in vegetation, with 38,060 acres, or 2.3% affected. The Klamath NF also has the largest area of increase, with 47,771 acres (2.9%) showing an increase. Though the entire forest is not represented in this project area, the Shasta-Trinity NF displays the highest proportion of increase in vegetation at 3.5% (16,831 acres).

Table 24. Acres of Change of All Vegetation by National Forest

Forest	Decrease in Veg	% Decrease	Increase in Veg	% Increase	Total Change	Total % Change
Klamath	38,060	2.3	47,771	2.9	85,831	5.2
Lassen	19,895	1.9	13,126	1.2	33,021	3.1
Modoc	17,011	1.0	17,438	1.0	34,450	2.1
Shasta-Trinity	9,719	2.0	16,831	3.5	26,550	5.6
Total*	84,687	1.7	95,200	1.9	179,887	3.7

*Includes acres from small portion of Plumas National Forest

Examination of the causes of vegetation change on Forest Service land indicates that the majority of decrease due to fire, as well as most of the decrease due to pest-related causes are concentrated in the Klamath NF, with 23,326 acres and 3,084 acres verified for each, respectively (Table 25). Nearly half of the change (14,854 acres) on the Lassen NF is attributed to harvest. The Klamath NF (42,102 acres), Shasta-Trinity NF (13,062 acres) and the Modoc NF (16,105 acres) account for almost one-half of their vegetation change as verified regrowth. The cause is unverified on 8,956 acres of the Klamath NF.

Table 25. Acres of Change of All Vegetation by Cause and National Forest

Forest	Fire	Harvest	Develop- ment	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Klamath	23,326	5,724	0	42,102	3,084	2,640	8,956	85,831
Lassen	1,082	14,854	33	10,604	420	678	5,351	33,021
Modoc	6,897	8,657	0	16,105	160	512	2,119	34,450
Shasta-Trinity	510	6,000	0	13,062	115	1,672	5,191	26,550
Total*	31,815	35,234	33	81,905	3,778	5,502	21,620	179,887

*Includes acres from small portion of Plumas National Forest

Conifers

All Forest Service land within the project area exhibits a decrease in conifer canopy cover on 77,439 acres (2.3%) and an increase on 84,197 acres (2.5%; Table 26). Among the four national forests analyzed, the Klamath NF shows the largest area of conifer canopy cover decrease, with 32,648 acres affected (2.5%). Proportionally, the Shasta-Trinity exhibits the greatest decrease in conifer canopy cover at 2.7% (9,227 acres). In conifer canopy cover increases, the Klamath NF shows the largest area of increase with 41,905 acres (3.2%), while the Shasta-Trinity NF displays the highest proportion experiencing an increase at 4.5% (15,469 acres).

Of the conifer types within the national forests, Pacific Douglas fir in the Klamath NF shows the largest area affected by a decrease in canopy cover, with a decrease on 13,047 acres (3.6%; Table 26). The ponderosa pine-white fir on the Shasta-Trinity NF shows the highest proportion affected, with 5.3% of its area showing a decrease (2,707 acres). Other CALVEG types displaying large areas or proportions of decrease include the mixed conifer-fir on both the Lassen NF (10,054 acres; 2.7%) and Modoc NF (5,690 acres; 4.3%), as well as the mixed conifer-pine on the Shasta-Trinity NF (2,707 acres; 3.5%). The largest increases in conifer canopy cover occur in the Pacific Douglas fir on the Klamath NF, with 24,427 acres showing an increase (6.7%). Proportionally, the largest increase occurs in the eastside pine on the Shasta-Trinity NF, which shows an increase on 6.8% of its area (5,394 acres).

Table 26. Acres of Conifer Canopy Cover Change by National Forest and CALVEG Type

Forest	CAL-VEG**	Decrease in Veg	% Decrease	Increase in Veg	% Increase	Total change	Total % Change
Klamath	DF	13,047	3.6	24,427	6.7	37,474	10.3
	DW	2,764	3.4	1,839	2.3	4,603	5.7
	EP	242	0.3	1,194	1.4	1,436	1.7
	MF	4,122	2.6	3,919	2.5	8,041	5.2
	MP	5,283	2.6	4,568	2.3	9,851	4.9
	RF	1,254	0.9	1,964	1.5	3,217	2.4
	WF	1,614	1.7	917	0.9	2,531	2.6
	Other*	4,323	2.1	3,077	1.5	7,400	3.6
	Total		32,648	2.5	41,905	3.2	74,553
Lassen	EP	4,782	2.5	2,974	1.5	7,756	4.0
	MF	10,054	2.7	5,120	1.4	15,174	4.1
	MP	1,315	1.7	1,521	2.0	2,836	3.7
	RF	657	1.3	942	1.8	1,600	3.1
	WF	1,540	2.9	601	1.1	2,141	4.0
	Other*	727	1.5	439	0.9	1,166	2.4
	Total		19,076	2.4	11,597	1.5	30,673
Modoc	EP	5,656	1.7	12,289	3.6	17,945	5.3
	MF	5,690	4.3	1,822	1.4	7,512	5.7
	WF	1,459	3.0	385	0.8	1,844	3.8
	WJ	3,607	1.3	136	0.0	3,744	1.3
	Other*	74	0.2	560	1.2	635	1.3
	Total		16,487	1.9	15,192	1.8	31,680
Shasta-Trinity	EP	1,958	2.5	5,394	6.8	7,352	9.3
	MF	445	1.7	1,320	5.1	1,765	6.8
	MP	2,707	3.4	3,903	4.9	6,610	8.3
	PW	2,737	5.3	2,272	4.4	5,009	9.6
	RF	328	1.1	205	0.7	533	1.9
	WF	712	1.7	1,259	3.1	1,971	4.8
	Other*	341	0.9	1,116	2.8	1,456	3.6
	Total		9,227	2.7	15,469	4.5	24,697
All Forests***		77,441	2.3	84,197	2.5	161,638	4.9

*CALVEG types composing less than 5% of the conifer lifeform in the particular forest are combined into this category

**See Appendix F for CALVEG code descriptions

***Includes acres from small portion of Plumas National Forest

On the Klamath NF, Modoc NF and the Shasta-Trinity NF regrowth is the verified cause of change on about half of the total vegetation change, occurring on 37,684 acres, 14,141 acres and 12,782 acres, respectively (Table 27). Harvest is responsible for about one-half of the change on the Lassen NF, affecting 14,631 acres. Fire is a major verified cause of change on the Klamath NF, with 19,970 acres affected. The cause is unverified on 6,968 acres of the Klamath NF.

A large portion of the verified regrowth on the Klamath NF occurs in the Pacific Douglas fir (23,017 acres), while on the Modoc NF the majority of the verified regrowth takes place in the eastside pine (11,781 acres) (Table 27). Regrowth is verified on 5,022 acres of eastside pine and 2,605 acres of mixed conifer-pine on the Shasta-Trinity NF. Harvest is verified on 8,273 acres of mixed conifer-fir in the Lassen NF and 5,399 acres in the Modoc NF. On the Shasta-Trinity NF harvest is verified on 2,447 acres of ponderosa pine-white fir. Over half of the verified fire in the

Klamath NF occurs in the Pacific Douglas fir type (10,217 acres). The cause of change is unverified on 2,267 acres of Pacific Douglas fir in the Klamath NF, 1,299 acres of eastside pine and 1,813 acres of mixed conifer-fir in the Lassen NF, as well as 1,737 acres of mixed conifer-pine in the Shasta-Trinity NF.

Table 27. Acres of Conifer Change by Cause, National Forest and CALVEG Type

Forest	CAL-VEG**	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Klamath	DF	10,217	1,075	0	23,017	290	608	2,267	37,474
	DW	1,953	123	0	1,547	294	156	530	4,603
	EP		211	0	1,163		22	40	1,436
	MF	2,431	346	0	3,370	625	277	992	8,041
	MP	2,993	1,184	0	3,751	151	374	1,399	9,851
	RF	166	218	0	1,666	620	53	494	3,217
	WF	440	425	0	659	521	90	396	2,531
	Other*	1,770	1,905	0	2,512	169	194	850	7,400
	Total		19,970	5,488	0	37,684	2,669	1,775	6,968
Lassen	EP	364	3,696	0	2,216	101	80	1,299	7,756
	MF	79	8,273	0	4,552	223	234	1,813	15,174
	MP	11	873	25	1,362	1	29	534	2,836
	RF	0	290	0	859	0	256	194	1,600
	WF	0	1,365	0	529	0	53	193	2,141
	Other*	279	134	7	179	82	4	481	1,166
	Total		734	14,631	32	9,697	407	657	4,515
Modoc	EP	3,235	1,801	0	11,781	73	161	895	17,945
	MF	0	5,399	0	1,479	28	27	579	7,512
	WF	29	1,357	0	346	58	0	54	1,844
	WJ	3,311	14	0	75	0	168	175	3,744
	Other*	25	0	0	460	0	50	100	635
	Total		6,600	8,570	0	14,141	160	406	1,803
Shasta-Trinity	EP	262	1,208	0	5,022	105	96	659	7,352
	MF	59	92	0	1,216	0	125	273	1,765
	MP	32	1,499	0	2,605	0	737	1,737	6,610
	PW	0	2,447	0	1,655	0	63	845	5,009
	RF	0	192	0	178	0	109	54	533
	WF	0	302	0	1,085	0	279	306	1,971
	Other*	0	104	0	1,023	9	134	186	1,456
	Total		353	5,845	0	12,782	115	1,543	4,059
All Forests***		27,657	34,534	32	74,338	3,351	4,380	17,345	161,638

*CALVEG types composing less than 5% of the conifer lifeform in the particular forest are combined into this category

**See Appendix F for CALVEG code descriptions

***Includes acres from small portion of Plumas National Forest

Hardwoods

All of the Forest Service land within the project area displays a hardwood canopy cover decrease on 3,520 acres (2.0%) and an increase on 5,389 acres (3.1%). Over 98% of the hardwood canopy cover decrease on Forest Service land occurs in the Klamath NF, which exhibits 3,451 acres of decrease, or 2.9% (Table 28). The cause for most of this decrease in canopy cover is fire (Table 29). The majority of the increases in hardwood canopy cover can also be found in the Klamath NF, with 4,639 acres showing an increase (3.9%).

The largest area of decrease in hardwood canopy cover is seen in the canyon live oak on the Klamath NF, with 1,768 acres showing a decrease (3.0%). Proportionally, the tanoak (madrone) in the Klamath NF shows the largest decrease at 4.6% (640 acres). In canopy cover increases, the canyon live oak on the Klamath NF exhibits the largest area of increase (2,067 acres; 3.5%), while the tanoak displays the highest proportion of increase (9.3%; 1,305 acres). Proportionally, the Oregon white oak and the California black oak also display large increases on the Shasta-Trinity NF, at 3.6% and 4.0%, respectively (263 acres; 247 acres).

Table 28. Acres of Hardwood Canopy Cover Change by National Forest and CALVEG Type

Forest	CAL-VEG**	Decrease in Veg	% Decrease	Increase in Veg	% Increase	Total change	Total % Change
Klamath	QC	1,768	3.0	2,067	3.5	3,835	6.5
	QG	455	2.0	567	2.5	1,021	4.5
	QK	520	2.9	559	3.1	1,080	6.0
	QT	640	4.6	1,305	9.3	1,946	13.8
	Other*	68	1.9	140	3.9	209	5.8
	Total		3,451	2.9	4,639	3.9	8,090
Lassen	QC	15	0.2	8	0.1	23	0.3
	QD	7	<0.1	2	<0.1	9	0.1
	QK	25	0.4	62	1.0	87	1.4
	Other*	1	<0.1	86	4.1	87	4.1
	Total		48	0.1	158	0.4	206
Modoc	QQ	1	<0.1	0	0	1	<0.1
	Other*	0	0	3	1.0	3	1.0
	Total		1	<0.1	3	<0.1	4
Shasta-Trinity	QG	5	0.1	263	3.6	268	3.7
	QK	10	0.2	247	4.0	257	4.1
	Other*	6	0.3	79	4.0	85	4.3
	Total		20	0.1	589	3.8	609
All Forests		3,520	2.0	5,389	3.1	8,909	5.1

*CALVEG types composing less than 5% of the hardwood lifeform in the particular forest are combined into this category

**See Appendix F for CALVEG code descriptions

In the Klamath NF, where most of the hardwood canopy cover change occurs, almost 69% of the change in all CALVEG types is attributed to either regrowth or fire. Harvest, pest-related and other causes are responsible for about only 10% of the hardwood change. Cause remains unverified on 1,608 acres in the Klamath NF, 702 acres of which are canyon live oak (Table 29).

Table 29. Acres of Hardwood Change by Cause, National Forest and CALVEG Type

Forest	CAL-VEG**	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Klamath	QC	1,256	38	0	1,562	63	214	702	3,835
	QG	97	104	0	211	35	145	429	1,021
	QK	221	22	0	451	18	150	218	1,080
	QT	482	23	0	1,142	13	78	209	1,946
	Other*	22	2	0	115	9	10	50	209
	Total		2,078	188	0	3,481	138	597	1,608
Lassen	QC	9	0	0	7	0	0	8	23
	QD	1	0	0	1	0	0	7	9
	QK	6	11	0	10	0	0	60	87
	Other*	0	1	0	18	0	0	68	87
	Total		16	12	0	35	0	0	143
Modoc	QQ	0	1	0	0	0	0	0	1
	Other*	0	0	0	3	0	0	0	3
	Total		0	1	0	3	0	0	4
Shasta-Trinity	QG	0	1	0	0	0	0	267	268
	QK	0	1	0	11	0	0	246	257
	Other*	0	2	0	6	0	0	76	85
	Total		0	4	0	17	0	0	589
All Forests		2,094	205	0	3,536	138	597	2,340	8,909

*CALVEG types composing less than 5% of the conifer lifeform in the particular forest are combined into this category

**See Appendix F for CALVEG code descriptions

Shrub/Chaparral

Combined, the four national forests in the project area show a decrease on 3,633 acres of shrub/chaparral cover (0.3%). Increases in cover on Forest Service land occur on 5,494 acres, or 0.5%. The Klamath NF has the largest decrease by both area and proportion, with 1,907 acres, or 1.1%, exhibiting a decrease. The largest area of increase in shrub/chaparral cover is found on the Modoc NF, with 2,243 acres displaying an increase (0.3%). Proportionally, the Shasta-Trinity NF has the greatest increase, at 0.9% (772 acres). With the exception of the Klamath NF, all forests in the project area show a larger increase in shrub/chaparral cover than a decrease.

Among the CALVEG types in the national forests, huckleberry oak in the Klamath NF experiences both the largest area and proportion of decrease (587 acres; 2.8%). Wedgeleaf ceanothus on the Klamath NF also experiences a large proportion of decrease in cover (2.2%; 289 acres). Montane mixed-chaparral shows a decrease on 423 acres of the Shasta-Trinity NF (0.7%), 348 acres of the Lassen NF (0.6%), 289 acres of the Klamath NF (1.4%) and 216 acres of the Modoc NF (0.5%). The largest increase in shrub/chaparral cover occurs in the montane mixed chaparral on the Modoc NF (1,214 acres; 3.0%). Basin sagebrush on the Modoc NF also experiences an increase on 642 acres (0.2%). On the Klamath NF, lower montane mixed-chaparral shows an increase on 361 acres, or 2.1% (Table 30).

Table 30. Acres of Shrub/Chaparral Cover Change by National Forest and CALVEG Type

Forest	CAL-VEG**	Decrease in Veg	% Decrease	Increase in Veg	% Increase	Total change	Total % Change
Klamath	BB	<1	<0.1	9	0.1	9	0.1
	CH	587	2.8	24	0.1	611	2.9
	CL	289	2.2	19	0.1	308	2.3
	CM	413	0.6	445	0.7	857	1.3
	CQ	232	1.4	361	2.1	593	3.5
	CX	289	1.4	247	1.2	536	2.6
	Other*	97	0.4	39	0.2	137	0.6
	Total	1,907	1.1	1,144	0.7	3,051	1.8
Lassen	BS	36	0.1	271	0.4	307	0.5
	CC	202	0.9	31	0.1	233	1.0
	CM	9	<0.1	108	0.5	117	0.6
	CS	151	1.5	3	<0.1	154	1.6
	CX	348	0.6	891	1.6	1,239	2.2
	Other*	19	0.2	32	0.4	50	0.6
	Total	766	0.4	1,335	0.8	2,101	1.2
Modoc	BB	119	0.1	380	0.4	499	0.5
	BL	1	<0.1	1	<0.1	2	<0.1
	BS	183	<0.1	642	0.2	826	0.2
	CX	216	0.5	1,214	3.0	1,429	3.5
	Other*	5	<0.1	6	<0.1	10	<0.1
Total	524	0.1	2,243	0.3	2,766	0.4	
Shasta-Trinity	BB	5	<0.1	10	0.1	15	0.1
	CM	3	<0.1	26	0.4	28	0.5
	CX	423	0.7	660	1.1	1,083	1.9
	Other*	5	<0.1	77	0.7	82	0.8
Total	436	0.5	772	0.9	1,208	1.4	
All Forests	3,633	0.3	5,494	0.5	9,127	0.8	

*CALVEG types composing less than 5% of the shrub/chaparral lifeform in the particular forest are combined into this category

**See Appendix F for CALVEG code descriptions

On Forest Service land, regrowth is the largest verified cause of shrub/chaparral change, with 4,014 acres, or nearly 44% of the change, verified to be regrowth. Fire is another major cause of change, with 2,064 acres affected. The cause of change remains unverified on 1,825 acres. Nearly one-half of the verified regrowth is found on the Modoc NF (1,961 acres). Most of the verified fire is located in the shrub/chaparral of the Klamath NF, with 1,278 acres affected. Cause is unverified on 654 acres in the Lassen NF and 542 acres in the Shasta-Trinity NF.

Regrowth is verified on 1,051 acres of montane mixed-chaparral and 542 acres of basin sagebrush in the Modoc NF (Table 31). Regrowth is also verified on 754 acres of montane-mixed chaparral in the Lassen NF and 363 acres of upper montane mixed shrub in the Klamath NF. Fire affects 545 acres of huckleberry oak, 237 acres of wedgeleaf ceanothus and 183 acres of lower montane mixed chaparral in the Klamath NF. Montane mixed chaparral in the Shasta-Trinity NF is affected by 158 acres of fire. Pest-related causes are responsible for 214 acres of change within upper montane mixed shrub in the Klamath NF. Cause is unverified on 457 acres of montane mixed chaparral in the Shasta-Trinity NF.

Table 31. Acres of Shrub/Chaparral Change by Cause, National Forest and CALVEG Type

Forest	CAL-VEG**	Fire	Harvest	Development	Regrowth	Pest Related	Other	Unverified Cause	All Causes
Klamath	BB	0	0	0	9	0	0	0	9
	CH	545	22	0	8	11	0	26	611
	CL	237	0	0	14	38	0	20	308
	CM	144	4	0	363	214	20	112	857
	CQ	183	4	0	300	11	6	88	593
	CX	84	3	0	213	4	191	42	536
	Other*	84	13	0	13	0	0	27	137
	Total	1,278	47	0	920	277	216	314	3,051
Lassen	BS	8	9	0	60	0	0	230	307
	CC	131	1	0	23	0	1	77	233
	CM	0	4	0	20	0	0	94	117
	CS	123	0	0	1	0	0	30	154
	CX	61	196	1	754	13	21	192	1,239
	Other*	9	0	0	11	0	0	30	50
	Total	332	210	1	870	13	22	654	2,101
Modoc	BB	113	0	0	364	0	5	18	499
	BL	0	0	0	1	0	0	0	2
	BS	95	57	0	542	0	56	76	826
	CX	90	24	0	1,051	0	46	218	1,429
	Other*	0	5	0	2	0	0	3	10
	Total	297	87	0	1,961	0	106	316	2,766
Shasta-Trinity	BB	0	4	0	1	0	0	10	15
	CM	0	1	0	2	0	0	25	28
	CX	158	145	0	232	0	91	457	1,083
	Other*	0	1	0	27	0	4	50	82
	Total	158	151	0	263	0	95	542	1,208
All Forests	2,064	494	1	4,014	290	439	1,825	9,127	

*CALVEG types composing less than 5% of the conifer lifeform in the particular forest are combined into this category

**See Appendix F for CALVEG code descriptions

DATA AVAILABILITY

The land cover monitoring data are available in Arc/Info GRID format and the cause data are available in Arc/Info polygon format. These data are available in UTM zone 10 and Albers projections using the North American datum of 1927 (NAD27). To obtain these data, visit the CDF-FRAP website at <http://frap.cdf.ca.gov>, or contact the USDA Forest Service at (916) 454-0803 or CDF-FRAP at (916) 227-2651.

TERMINOLOGY

CALVEG – A vegetation classification scheme based on the Classification and Assessment with Landsat of Visible Ecological Groupings system. This classification system, developed by the USDA Forest Service, describes existing vegetation communities. It is appropriate for mapping vegetation using Landsat TM imagery and recognizes eight regions within California.

Change Classes – Classes of vegetation change for this program. These levels are relative amounts of change in vegetation cover (a -16 to -40% CC has less vegetation change than a -41 to -70% CC). The Cloud/Shadow class includes areas covered by clouds, cloud shadows and terrain shadows. The non-vegetation change class accounts for changes in lake water levels and snow in higher elevations.

Co-registration – The process of aligning pixels in one date of imagery to the corresponding pixels in another date of imagery that are in the same path and row.

Landsat TM Imagery – Thematic Mapper image data from the Landsat satellite. Each image covers approximately 13,225 square miles, has a pixel resolution of 900 square meters (30 m on a side) and contains seven bands of data. Six of the bands contain information on the amount of reflected sunlight from ground features within specific wavelengths. The seventh band is a thermal band and is not used in the change detection process.

Lifeform – A plant community aggregation into the broad land cover classes of hardwood, conifer, shrub and grass.

Minimum Mapping Unit – The minimum size or dimensions for features to be mapped as lines or areas.

Mosaic – The process of piecing together several images into one larger image.

Nearest Neighbor Resampling – A resampling method where the output pixel value is the same as the input pixel value, but whose coordinates are closest to the resampled coordinates of the output pixel.

Pixel – The smallest unit of information in an image or raster map. , also referred to as a cell in an image.

Radiometric Correction – The process of correcting variations in atmospheric conditions and sun angles in multiple dates of imagery.

Supervised Classification – A process aggregating pixels into classes based on training data (known areas representing the different classes) and multivariate statistics.

Unsupervised Classification – Classification algorithms that examine the unknown pixels in an image and aggregate them into a number of classes based on the natural groupings or clusters present in the image values.

WHR – A vegetation classification scheme based on the California Wildlife Habitat Relationships System. This classification system describes wildlife habitats of vertebrate animals and tends to have broad vegetation classes.

LITERATURE CITED

- Congalton, R.G. and K. Green. 1999. Assessing the accuracy of remotely sensed data: principles and practices. Lewis Publishers, New York.
- Crist, E.P. and R.C. Cicone. 1984. Application of the Tasseled Cap concept to simulated Thematic Mapper data. *Photogrammetric Engineering and Remote Sensing*, 50(3): 343-52.
- Kauth, R.J. and G.S. Thomas. 1976. The Tasseled Cap - a geographic description of the spectral-temporal development of agricultural crops as seen by Landsat. *Proceedings of the Symposium on Machine Processing of Remotely Sensed Data*, Purdue University, West Lafayette, IN, 4b: 41-51.
- Mayer, K.E. and W.F. Laudenslayer, eds. 1988. A guide to wildlife habitats of California. State of California, Resources Agency, Department of Fish and Game, Sacramento, CA.
- Ryherd, S.L. and C.E. Woodcock. 1990. The use of texture in image segmentation for the definition of forest stand boundaries. Presented at the Twenty-Third International Symposium on Remote Sensing of Environment, Bangkok, Thailand, April 18-25.
- Schott, J.B., C. Salvaggio, and W.J. Volchok. 1988. Radiometric scene normalization using pseudoinvariant features. *Remote Sensing of Environment*, 26:1-16.
- United States Department of Agriculture, Forest Service Regional Ecology Group. 1981. CALVEG - a classification of California vegetation. USDA Forest Service Region 5, San Francisco, CA

APPENDIX A – DATA SOURCES

Image Data

TM imagery provides the base data for deriving changes in vegetation cover. The Cascade Northeast project area requires six TM images from each date (12 total TM images). Images for each year are selected as close to the anniversary date as possible to minimize differences in vegetation moisture content and shadow effects. Images are also selected for minimal cloud coverage and overall image quality. TM imagery consists of thousands of pixels, each having a spatial resolution of 900 m² (30 m on each side) or approximately 1/5 of an acre. Figure 1a shows the path and row (World Reference System), image boundaries and date for the imagery used in Cascade Northeast project area.

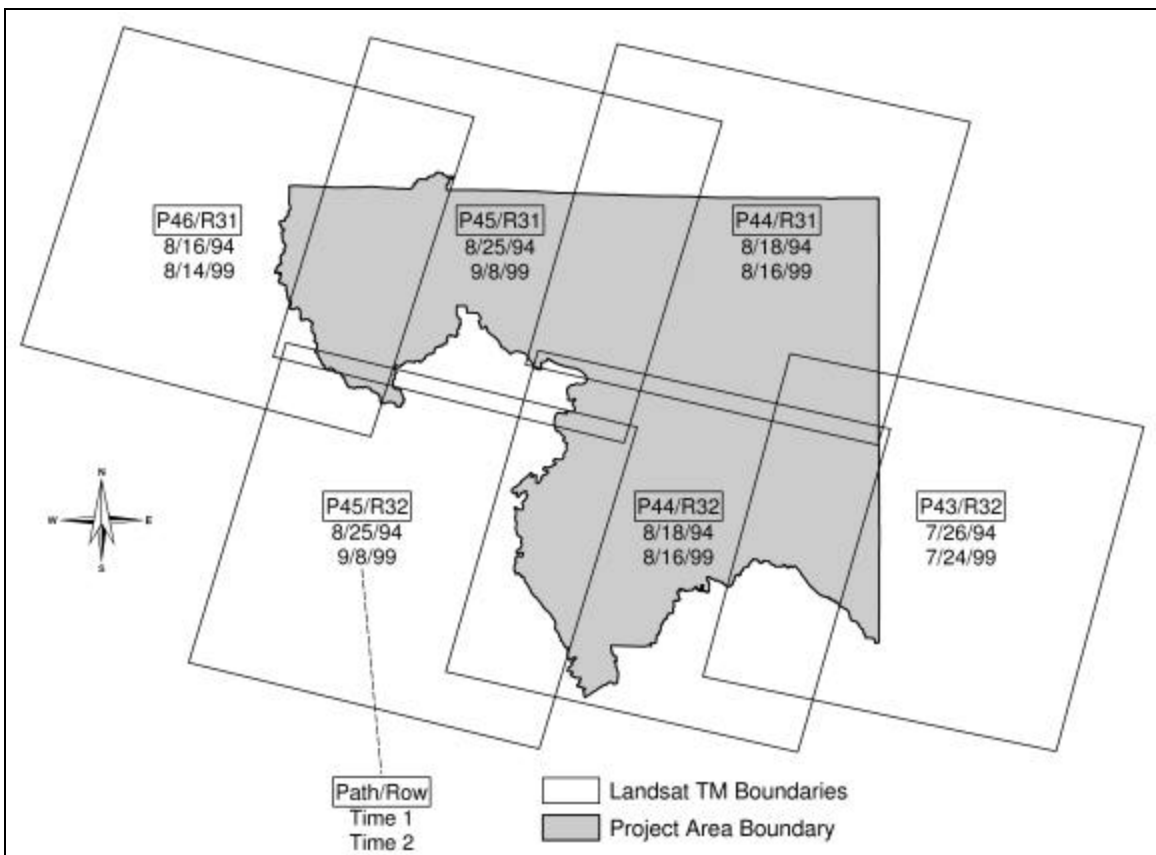


Figure 1a. TM imagery for the Cascade Northeast Project Area.

Vegetation Data

Vegetation data are used to determine which lifeforms, WHR types and CALVEG types are experiencing various magnitudes of change. “Lifeforms” are general land cover categories, such as conifer and hardwood (Figure 2a). WHR stands for Wildlife Habitat Relationships System, and is a habitat classification system (e.g., Blue Oak Woodland, Ponderosa Pine, and Coastal Scrub). Every WHR type is represented by a lifeform (See Appendix E for WHR types and corresponding lifeforms). The more specific CALVEG types approximate alliance level and usually correspond to the primary overstory species. CALVEG is the principal label mapped and used by the LCMMP, so only LCMMP vegetation data carries the CALVEG label. Because the CALVEG label is more specific, it is not possible to extrapolate, or crosswalk, CALVEG types from WHR types or other vegetation labels from non-LCMMP vegetation layers. However, WHR types can be ascertained, or crosswalked, from CALVEG labels, which is the current method for obtaining WHR types in areas mapped by LCMMP.

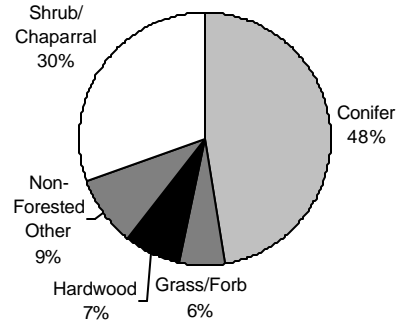


Figure 2a. Proportion of each lifeform in project area.

For the analysis of the Cascade Northeast project area, CALVEG types are analyzed only on Forest Service land, because Forest Service managers and personnel prefer the detailed CALVEG label. For reporting that is not limited to Forest Service land, analysis is performed and summarized using the WHR type. See Appendix E and F for WHR and CALVEG code descriptions.

LCMMP vegetation data cover the entire project area and, as mentioned previously, are mapped to the CALVEG type. The WHR type and lifeform are extrapolated/crosswalked from the CALVEG label. In areas where two vegetation types exist, for example conifers and hardwoods coexisting, there is a primary CALVEG label and a secondary CALVEG label. The primary CALVEG label does not necessarily represent a more prominent vegetation type, as the secondary CALVEG type can represent larger trees and a higher density. In areas where both a primary and secondary CALVEG label exists, the lifeform is labeled as “mixed.” Since reporting on a mixed lifeform is somewhat confusing and less than optimal, a lifeform labeled as “mixed” is changed to hardwood, conifer or shrub/chaparral depending on what WHR type is assigned to the area. As an example, many areas have hardwood and conifer both present, and hence have a primary and secondary CALVEG label and are assigned a mixed lifeform. Depending on the size and density of the hardwoods and conifers present, the WHR type can be either montane hardwood or montane hardwood-conifer. Those areas assigned a WHR type of montane hardwood are given a lifeform of hardwood and those areas assigned a WHR type of montane hardwood-conifer are given a lifeform of conifer.

In areas where both a primary and secondary CALVEG label exists, the WHR type also drives what CALVEG type is to be used in the analysis. Using the example from the previous paragraph, if the primary CALVEG label is Sitka spruce and the secondary CALVEG label is red alder, then, depending on the size and density of each CALVEG type, some of the areas would be assigned a WHR type of montane hardwood and some of the areas would be assigned a WHR type of montane hardwood-conifer. In those areas assigned a WHR type of montane hardwood,

Appendix A

red alder would be the CALVEG type that is reported on and analyzed. Conversely, in those areas assigned a WHR type of montane hardwood-conifer, Sitka spruce would be the CALVEG type that is reported on and analyzed.

Table 1a. Vegetation Data for the Cascade Northeast Project Area

Name	Classification	Source	Scale	Extent	% of Project Area
CA Mapping & Monitoring Program Vegetation Data	CALVEG / WHR	1994 TM imagery	2.5 acre mmu	All of project area excluding in and around the Bay Area	100

mmu - minimum mapping unit.

Other Data

Table 2a describes data layers that supplement our monitoring program. These layers are used to stratify change areas, verify causes and correlate change to mortality levels.

Table 2a. Supplemental Data for the Cascade Northeast Project Area

Name	Description	Data Type	Scale	Source	Extent
Ownership	Local, state federal, private	Polygon	1:100,000	CaSIL Data Center	Statewide
County	County boundaries	Polygon	1:24,000	CaSIL Data Center	Statewide
Fire Perimeters	Recent and past fires	Regions (polygon)	Varies; 1:24,000 to 1:100,000	Maintained by CDF and FS	Statewide
Harvest / Plantation	Silvicultural practices	Polygon	1:24,000	FS	Forest Service lands
THP Database	Harvest practices on private land	Polygon	1:24,000	CDF	Selected watersheds
NHFEU* Boundaries	Ecological subsection boundaries	Polygon	1:7,500,000	FS	Statewide
Digital Orthophoto Quads	1994	Image	1m ² pixels	FS and CDF	Statewide
Aerial Photos	9" x 9"	Print photograph	1:15,840 nominal	FS	Forest Service lands
	Color Infrared	Digital photograph	1:3,000 nominal	FS	Selected sites within project area

*National Hierarchical Framework of Ecological Units.

APPENDIX B – METHODOLOGY

Database Building

Database building includes the preparation of Thematic Mapper (TM) imagery for processing. The early date TM image (time 1) is registered to the later date TM image (time 2). Registration creates overlapping images (from time 1 and time 2) and is accomplished by placing control points that identify identical features throughout both images (e.g., road intersections). These features are used in a nearest neighbor resampling technique to assign the early date pixel values to the later date pixel locations. These new pixel locations must be within $\frac{1}{2}$ pixel of the later date pixels to help reduce false change. The images are then radiometrically corrected to account for differences in atmospheric conditions (e.g., haze and water vapor). This process involves the selection of dark and light groups of pixels in each image date and the application of a regression-based correction to the pixel brightness values of the early date image to effectively remove differences in atmospheric conditions (Schott et al., 1988).

Change Processing

Co-registered and radiometrically corrected TM imagery are analyzed for change by applying a Kauth-Thomas transformation to both dates of imagery (Kauth and Thomas, 1976). A TM image contains spectral (or reflectance) information for 7 bands of data, each representing a different range of the electromagnetic spectrum. For instance, band 1 of the Landsat TM measures the reflectance of wavelengths from $0.45\mu\text{m}$ to $0.52\mu\text{m}$, which corresponds to the color blue. The thermal-IR band is not used because its pixel size is 120 meters on each side (all other bands are 30 meters on each side). For each TM image, the Kauth-Thomas transformation uses the spectral information from six bands with model coefficients to produce new images depicting values of brightness, greenness and wetness (Crist and Cicone, 1984). Brightness identifies variation in reflectance, greenness is related to the amount of green vegetation present in the scene and wetness correlates to canopy and soil moisture. The brightness, greenness and wetness values from the first image (time 1) are subtracted from the brightness, greenness and wetness values of the second image (time 2; time 2 – time 1) to produce a new image depicting changes in those components on a pixel-by-pixel basis.

Change Labeling

Change labeling is a multi-step process that converts the change image into a change map depicting decreases and increases in canopy cover or changes in shrub/grass (Figure 5 of main report). The change image is divided into multiple parts, with each part (or map subset) corresponding to a different lifeform type (e.g., conifer, hardwood, shrub/chaparral). This is accomplished by overlaying the vegetation layer and selecting those areas in the change image that have the same lifeform. The result is multiple change images, with each one corresponding to a different lifeform and spatial extent. An unsupervised classification is performed on each individual lifeform change image to create 50 distinct classes, each class containing pixels that have similar levels of brightness, greenness and wetness. The pixels are temporarily labeled according to their level of change based on a qualitative gradient from large decreases in vegetation to large increases in vegetation. Image appearance, aerial photos, bispectral plots (e.g., greenness vs. wetness), and vegetation and topographic maps are used to aid in assigning the final quantitative change classes (Table 1b). Each individual lifeform change image is then mosaicked (pieced back together) into one project area change map.

Table 1b. Change Classes and Corresponding Description

CHANGE CLASS	DESCRIPTION
-71 to -100% CC	71 to 100% decrease in canopy cover
-41 to -70% CC	41 to 70% decrease in canopy cover
-16 to -40% CC	16 to 40% decrease in canopy cover
+15 to -15% CC (Little or No Change)	Little or no change in canopy, shrub/chaparral, or grass cover
+16 to +40% CC	16 to 40% increase in canopy cover
+41 to +100% CC	41 to 100% increase in canopy cover
Shrub/Grass Decrease > 15%	16 to 100% decrease in shrub/grass
Shrub/Grass Increase > 15%	16 to 100% increase in shrub/grass
Non-vegetation Change (Includes Change Within Existing Developed Area)	Change not related to a vegetation change including change within urban area
Cloud, Cloud Shadow or Smoke	Clouds, cloud shadows or smoke (prevents change assessment)

Once the change image is mosaicked, pixels of similar change classes that are adjacent to each other are temporarily grouped together. All increases in canopy cover and shrub/grass are grouped together, all decreases in canopy cover and shrub/grass are grouped together and non-vegetation change pixels are grouped together. These groups are then filtered to see if they meet the minimum mapping unit (mmu) of 2.5 acres, or 11 pixels. All groups that do not meet the mmu are removed from the change map and assigned a change class of little or no change. The temporary groupings are then removed, giving the pixels their original value (change class).

The classification system is designed to discriminate between different levels of canopy cover changes (i.e., 16 to 40% CC decrease vs. 71 to 100% CC decrease). The +15 to -15% CC (little or no change) indicates either that change did not occur, that the change area falls below the mmu or that the change was too subtle to be detected. The non-vegetation change class accounts for variations in lake or reservoir water levels, snow pack in the higher elevations and change within an existing urban area. The cloud or cloud shadow class accounts for clouds, cloud shadows and shadows in mountainous areas that obscure ground cover and make it impossible to determine whether the vegetation has changed or remained stable in these areas.

Cause Verification

Once the final change map is complete, an attempt is made to verify cause on all change areas. GIS overlay analysis, fieldwork and photo interpretation are used to determine the causes of change areas. The statewide fire history database is overlaid onto the change map to attribute changes caused by wildfires (Figure 6 of main report). A series of cause identification workshops are conducted and include FS resource managers, CDF personnel and other stakeholders in the project area. FS, CDF and other land managers interpret change maps by applying local knowledge and fieldwork to identify sources of change on public lands. Similarly, UC Integrated Hardwood Rangeland Management Program (IHRMP) personnel consult private landowners to identify sources of change in hardwood rangelands. Areas without a causal agent identified through the above processes become the focus of further field efforts and aerial photo interpretation. Despite all of these efforts, complete coverage of cause verification is not always possible due to the large number of change areas, insufficient information and inaccessible lands.

APPENDIX C - DATA ACCURACY

To assess the accuracy of the change map, 669 randomly selected change areas were compared with known reference information of the same areas. All change classes were represented with accuracy assessment sites based on the acreage amount of change (e.g., the little to no change class has the largest acreage thus contains the most sites). Sites were developed randomly selecting 5 to 20 acre polygons from all of the change areas. These areas were interpreted for canopy cover and shrub/chaparral change using color aerial photography at a scale of 1:15,840, digital camera images at a scale of 1:3000, Digital Orthophoto Quadrangles with a 1-meter cell size and field collected data. Essentially, this assessment takes the 669 reference sites with known vegetation change and compares them to the classified change map.

Table 1c. Change Code and Corresponding Change Class

Change Code	CHANGE CLASS
1	-71 to -100% CC
2	-41 to -70% CC
3	-16 to -40% CC
4	+15 to -15% CC (Little or No Change)
5	+16 to +40% CC
6	+41 to +100% CC
7	Shrub/Grass Decrease > 15%
8	Shrub/Grass Increase > 15%
9	Change Within Existing Developed Area
15	Cloud or Cloud Shadow

Table 2c displays the error matrix for the Cascade Northeast project area. (See Table 1c for change code descriptions). The overall accuracy of the change map is 84.5%. This means that of the 669 sample sites, 565 were correctly classified (the reference and classified classes are the same; Congalton and Green, 1999). Errors of commission (reference class included in the wrong classified class) and omission (reference class excluded from the correct classified class) are also evident. For example, Table 2c shows that one site was classified as shrub/grass increase >15% when the reference class shows it was actually little or no change. Therefore, one area was omitted from

Table 2c. Change Map Accuracy Assessment for the Cascade Northeast Project Area

		Reference Class									Total
		1	2	3	4	5	6	7	8	9	
Classified As	1	43	5	2							50
	2	10	46	7							63
	3	6	6	48							60
	4		1	7	204	9	2	3	3	2	231
	5				3	37	2				42
	6					19	46				65
	7							29			29
	8				1				36		37
	9							7	9	76	92
	Total	59	58	64	208	65	50	39	48	78	669

the correct little or no change class and committed to the incorrect shrub/grass increase >15% class. The producer's accuracy of each change class ranged from 57% to 98% and the user's accuracy ranged from 71% to 100% (Table 3c). Producer's accuracy represents how well a particular class is classified. In other words, of all the referenced sites that have a particular change class, how many times (or in what proportion) did those sites get classified as such? For instance, of the 64 reference sites with a -16 to -40% CC, 48 of those sites were classified

Appendix C

correctly. The user’s accuracy looks at the matrix from a different approach. Instead of looking at known reference data and calculating how many are correct (producer’s accuracy), the user’s accuracy looks at the number correctly classified and compares that to the number of sites in that classification. For example, 60 sites are classified into the –16 to –40% CC class, but only 48 of those sites are actually referenced to be in that class. User’s accuracy indicates the probability that a given change class actually represents that same change on the ground.

Table 3c. Producer’s and User’s Accuracy of Each Class

Producer's Accuracy			User's Accuracy		
1	43/59	73%	1	43/50	86%
2	46/58	79%	2	46/63	73%
3	48/64	75%	3	48/60	80%
4	204/208	98%	4	204/231	88%
5	37/65	57%	5	37/42	88%
6	46/50	92%	6	46/65	71%
7	29/39	74%	7	29/29	100%
8	36/48	75%	8	36/37	97%
9	76/78	97%	9	76/92	83%

The accuracy assessment also shows that general vegetation cover decreases and increases were mapped well. Accuracy assessment sites classified as a decrease were never a referenced increase, although a few sites were referenced as little or no change. The same is true for the areas classified as an increase. Additionally, a referenced decrease site was never classified as an increase and a referenced increase site was never classified as a decrease.

APPENDIX D – WHR TYPE DESCRIPTIONS

Species Compositions for major Hardwood, Conifer and Shrub/Chaparral WHR Types;
Species in bold are dominant and species in non-bold are associates.

MONTANE HARDWOOD	BLUE OAK WOODLAND	Blue Oak/ FOOTHILL PINE
CA black oak pacific madrone tanoak alder interior live oak canyon live oak	blue oak	blue oak foothill pine
Oregon white oak coast live oak California laurel valley oak blue oak foothill pine ponderosa pine	interior live oak coast live oak buckeye juniper canyon live oak valley oak ponderosa pine	coast live oak interior live oak canyon live oak

DOUGLAS FIR	SIERRA MIXED CONIFER	KLAMATH MIXED CONIFER
Douglas fir port orford cedar Jeffrey pine sugar pine western hemlock	white fir Douglas fir Ponderosa pine sugar pine incense cedar	Douglas fir white fir ponderosa pine incense cedar sugar pine
tanoak CA huckleberry poison oak	western redcedar	lodgepole pine Jeffrey pine knobcone pine port orford cedar canyon live oak CA black oak

EASTSIDE PINE	WHITE FIR	MONTANE HARDWOOD-CONIFER
ponderosa pine	white fir	
Jeffrey pine lodgepole pine white fir incense cedar Douglas fir CA black oak western juniper	Jeffrey pine sugar pine incense cedar red fir	Ponderosa pine incense cedar Douglas fir tanoak madrone canyon live oak coast live oak

Appendix D

MIXED CHAPARRAL	MONTANE CHAPARRAL	SAGEBRUSH
oaks ceanothus manzanita	ceanothus manzanita bitter cherry	sagebrush rabbitbrush gooseberry
chamise mountain mahogany buckeye sumac buckthorn California fremontia		

Source: Mayer and Laudenslayer, 1988.

APPENDIX E – WHR VEGETATION HIERARCHY

Lifeform	WHR Code	WHR Type
Hardwood	ASP	Aspen
	BOP	Blue Oak- Foothill Pine
	COW	Coastal Oak Woodland
	EUC	Eucalyptus
	MHW	Montane Hardwood
	MRI	Montane Riparian
	VOW	Valley Oak Woodland
	VRI	Valley Foothill Riparian
Conifer	JUN	Juniper
	CPC	Closed Cone Pine-Cypress
	DFR	Douglas Fir
	EPN	Eastside Pine
	JPN	Jeffrey Pine
	KMC	Klamath Mixed Conifer
	LPN	Lodgepole Pine
	MHC	Montane Hardwood-Conifer
	PPN	Ponderosa Pine
	RDW	Redwood
	SCN	Subalpine Conifer
	SMC	Sierran Mixed Conifer
	UCN	Undetermined Conifer
	WFR	White Fir
Shrub/ Chaparral	BBR	Bitterbrush
	CRC	Chamise-Redshank Chaparral
	CSC	Coastal Scrub
	DSC	Desert Scrub
	LSG	Low Sagebrush
	MCH	Mixed Chaparral
	MCP	Montane Chaparral
	SGB	Sagebrush
	UND	Undetermined Shrub/Chaparral Type

Source: Mayer and Laudenslayer, 1988.

APPENDIX F – CALVEG CODES

Lifeform	CALVEG Code	CALVEG Description
Hardwood	QC	Canyon Live Oak
	QD	Blue Oak
	QG	Oregon White Oak
	QJ	Cottonwood/Alder
	QK	California Black Oak
	QM	Bigleaf Maple (Dogwood)
	QO	Willow
	QQ	Quaking Aspen
	QR	Red Alder
	QT	Tanoak
	QY	Willow-Alder
	TA	Mountain Alder
	TC	Tree Chinquapin
Conifer	DF	Pacific Douglas-Fir
	DP	Douglas Fir-Pine
	DT	Douglas Fir-Tanoak
	DW	Douglas Fir-White Fir
	EP	Eastside Pine
	JP	Jeffrey Pine
	KP	Knobcone Pine
	LP	Lodgepole Pine
	MF	Mixed Conifer-Fir
	MP	Mixed Conifer-Pine
	PD	Gray Pine
	PO	Port Oreford Cedar
	PP	Ponderosa Pine
	PW	Ponderosa Pine-White Fir
	RD	Redwood-Douglas Fir
	RF	Red Fir
	SA	Subalpine Conifers
	WB	Whitebark Pine
WF	White Fir	
WJ	Western Juniper	
WW	Western White Pine	
Shrub/Chaparral	BB	Bitterbrush
	BL	Low Sagebrush
	BS	Basin Sagebrush
	CB	Salal-California Huckleberry Shrub
	CC	Ceanothus Chaparral
	CG	Greenleaf Manzanita
	CH	Huckleberry Oak
	CJ	Brewer Oak
	CL	Wedgeleaf Ceanothus
	CM	Upper Montane Mixed Shrub
	CN	Pinemat Manzanita
	CQ	Lower Montane Mixed Chaparral
	CS	Scrub Oak
	CW	Whiteleaf Manzanita
CX	Montane Mixed Chaparral	

Source: USDA Forest Service Regional Ecology Group, 1981.

APPENDIX G – DETAILED MAPS AND TABLES

Project Area Maps and Tables.....43
County Maps and Tables.....60
National Forest Maps and Tables.....132

Project Area Maps and Tables

1. Project Area Change Map
2. Acres of Classified Change by Lifeform Type
3. Acres of Classified Change by Conifer Cover Type
4. Acres of Classified Change by Hardwood Cover Type
5. Acres of Classified Change by Shrub/Chaparral Cover Type
6. Acres of Verified Change by Cause for All Lifeforms and Owner Classes
7. Acres of Classified Change by Lifeform and Owner Class
8. Acres of Classified Change by Conifer cover Type and Owner Class
9. Acres of Classified Change by Hardwood Cover Type and Owner Class
10. Acres of Classified Change by Shrub/Chaparral Cover Type and Owner Class
11. Acres of Verified Change in all Conifer Cover Types by Cause and Owner Class
12. Acres of Verified Change in all Hardwood Cover Types by Cause and Owner Class
13. Acres of Verified Change in all Shrub/Chaparral Cover Types by Cause and Owner Class

Cascade Northeast Project Area

Land Cover Change, 1994 – 1999

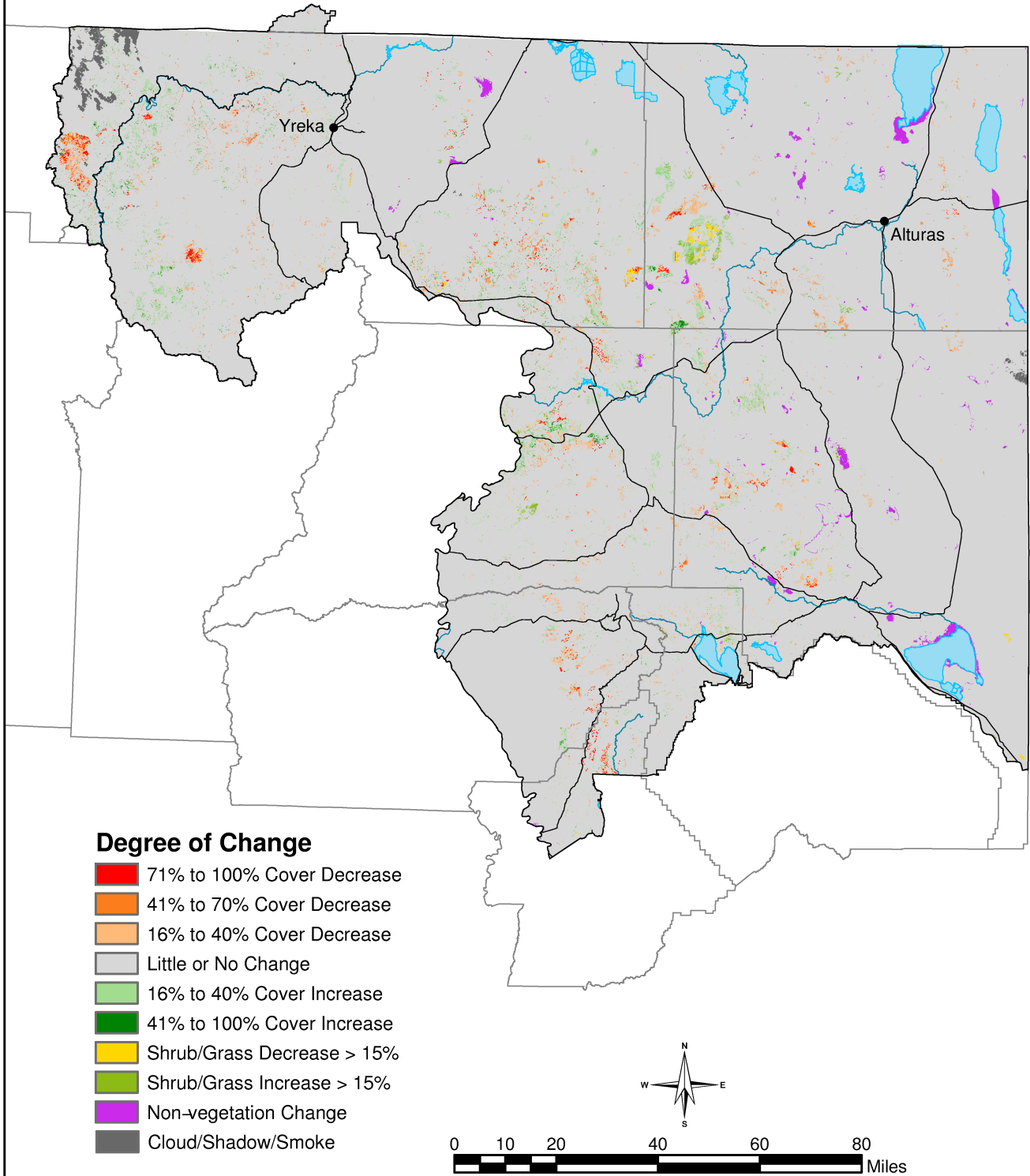


Table P-1 Acres of Classified Change by Lifeform Type

	Conifer		Hardwood		Shrub/ Chaparral		Grass/Forb		Non-Forested		All Lifeforms	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	25,148		1,345								26,493	
-41 to -70% CC	35,737	1	2,291								38,028	
-16 to -40% CC	99,164	2	2,222								101,387	1
+15 to -15% CC (Little or No Change)	5,522,568	94	685,503	97	3,520,727	98	665,070	98	882,718	80	11,276,586	95
+16 to +40% CC	123,040	2	11,567	2							134,607	1
+41 to +100% CC	13,538		238								13,776	
Shrub/Grass Decrease > 15%					16,844		392				17,235	
Shrub/Grass Increase > 15%					26,138	1	948				27,086	
Non-Vegetation Change	318		223		17,827		9,463	1	213,148	19	240,979	2
Cloud or Cloud Shadow	26,273		618		11,368		164		790		39,213	
Total	5,845,786	100	704,007	100	3,592,903	100	676,037	100	1,096,656	100	11,915,390	100

Table P-2 Acres of Classified Change by Conifer Cover Type

	Closed Cone Pine-Cypress		Douglas Fir		Eastside Pine		Jeffrey Pine		Klamath Mixed Conifer	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	383	3	3,995	1	3,217		338	2	2,691	1
-41 to -70% CC	183	1	3,263	1	7,050	1	126	1	3,097	1
-16 to -40% CC	197	2	8,070	2	15,447	1	292	1	6,993	1
+15 to -15% CC (Little or No Change)	11,817	93	447,590	91	1,051,713	95	17,417	84	448,714	93
+16 to +40% CC	102	1	22,210	4	32,827	3	534	3	8,186	2
+41 to +100% CC	7		3,057	1	1,856		48		1,662	
Non-Vegetation Change			2		40				5	
Cloud or Cloud Shadow	18		6,286	1	210		1,991	10	10,883	2
Total	12,707	100	494,474	100	1,112,360	100	20,745	100	482,232	100

	Lodgepole Pine		Juniper		Ponderosa Pine		Red Fir		Montane Hardwood-Conifer	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	278		191		485		640		1,400	1
-41 to -70% CC	438		1,389		623		1,044		1,755	1
-16 to -40% CC	789	1	3,714		2,801	2	2,220	1	3,272	2
+15 to -15% CC (Little or No Change)	86,524	97	778,639	99	169,448	96	307,067	97	168,177	93
+16 to +40% CC	1,182	1	409		2,772	2	3,442	1	4,561	3
+41 to +100% CC	85		30		215		445		734	
Non-Vegetation Change	42		77		38		7			
Cloud or Cloud Shadow			1,070				1,736	1	489	
Total	89,336	100	785,518	100	176,382	100	316,601	100	180,388	100

	Sierran Mixed Conifer		Subalpine Conifer		White Fir		All Conifer	
	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	9,796	1	20		1,714	1	25,148	
-41 to -70% CC	13,963	1	69		2,736	1	35,737	1
-16 to -40% CC	49,304	3	161		5,904	2	99,164	2
+15 to -15% CC (Little or No Change)	1,688,715	93	39,881	98	306,867	94	5,522,568	94
+16 to +40% CC	42,749	2	79		3,988	1	123,040	2
+41 to +100% CC	4,861		12		528		13,538	
Non-Vegetation Change	78		2		27		318	
Cloud or Cloud Shadow	5		381	1	3,203	1	26,273	
Total	1,809,469	100	40,606	100	324,968	100	5,845,786	100

Table P-3 Acres of Classified Change by Hardwood Cover Type

	Aspen		Blue Oak Foothill Pine		Blue Oak Woodland		Montane Hardwood	
	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2		2		8		1,326	
-41 to -70% CC	5		26		89		2,135	1
-16 to -40% CC	2		34		88		2,092	1
+15 to -15% CC (Little or No Change)	8,382	99	22,047	99	289,946	99	348,614	96
+16 to +40% CC	74	1	82		1,721	1	9,567	3
+41 to +100% CC			1				237	
Non-Vegetation Change			3		20		2	
Cloud or Cloud Shadow							617	
Total	8,464	100	22,195	100	291,872	100	364,590	100

	Montane Riparian		Valley Foothill Riparian		Valley Oak Woodland		All Hardwoods	
	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	7						1,345	
-41 to -70% CC	37						2,291	
-16 to -40% CC	6						2,222	
+15 to -15% CC (Little or No Change)	14,334	97	12	100	2,167	100	685,503	97
+16 to +40% CC	123	1			2		11,567	2
+41 to +100% CC							238	
Non-Vegetation Change	198	1					223	
Cloud or Cloud Shadow							618	
Total	14,706	100	12	100	2,168	100	704,007	100

Table P-4 Acres of Classified Change by Shrub/Chaparral Cover Type

	Alkali Scrub		Alpine Dwarf Shrub		Bitterbrush		Low Sagebrush	
	Acres	%	Acres	%	Acres	%	Acres	%
+15 to -15% CC (Little or No Change)	101,691	94	15,864	100	248,467	99	189,525	99
Shrub/Grass Decrease > 15%	3				971		1	
Shrub/Grass Increase > 15%					999		14	
Non-Vegetation Change	6,639	6			87		1,068	1
Cloud or Cloud Shadow					22		259	
Total	108,333	100	15,864	100	250,546	100	190,868	100

	Mixed Chaparral		Montane Chaparral		Sagebrush		All Shrub/ Chaparral	
	Acres	%	Acres	%	Acres	%	Acres	%
+15 to -15% CC (Little or No Change)	318,390	97	488,741	93	2,158,049	99	3,520,727	98
Shrub/Grass Decrease > 15%	2,338	1	11,701	2	1,829		16,844	
Shrub/Grass Increase > 15%	4,962	2	16,092	3	4,070		26,138	1
Non-Vegetation Change	760		152		9,120		17,827	
Cloud or Cloud Shadow	1,633		7,147	1	2,307		11,368	
Total	328,084	100	523,832	100	2,175,376	100	3,592,903	100

Table P-5 Acres of Verified Change by Cause for All Lifeforms and Owner Classes

	Fire	Havest	Develop-ment	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
-71 to -100% CC	10,094	12,413	66	3	208	1,593	2,116	26,493
-41 to -70% CC	9,077	19,724	26	2	831	2,796	5,571	38,028
-16 to -40% CC	19,163	54,567	491	19	2,588	4,006	20,552	101,387
+16 to +40% CC	61	11		98,573	1	450	35,512	134,607
+41 to +100% CC	9	3		11,914		79	1,771	13,776
Shrub/Grass Decrease > 15%	10,519	2,017	32	3	290	1,283	3,093	17,235
Shrub/Grass Increase > 15%	3	1		18,393		232	8,456	27,086
Total	48,926	88,736	615	128,906	3,919	10,440	77,070	358,612

Table P-6 Acres of Classified Change by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/Forb		Non-Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	11,467		799								12,266	
-41 to -70% CC	19,364	1	1,081	1							20,445	
-16 to -40% CC	46,705	1	1,654	1							48,359	1
+15 to -15% CC (Little or No Change)	3,181,586	94	170,343	95	1,167,233	98	63,527	98	116,378	91	4,699,068	95
+16 to +40% CC	76,026	2	5,222	3							81,247	2
+41 to +100% CC	8,230		226								8,456	
Shrub/Grass Decrease > 15%					3,639		92				3,731	
Shrub/Grass Increase > 15%					5,562		116				5,678	
Non-Vegetation Change	39		1		1,782		844	1	10,509	8	13,176	
Cloud or Cloud Shadow	24,765	1	582		8,708	1	143		758	1	34,956	1
Total	3,368,183	100	179,907	100	1,186,925	100	64,723	100	127,645	100	4,927,383	100

	Other Public											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/Forb		Non-Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	173		6								179	
-41 to -70% CC	782		16								799	
-16 to -40% CC	1,950		6								1,956	
+15 to -15% CC (Little or No Change)	387,419	99	57,148	99	1,231,396	99	85,072	97	155,101	68	1,916,136	95
+16 to +40% CC	937		429	1							1,366	
+41 to +100% CC	42		1								43	
Shrub/Grass Decrease > 15%					637		26				663	
Shrub/Grass Increase > 15%					741		175				916	
Non-Vegetation Change	29		47		5,626		2,224	3	73,008	32	80,933	4
Cloud or Cloud Shadow	1,199				2,403		21		32		3,655	
Total	392,532	100	57,654	100	1,240,802	100	87,517	100	228,141	100	2,006,646	100

	Private											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/Forb		Non-Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	13,508	1	540								14,047	
-41 to -70% CC	15,590	1	1,194								16,784	
-16 to -40% CC	50,509	2	563								51,072	1
+15 to -15% CC (Little or No Change)	1,953,562	94	458,011	98	1,122,098	96	516,471	99	611,239	83	4,661,381	94
+16 to +40% CC	46,078	2	5,916	1							51,994	1
+41 to +100% CC	5,266		12								5,277	
Shrub/Grass Decrease > 15%					12,567	1	274				12,842	
Shrub/Grass Increase > 15%					19,835	2	656				20,491	
Non-Vegetation Change	250		175		10,418	1	6,395	1	129,631	17	146,870	3
Cloud or Cloud Shadow	309		36		258						603	
Total	2,085,072	100	466,447	100	1,165,175	100	523,797	100	740,870	100	4,981,361	100

Table P-7 Acres of Classified Change by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Closed Cone Pine-Cypress								
-71 to -100% CC	64	1			320	22	383	3
-41 to -70% CC	56				128	9	183	1
-16 to -40% CC	93	1			105	7	197	2
+15 to -15% CC (Little or No Change)	10,949	97			868	61	11,817	93
+16 to +40% CC	101	1			1		102	1
+41 to +100% CC	7						7	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow	18						18	
Total	11,286	100			1,421	100	12,707	100
Douglas Fir								
-71 to -100% CC	3,701	1	4		290		3,995	1
-41 to -70% CC	2,670	1	3		591	1	3,263	1
-16 to -40% CC	6,263	2	18	1	1,789	2	8,070	2
+15 to -15% CC (Little or No Change)	367,434	89	3,257	99	76,899	96	447,590	91
+16 to +40% CC	21,591	5	9		611	1	22,210	4
+41 to +100% CC	2,927	1			129		3,057	1
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change					1		2	
Cloud or Cloud Shadow	6,180	2			106		6,286	1
Total	410,766	100	3,290	100	80,417	100	494,474	100
Eastside Pine								
-71 to -100% CC	993		8		2,216	1	3,217	
-41 to -70% CC	3,412		26		3,612	1	7,050	1
-16 to -40% CC	8,234	1	128		7,086	2	15,447	1
+15 to -15% CC (Little or No Change)	660,833	95	41,428	98	349,452	93	1,051,713	95
+16 to +40% CC	20,749	3	421	1	11,656	3	32,827	3
+41 to +100% CC	1,102		6		749		1,856	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	11		1		28		40	
Cloud or Cloud Shadow	66		143				210	
Total	695,400	100	42,161	100	374,799	100	1,112,360	100
Jeffrey Pine								
-71 to -100% CC	334	2			4		338	2
-41 to -70% CC	121	1			5		126	1
-16 to -40% CC	279	1			12	1	292	1
+15 to -15% CC (Little or No Change)	15,560	83	60	100	1,798	95	17,417	84
+16 to +40% CC	494	3			40	2	534	3
+41 to +100% CC	36				12	1	48	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow	1,971	10			20	1	1,991	10
Total	18,794	100	60	100	1,891	100	20,745	100

Table P-7 Acres of Classified Change by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Juniper								
-71 to -100% CC	29		3		159		191	
-41 to -70% CC	549		101		738		1,389	
-16 to -40% CC	3,157	1	120		437		3,714	
+15 to -15% CC (Little or No Change)	307,001	99	219,078	99	252,560	99	778,639	99
+16 to +40% CC	186		50		173		409	
+41 to +100% CC	18				11		30	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	1		27		49		77	
Cloud or Cloud Shadow			1,056		14		1,070	
Total	310,941	100	220,435	100	254,142	100	785,518	100
Klamath Mixed Conifer								
-71 to -100% CC	2,213	1			479		2,691	1
-41 to -70% CC	2,235	1	2		860	1	3,097	1
-16 to -40% CC	4,772	1	2		2,218	2	6,993	1
+15 to -15% CC (Little or No Change)	346,643	92	1,970	99	100,101	95	448,714	93
+16 to +40% CC	7,108	2	9		1,069	1	8,186	2
+41 to +100% CC	1,380		2		280		1,662	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change					5		5	
Cloud or Cloud Shadow	10,753	3			130		10,883	2
Total	375,104	100	1,985	100	105,143	100	482,232	100
Lodgepole Pine								
-71 to -100% CC	33				245	1	278	
-41 to -70% CC	157		1		280	1	438	
-16 to -40% CC	361	1	6		422	2	789	1
+15 to -15% CC (Little or No Change)	65,691	98	3,119	99	17,714	93	86,524	97
+16 to +40% CC	856	1	24	1	302	2	1,182	1
+41 to +100% CC	66		5		14		85	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	7				35		42	
Cloud or Cloud Shadow								
Total	67,171	100	3,154	100	19,011	100	89,336	100
Montane Hardwood-Conifer								
-71 to -100% CC	1,174	1			226		1,400	1
-41 to -70% CC	1,231	1	2		521	1	1,755	1
-16 to -40% CC	2,959	2	2		311	1	3,272	2
+15 to -15% CC (Little or No Change)	111,424	92	3,065	99	53,688	96	168,177	93
+16 to +40% CC	3,576	3	28	1	957	2	4,561	3
+41 to +100% CC	307				427	1	734	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow	487				2		489	
Total	121,158	100	3,098	100	56,132	100	180,388	100

Table P-7 Acres of Classified Change by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Ponderosa Pine								
-71 to -100% CC	21		3		462		485	
-41 to -70% CC	172	1	2		449		623	
-16 to -40% CC	445	2	3		2,352	2	2,801	2
+15 to -15% CC (Little or No Change)	22,588	96	5,948	100	140,911	96	169,448	96
+16 to +40% CC	250	1	20		2,501	2	2,772	2
+41 to +100% CC	68				146		215	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change					38		38	
Cloud or Cloud Shadow								
Total	23,545	100	5,977	100	146,860	100	176,382	100
Red Fir								
-71 to -100% CC	233		13		393	1	640	
-41 to -70% CC	559		99		386	1	1,044	
-16 to -40% CC	1,511	1	131		578	2	2,220	1
+15 to -15% CC (Little or No Change)	234,689	97	38,530	99	33,847	95	307,067	97
+16 to +40% CC	2,876	1	58		508	1	3,442	1
+41 to +100% CC	379		8		58		445	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	3				4		7	
Cloud or Cloud Shadow	1,711	1			26		1,736	1
Total	241,961	100	38,840	100	35,800	100	316,601	100
Sierran Mixed Conifer								
-71 to -100% CC	2,074		127		7,595	1	9,796	1
-41 to -70% CC	6,788	1	501	1	6,674	1	13,963	1
-16 to -40% CC	15,167	2	1,478	2	32,659	4	49,304	3
+15 to -15% CC (Little or No Change)	772,278	95	61,766	96	854,671	92	1,688,715	93
+16 to +40% CC	15,426	2	308		27,015	3	42,749	2
+41 to +100% CC	1,511		21		3,329		4,861	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	15				63		78	
Cloud or Cloud Shadow	5						5	
Total	813,262	100	64,201	100	932,006	100	1,809,469	100
Subalpine Conifer								
-71 to -100% CC	11				9		20	
-41 to -70% CC	29				41	1	69	
-16 to -40% CC	111				50	1	161	
+15 to -15% CC (Little or No Change)	33,878	98	2,393	100	3,610	97	39,881	98
+16 to +40% CC	68		1		10		79	
+41 to +100% CC	9				2		12	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	2						2	
Cloud or Cloud Shadow	381	1					381	1
Total	34,490	100	2,394	100	3,722	100	40,606	100

Table P-7 Acres of Classified Change by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
White Fir								
-71 to -100% CC	589		14		1,112	2	1,714	1
-41 to -70% CC	1,386	1	46	1	1,305	2	2,736	1
-16 to -40% CC	3,353	1	62	1	2,489	3	5,904	2
+15 to -15% CC (Little or No Change)	232,619	95	6,806	98	67,442	91	306,867	94
+16 to +40% CC	2,745	1	9		1,234	2	3,988	1
+41 to +100% CC	420				108		528	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change					27		27	
Cloud or Cloud Shadow	3,193	1			10		3,203	1
Total	244,305	100	6,936	100	73,727	100	324,968	100
All Conifer	3,368,183		392,532		2,085,072		5,845,786	

Table P-8 Acres of Classified Change by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
-71 to -100% CC			1		1		2	
-41 to -70% CC			2		2		5	
-16 to -40% CC			1				2	
+15 to -15% CC (Little or No Change)	6,383	99	1,293	98	707	98	8,382	99
+16 to +40% CC	34	1	29	2	11	2	74	1
+41 to +100% CC								
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow								
Total	6,417	100	1,325	100	721	100	8,464	100
Blue Oak Woodland								
-71 to -100% CC					8		8	
-41 to -70% CC	3		1		85		89	
-16 to -40% CC	4				84		88	
+15 to -15% CC (Little or No Change)	17,788	100	32,156	100	240,002	99	289,946	99
+16 to +40% CC	3		52		1,667	1	1,721	1
+41 to +100% CC								
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change			5		14		20	
Cloud or Cloud Shadow								
Total	17,798	100	32,214	100	241,860	100	291,872	100
Blue Oak-Foothill Pine								
-71 to -100% CC	1				1		2	
-41 to -70% CC	1				24		26	
-16 to -40% CC	6				28		34	
+15 to -15% CC (Little or No Change)	2,343	99	1,281	100	18,423	99	22,047	99
+16 to +40% CC	23	1	1		57		82	
+41 to +100% CC	1						1	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change					3		3	
Cloud or Cloud Shadow								
Total	2,376	100	1,284	100	18,536	100	22,195	100
Montane Hardwood								
-71 to -100% CC	797	1	4		525		1,326	
-41 to -70% CC	1,073	1	12		1,050	1	2,135	1
-16 to -40% CC	1,641	1	4		447		2,092	1
+15 to -15% CC (Little or No Change)	141,554	94	18,628	98	188,432	97	348,614	96
+16 to +40% CC	5,134	3	334	2	4,099	2	9,567	3
+41 to +100% CC	224		1		12		237	
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change	1				1		2	
Cloud or Cloud Shadow	582				36		617	
Total	151,007	100	18,983	100	194,601	100	364,590	100

Table P-8 Acres of Classified Change by Hardwood Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Montane Riparian								
-71 to -100% CC			1		6		7	
-41 to -70% CC	4				32		37	
-16 to -40% CC	2				5		6	
+15 to -15% CC (Little or No Change)	2,275	99	3,232	98	8,827	97	14,334	97
+16 to +40% CC	28	1	12		83	1	123	1
+41 to +100% CC								
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change			41	1	157	2	198	1
Cloud or Cloud Shadow								
Total	2,309	100	3,288	100	9,109	100	14,706	100
Valley Foothill Riparian								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)			11	100	1	100	12	100
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow								
Total			11	100	1	100	12	100
Valley Oak Woodland								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)			548	100	1,619	100	2,167	100
+16 to +40% CC			2				2	
+41 to +100% CC								
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow								
Total			549	100	1,619	100	2,168	100
All Hardwood	179,907		57,654		466,447		704,007	

Table P-9 Acres of Classified Change by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Alkali Scrub								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	3	100	57,335	93	44,352	95	101,691	94
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%					3		3	
Shrub/Grass Increase > 15%								
Non-Vegetation Change			4,436	7	2,203	5	6,639	6
Cloud or Cloud Shadow								
Total	3	100	61,772	100	46,558	100	108,333	100
Alpine Dwarf Shrub								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	15,694	100	116	100	55	100	15,864	100
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%								
Shrub/Grass Increase > 15%								
Non-Vegetation Change								
Cloud or Cloud Shadow								
Total	15,694	100	116	100	55	100	15,864	100
Bitterbrush								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	128,552	100	44,588	100	75,328	98	248,467	99
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%	114		1		857	1	971	
Shrub/Grass Increase > 15%	381				618	1	999	
Non-Vegetation Change	10		4		73		87	
Cloud or Cloud Shadow	22						22	
Total	129,079	100	44,592	100	76,876	100	250,546	100
Low Sagebrush								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	144,905	99	27,101	99	17,518	100	189,525	99
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%	1						1	
Shrub/Grass Increase > 15%			4		10		14	
Non-Vegetation Change	874	1	130		64		1,068	1
Cloud or Cloud Shadow			254	1	5		259	
Total	145,780	100	27,490	100	17,598	100	190,868	100

Table P-9 Acres of Classified Change by Shrub/Chaparral Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Mixed Chaparral								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	71,590	96	58,131	99	188,668	97	318,390	97
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%	918	1	15		1,405	1	2,338	1
Shrub/Grass Increase > 15%	491	1	275		4,196	2	4,962	2
Non-Vegetation Change			76		684		760	
Cloud or Cloud Shadow	1,589	2			44		1,633	
Total	74,589	100	58,497	100	194,997	100	328,084	100
Montane Chaparral								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	300,246	96	23,165	99	165,329	88	488,741	93
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%	2,381	1	71		9,248	5	11,701	2
Shrub/Grass Increase > 15%	3,694	1	248	1	12,150	7	16,092	3
Non-Vegetation Change	44		4		104		152	
Cloud or Cloud Shadow	7,096	2			50		7,147	1
Total	313,462	100	23,489	100	186,881	100	523,832	100
Sagebrush								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	506,243	100	1,020,959	100	630,847	98	2,158,049	99
+16 to +40% CC								
+41 to +100% CC								
Shrub/Grass Decrease > 15%	225		550		1,055		1,829	
Shrub/Grass Increase > 15%	996		214		2,860		4,070	
Non-Vegetation Change	854		975		7,291	1	9,120	
Cloud or Cloud Shadow			2,149		158		2,307	
Total	508,319	100	1,024,847	100	642,210	100	2,175,376	100
All Shrub/Chaparral	1,186,925		1,240,802		1,165,175		3,592,903	

Table P-10 Acres of Verified Change in all Conifer Cover Types by Cause and Owner Class

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Forest Service								
-71 to -100% CC	7,058	3,136	4	2	201	490	576	11,467
-41 to -70% CC	5,950	9,892	6	2	781	1,012	1,720	19,364
-16 to -40% CC	14,643	21,510	22	17	2,366	2,687	5,460	46,705
+16 to +40% CC	5	2		66,772	1	152	9,095	76,026
+41 to +100% CC				7,546		38	646	8,230
Total	27,657	34,540	32	74,339	3,349	4,380	17,497	161,793
Other Public								
-71 to -100% CC	99	25				1	48	173
-41 to -70% CC	486	86			5	63	143	782
-16 to -40% CC	695	721	28		94	31	382	1,950
+16 to +40% CC				278			659	937
+41 to +100% CC				18			25	42
Total	1,279	832	28	296	99	95	1,256	3,884
Private								
-71 to -100% CC	2,395	8,896	57	1	1	887	1,271	13,508
-41 to -70% CC	2,108	9,133	18		11	1,384	2,936	15,590
-16 to -40% CC	2,751	32,078	441	1	30	1,059	14,149	50,509
+16 to +40% CC	56	9		27,438		272	18,303	46,078
+41 to +100% CC	9	3		4,189		41	1,023	5,266
Total	7,319	50,119	517	31,630	41	3,642	37,682	130,950
All Owners	36,255	85,491	576	106,264	3,488	8,117	56,435	296,627

Table P-11 Acres of Verified Change in all Hardwood Cover Types by Cause and Owner Class

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Forest Service								
-71 to -100% CC	530	32			7	166	64	799
-41 to -70% CC	497	107			34	259	184	1,081
-16 to -40% CC	1,067	66			99	172	250	1,654
+16 to +40% CC				3,379			1,843	5,222
+41 to +100% CC				158			67	226
Total	2,094	205		3,537	140	597	2,407	8,980
Other Public								
-71 to -100% CC							6	6
-41 to -70% CC							16	16
-16 to -40% CC							6	6
+16 to +40% CC				30			400	429
+41 to +100% CC							1	1
Total				30			428	458
Private								
-71 to -100% CC	12	323	4			48	152	540
-41 to -70% CC	35	506	3			78	572	1,194
-16 to -40% CC	8	193			1	58	305	563
+16 to +40% CC				677		27	5,213	5,916
+41 to +100% CC				2			9	12
Total	55	1,022	7	679	1	211	6,251	8,225
All Owners	2,149	1,227	7	4,246	140	808	9,086	17,664

Table P-12 Acres of Verified Change in all Shrub/Chaparral Cover Types by Cause and Owner Class

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Forest Service								
Shrub/Grass Decrease > 15%	2,064	494	1		290	352	438	3,639
Shrub/Grass Increase > 15%				4,014		86	1,462	5,562
Total	2,064	494	1	4,014	290	439	1,900	9,201
Other Public								
Shrub/Grass Decrease > 15%	502	30					105	637
Shrub/Grass Increase > 15%				135			606	741
Total	502	30		135			711	1,378
Private								
Shrub/Grass Decrease > 15%	7,900	1,415	30	3		840	2,379	12,567
Shrub/Grass Increase > 15%	3	1		13,925		146	5,760	19,835
Total	7,904	1,416	30	13,928		986	8,138	32,402
All Owners	10,469	1,941	31	18,077	290	1,425	10,749	42,982

County Maps and Tables

1. Change Map
2. Table of Change by Lifeform and Owner Class
3. Table of Change by Cause and Lifeform
4. Table of Change by Conifer Cover Type and Owner Class
5. Table of Change by Hardwood Type and Owner Class
6. Table of Change by Shrub/Chaparral Type and Owner Class
7. Table of Conifer Change by Cause
8. Table of Hardwood Change by Cause
9. Table of Shrub/Chaparral Change by Cause

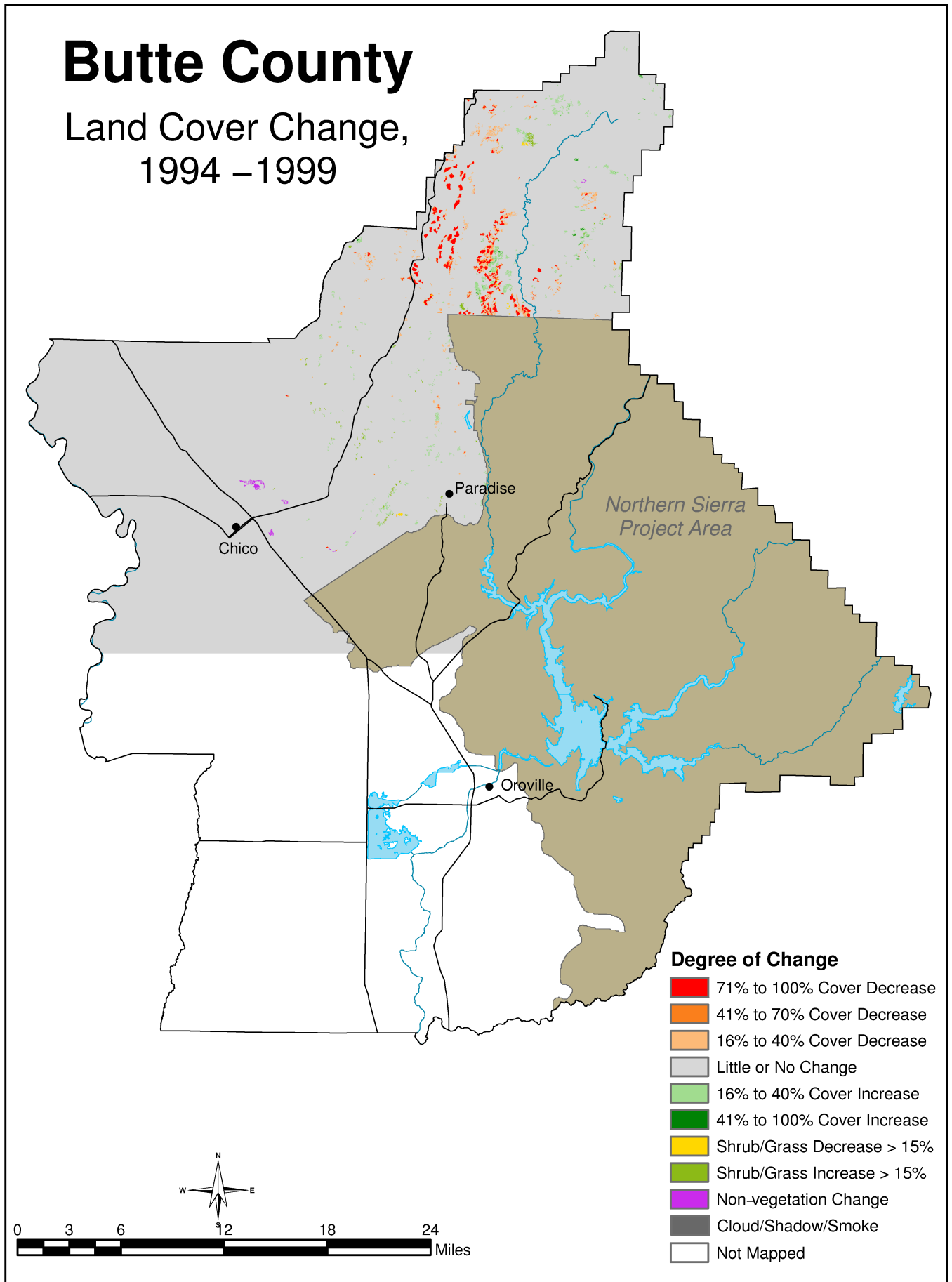


Table C-1 Acres of Classified Change in Butte County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-41 to -70% CC	1										1	
-16 to -40% CC	10										10	
+15 to -15% CC (Little or No Change)	35,387	99	775	100	3,052	99	139	100	256	100	39,609	99
+16 to +40% CC	254	1	3								257	1
+41 to +100% CC	25										25	
Shrub/Grass Decrease > 15%												
Shrub/Grass Increase > 15%					28	1					28	
Total	35,678	100	778	100	3,080	100	139	100	256	100	39,931	100
	Other Public											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC			3								3	
-41 to -70% CC	4		3								7	
-16 to -40% CC	4										4	
+15 to -15% CC (Little or No Change)	3,069	99	4,451	98	1,253	93	206	100	34	100	9,014	98
+16 to +40% CC	19	1	56	1							75	1
+41 to +100% CC	2										2	
Shrub/Grass Decrease > 15%					40	3					40	
Shrub/Grass Increase > 15%					61	5					61	1
Non-Vegetation Change			6								6	
Total	3,098	100	4,520	100	1,355	100	206	100	34	100	9,212	100
	Private											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2,077	2	109								2,186	1
-41 to -70% CC	541	1	78								619	
-16 to -40% CC	2,516	3	18								2,534	1
+15 to -15% CC (Little or No Change)	76,678	92	59,385	99	21,148	98	19,540	100	598	98	177,348	96
+16 to +40% CC	1,434	2	464	1							1,898	1
+41 to +100% CC	65										65	
Shrub/Grass Decrease > 15%					90		8				98	
Shrub/Grass Increase > 15%					352	2					352	
Non-Vegetation Change	1		3				26		10	2	41	
Total	83,312	100	60,057	100	21,590	100	19,575	100	608	100	185,142	100
	All Owners											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		All Owners Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2,077	2	112								2,189	1
-41 to -70% CC	547		81								628	
-16 to -40% CC	2,530	2	18								2,549	1
+15 to -15% CC (Little or No Change)	115,134	94	64,611	99	25,453	98	19,885	100	888	99	225,971	96
+16 to +40% CC	1,706	1	524	1							2,230	1
+41 to +100% CC	92										92	
Shrub/Grass Decrease > 15%					130		8				139	
Shrub/Grass Increase > 15%					441	2					441	
Non-Vegetation Change	1		9				26		10	1	47	
Total	122,088	100	65,355	100	26,024	100	19,920	100	898	100	234,286	100

Table C-2 Acres of Verified Change in Butte County by Cause and Lifeform

	Harvest	Regrowth	Unverified Cause	All Causes
Conifer				
-71 to -100% CC	1,962		115	2,077
-41 to -70% CC	435		112	547
-16 to -40% CC	1,846		684	2,530
+16 to +40% CC	1	860	845	1,706
+41 to +100% CC		54	38	92
Total	4,244	915	1,794	6,953
Hardwood				
-71 to -100% CC	106		6	112
-41 to -70% CC	47		34	81
-16 to -40% CC	9		10	18
+16 to +40% CC		117	407	524
Total	161	117	457	735
Shrub/Chaparral				
Shrub/Grass Decrease > 15%	36		94	130
Shrub/Grass Increase > 15%		148	294	441
Total	36	148	388	572
Grass/Forb				
Shrub/Grass Decrease > 15%	8			8
Total	8			8
All Lifeforms	4,449	1,180	2,639	8,268

Table C-3 Acres of Classified Change in Butte County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Closed Cone Pine-Cypress								
+15 to -15% CC (Little or No Change)	4	100			12	100	16	100
Total	4	100			12	100	16	100
Douglas Fir								
-71 to -100% CC					3		3	
-41 to -70% CC					3		3	
-16 to -40% CC					29	2	29	1
+15 to -15% CC (Little or No Change)	55	100	34	99	1,838	98	1,926	98
+16 to +40% CC				1	6		7	
Total	55	100	34	100	1,880	100	1,969	100
Lodgepole Pine								
-71 to -100% CC					2		2	
-41 to -70% CC								
-16 to -40% CC					10	2	10	2
+15 to -15% CC (Little or No Change)	111	97	20	83	411	97	542	96
+16 to +40% CC	4	3	3	14			7	1
+41 to +100% CC			1	4			1	
Total	115	100	24	100	423	100	563	100
Montane Hardwood-Conifer								
-71 to -100% CC					40	1	40	1
-41 to -70% CC			2	1	19		22	
-16 to -40% CC			1		7		8	
+15 to -15% CC (Little or No Change)	377	100	273	98	4,730	98	5,380	98
+16 to +40% CC			1		14		15	
Non-Vegetation Change								
Total	377	100	278	100	4,810	100	5,464	100
Ponderosa Pine								
-71 to -100% CC					305	1	305	1
-41 to -70% CC			1		91		92	
-16 to -40% CC					386	2	386	2
+15 to -15% CC (Little or No Change)	18	100	1,370	100	22,696	96	24,084	96
+16 to +40% CC			2		134	1	136	1
+41 to +100% CC					1		1	
Total	18	100	1,374	100	23,611	100	25,003	100
Red Fir								
+15 to -15% CC (Little or No Change)	1,425	98			12	100	1,437	98
+16 to +40% CC	22	2					22	2
Total	1,447	100			12	100	1,460	100

Table C-3 Acres of Classified Change in Butte County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Sierran Mixed Conifer								
-71 to -100% CC					1,728	3	1,728	2
-41 to -70% CC	1		1		428	1	430	1
-16 to -40% CC	10		2		2,084	4	2,097	3
+15 to -15% CC (Little or No Change)	28,770	99	1,147	99	46,588	89	76,505	93
+16 to +40% CC	207	1	13	1	1,279	2	1,498	2
+41 to +100% CC	25		1		65		90	
Total	29,013	100	1,164	100	52,171	100	82,348	100
White Fir								
+15 to -15% CC (Little or No Change)	4,628	100	225	100	391	100	5,243	100
+16 to +40% CC	21				1		22	
+41 to +100% CC								
Non-Vegetation Change					1		1	
Total	4,649	100	225	100	392	100	5,266	100
All Conifer	35,678		3,098		83,312		122,088	

Table C-4 Acres of Classified Change in Butte County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
-71 to -100% CC						1		
-41 to -70% CC					1	1	1	1
+15 to -15% CC (Little or No Change)	87	100	7	100	63	98	157	99
Total	87	100	7	100	65	100	159	100
Blue Oak Woodland								
-71 to -100% CC					2		2	
-41 to -70% CC			1		21		22	
-16 to -40% CC					5		5	
+15 to -15% CC (Little or No Change)			2,921	99	46,948	99	49,869	99
+16 to +40% CC			33	1	369	1	403	1
Non-Vegetation Change			5		1		6	
Total			2,961	100	47,347	100	50,308	100
Blue Oak-Foothill Pine								
-71 to -100% CC					1		1	
-41 to -70% CC					3		4	
-16 to -40% CC					1		1	
+15 to -15% CC (Little or No Change)			612	100	2,597	99	3,209	99
+16 to +40% CC			1		11		12	
Non-Vegetation Change					2		2	
Total			614	100	2,615	100	3,229	100
Montane Hardwood								
-71 to -100% CC			1		106	1	107	1
-41 to -70% CC			1		52	1	54	
-16 to -40% CC					12		12	
+15 to -15% CC (Little or No Change)	501	100	806	97	9,444	97	10,751	98
+16 to +40% CC			20	2	82	1	103	1
Non-Vegetation Change								
Total	501	100	829	100	9,696	100	11,026	100
Montane Riparian								
-71 to -100% CC			1	2			1	
-41 to -70% CC				1				
+15 to -15% CC (Little or No Change)	188	98	77	97	322	99	587	99
+16 to +40% CC	3	2			2	1	5	1
Total	191	100	79	100	324	100	594	100
Valley Foothill Riparian								
+15 to -15% CC (Little or No Change)			11	100	1	100	12	100
Total			11	100	1	100	12	100
Valley Oak Woodland								
+15 to -15% CC (Little or No Change)			17	90	9	100	26	94
+16 to +40% CC			2	10			2	6
Total			18	100	9	100	28	100
All Hardwood	778		4,520		60,057		65,355	

Table C-5 Acres of Classified Change in Butte County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	4	100	1,136	96	18,185	99	19,326	98
Shrub/Grass Decrease > 15%			1		43		44	
Shrub/Grass Increase > 15%			42	4	223	1	264	1
Non-Vegetation Change								
Total	4	100	1,178	100	18,451	100	19,634	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	3,047	99	117	66	2,963	94	6,127	96
Shrub/Grass Decrease > 15%			39	22	47	1	87	1
Shrub/Grass Increase > 15%	28	1	20	11	130	4	177	3
Total	3,076	100	176	100	3,139	100	6,391	100
All Shrub/Chaparral	3,080		1,355		21,590		26,024	

Table C-6 Acres of Verified Change in Butte County by Cause and Conifer Cover Type

	Harvest	Regrowth	Unverified Cause	All Causes
Douglas Fir				
-71 to -100% CC			3	3
-41 to -70% CC	1		3	3
-16 to -40% CC	10		19	29
+16 to +40% CC			7	7
Total	11		31	42
Lodgepole Pine				
-71 to -100% CC	2			2
-41 to -70% CC				
-16 to -40% CC	10			10
+16 to +40% CC			7	7
+41 to +100% CC			1	1
Total	12		8	20
Montane Hardwood-Conifer				
-71 to -100% CC	39		1	40
-41 to -70% CC	11		10	22
-16 to -40% CC	2		6	8
+16 to +40% CC		4	11	15
Total	52	4	28	85
Ponderosa Pine				
-71 to -100% CC	294		11	305
-41 to -70% CC	57		35	92
-16 to -40% CC	118		268	386
+16 to +40% CC			136	136
+41 to +100% CC			1	1
Total	469		450	919
Red Fir				
+16 to +40% CC		21	2	22
Total		21	2	22
Sierran Mixed Conifer				
-71 to -100% CC	1,627		100	1,728
-41 to -70% CC	366		64	430
-16 to -40% CC	1,705		391	2,097
+16 to +40% CC	1	822	675	1,498
+41 to +100% CC		54	36	90
Total	3,699	877	1,267	5,842
White Fir				
+16 to +40% CC		14	8	22
+41 to +100% CC				
Total		14	8	22
All Conifer	4,244	915	1,794	6,953

Table C-7 Acres of Verified Change in Butte County by Cause and Hardwood Cover Type

	Harvest	Regrowth	Unverified Cause	All Causes
Aspen				
-71 to -100% CC				
-41 to -70% CC			1	1
Total			1	1
Blue Oak Woodland				
-71 to -100% CC			2	2
-41 to -70% CC			22	22
-16 to -40% CC			5	5
+16 to +40% CC		114	288	403
Total		114	318	432
Blue Oak-Foothill Pine				
-71 to -100% CC			1	1
-41 to -70% CC			4	4
-16 to -40% CC			1	1
+16 to +40% CC			12	12
Total			18	18
Montane Hardwood				
-71 to -100% CC	106		1	107
-41 to -70% CC	47		7	54
-16 to -40% CC	9		3	12
+16 to +40% CC		2	100	103
Total	161	2	111	275
Montane Riparian				
-71 to -100% CC			1	1
-41 to -70% CC				
+16 to +40% CC			5	5
Total			7	7
Valley Oak Woodland				
+16 to +40% CC			2	2
Total			2	2
All Hardwood	161	117	457	735

Table C-8 Acres of Verified Change in Butte County by Cause and Shrub/Chaparral Cover Type

	Harvest	Regrowth	Unverified Cause	All Causes
Mixed Chaparral				
Shrub/Grass Decrease > 15%	11		32	44
Shrub/Grass Increase > 15%		105	159	264
Total	11	105	191	308
Montane Chaparral				
Shrub/Grass Decrease > 15%	25		62	87
Shrub/Grass Increase > 15%		42	135	177
Total	25	42	197	264
All Shrub/Chaparral	36	148	388	572

Lassen County

Land Cover Change, 1994 – 1999

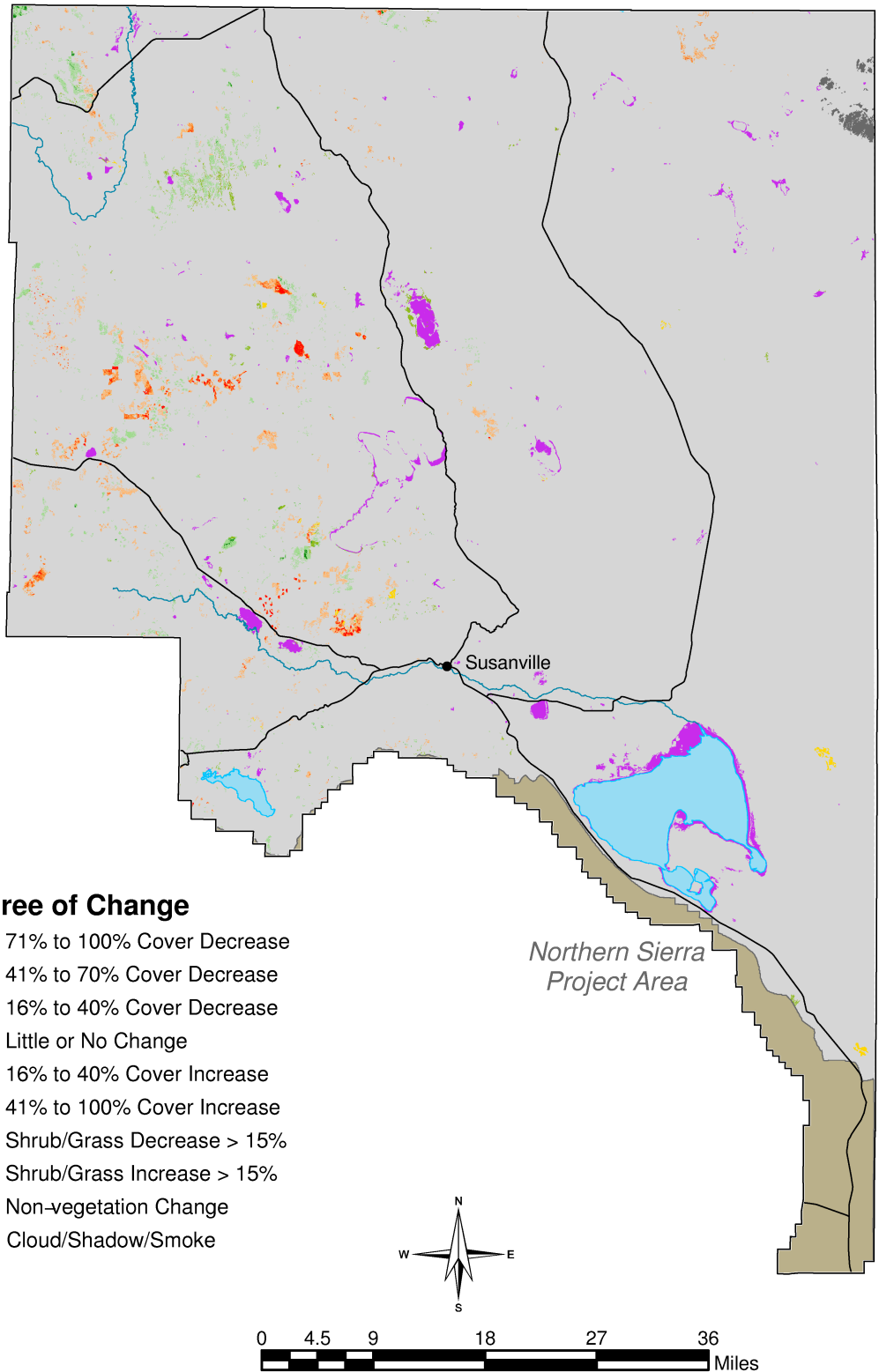


Table C-9 Acres of Classified Change in Lassen County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	1,114										1,114	
-41 to -70% CC	2,600	1									2,600	
-16 to -40% CC	10,084	2									10,084	2
+15 to -15% CC (Little or No Change)	414,734	95	1,430	98	124,216	98	15,423	96	8,352	76	564,155	95
+16 to +40% CC	8,221	2	22	2							8,244	1
+41 to +100% CC	184										184	
Shrub/Grass Decrease > 15%					255						255	
Shrub/Grass Increase > 15%					1,748	1	29				1,778	
Non-Vegetation Change	18				698	1	584	4	2,658	24	3,958	1
Total	436,954	100	1,452	100	126,917	100	16,036	100	11,011	100	592,370	100
	Other Public											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	107										107	
-41 to -70% CC	513										513	
-16 to -40% CC	1,357	1									1,357	
+15 to -15% CC (Little or No Change)	190,848	98	4,191	99	879,854	99	17,111	95	24,480	28	1,116,485	94
+16 to +40% CC	610		15								625	
+41 to +100% CC	14										14	
Shrub/Grass Decrease > 15%					548		26				574	
Shrub/Grass Increase > 15%					262		1				263	
Non-Vegetation Change	29		41	1	5,284	1	919	5	62,044	72	68,318	6
Cloud or Cloud Shadow	1,199	1			2,403		21		32		3,655	
Total	194,676	100	4,248	100	888,351	100	18,078	100	86,557	100	1,191,909	100
	Private											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non-Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	1,216										1,216	
-41 to -70% CC	1,285		1								1,286	
-16 to -40% CC	7,151	2									7,151	1
+15 to -15% CC (Little or No Change)	369,483	96	6,843	96	483,229	98	65,363	96	150,015	95	1,074,934	97
+16 to +40% CC	6,840	2	117	2							6,957	1
+41 to +100% CC	337										337	
Shrub/Grass Decrease > 15%					1,075		38				1,114	
Shrub/Grass Increase > 15%					1,889		5				1,894	
Non-Vegetation Change	12		156	2	6,416	1	2,374	4	8,207	5	17,166	2
Cloud or Cloud Shadow	14				163						178	
Total	386,338	100	7,119	100	492,773	100	67,780	100	158,222	100	1,112,232	100

Table C-9 Acres of Classified Change in Lassen County by Lifeform and Owner Class (cont.)

	All Owners											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		All Owners Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2,436										2,436	
-41 to -70% CC	4,398		1								4,399	
-16 to -40% CC	18,591	2									18,592	1
+15 to -15% CC (Little or No Change)	975,065	96	12,464	97	1,487,299	99	97,897	96	182,848	71	2,755,573	95
+16 to +40% CC	15,671	2	155	1							15,826	1
+41 to +100% CC	534										534	
Shrub/Grass Decrease > 15%					1,878		64				1,943	
Shrub/Grass Increase > 15%					3,899		35				3,934	
Non-Vegetation Change	59		198	2	12,399	1	3,877	4	72,910	29	89,442	3
Cloud or Cloud Shadow	1,214				2,566		21		32		3,833	
Total	1,017,968	100	12,819	100	1,508,041	100	101,894	100	255,790	100	2,896,512	100

Table C-10 Acres of Verified Change in Lassen County by Cause and Lifeform

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Conifer							
-71 to -100% CC	754	1,609		7	14	52	2,436
-41 to -70% CC	980	3,026		16	53	324	4,398
-16 to -40% CC	1,240	13,275	8	272	117	3,680	18,591
+16 to +40% CC			11,164			4,507	15,671
+41 to +100% CC			501			33	534
Total	2,973	17,910	11,673	294	184	8,595	41,630
Hardwood							
-71 to -100% CC							
-41 to -70% CC						1	1
-16 to -40% CC							
+16 to +40% CC			45			110	155
Total			45			112	157
Shrub/Chaparral							
Shrub/Grass Decrease > 15%	861	421		13	2	582	1,878
Shrub/Grass Increase > 15%			2,190			1,709	3,899
Total	861	421	2,190	13	2	2,291	5,778
Grass/Forb							
Shrub/Grass Decrease > 15%	10	26				28	64
Shrub/Grass Increase > 15%						35	35
Total	10	26				63	99
All Lifeforms	3,845	18,357	13,908	307	185	11,061	47,664

Table C-11 Acres of Classified Change in Lassen County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Eastside Pine								
-71 to -100% CC	258		8		230		495	
-41 to -70% CC	620		12		455		1,087	
-16 to -40% CC	3,847	2	24		2,935	2	6,806	2
+15 to -15% CC (Little or No Change)	199,946	95	29,623	98	159,790	97	389,358	96
+16 to +40% CC	5,835	3	390	1	1,471	1	7,696	2
+41 to +100% CC	107				27		134	
Non-Vegetation Change	8		1		3		12	
Cloud or Cloud Shadow			143				143	
Total	210,620	100	30,200	100	164,911	100	405,731	100
Jeffrey Pine								
-41 to -70% CC	1						1	
-16 to -40% CC	34	2					34	2
+15 to -15% CC (Little or No Change)	1,893	98			64	100	1,957	98
Total	1,927	100			64	100	1,992	100
Juniper								
-71 to -100% CC							1	
-41 to -70% CC			6		3		9	
-16 to -40% CC	147	1	61		24		231	
+15 to -15% CC (Little or No Change)	16,241	99	132,241	99	49,220	100	197,701	99
+16 to +40% CC	60		49		33		141	
Non-Vegetation Change	1		27		4		32	
Cloud or Cloud Shadow			1,056	1	14		1,070	1
Total	16,449	100	133,440	100	49,298	100	199,187	100
Lodgepole Pine								
-71 to -100% CC	1				19		20	
-41 to -70% CC	3		1		9		13	
-16 to -40% CC	43		6		39	1	88	
+15 to -15% CC (Little or No Change)	23,780	99	1,153	99	4,206	96	29,139	99
+16 to +40% CC	198	1	7	1	93	2	298	1
+41 to +100% CC	3		1		6		10	
Non-Vegetation Change	6				2		8	
Total	24,034	100	1,168	100	4,374	100	29,577	100
Montane Hardwood-Conifer								
+15 to -15% CC (Little or No Change)		100	52	100			53	100
Total		100	52	100			53	100

Table C-11 Acres of Classified Change in Lassen County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Red Fir								
-71 to -100% CC	13		12		49	2	74	
-41 to -70% CC	66		89	1	77	4	232	1
-16 to -40% CC	236	1	106	1	218	11	561	1
+15 to -15% CC (Little or No Change)	26,201	97	9,207	98	1,662	82	37,071	97
+16 to +40% CC	405	2	1		14	1	420	1
+41 to +100% CC	8						8	
Total	26,928	100	9,416	100	2,020	100	38,365	100
Sierran Mixed Conifer								
-71 to -100% CC	784	1	87		906	1	1,776	1
-41 to -70% CC	1,648	1	398	2	718		2,764	1
-16 to -40% CC	5,389	4	1,141	6	3,835	2	10,365	3
+15 to -15% CC (Little or No Change)	137,558	93	16,865	90	151,018	93	305,440	93
+16 to +40% CC	1,688	1	163	1	5,227	3	7,078	2
+41 to +100% CC	66		12		304		382	
Non-Vegetation Change	3				3		6	
Total	147,136	100	18,665	100	162,011	100	327,812	100
Subalpine Conifer								
+15 to -15% CC (Little or No Change)	346	100	57	100			403	100
+16 to +40% CC	1						1	
Total	346	100	57	100			404	100
White Fir								
-71 to -100% CC	58	1			12		70	
-41 to -70% CC	262	3	7		23	1	292	2
-16 to -40% CC	388	4	19	1	99	3	506	3
+15 to -15% CC (Little or No Change)	8,770	92	1,650	98	3,523	96	13,943	94
+16 to +40% CC	35				2		37	
Total	9,513	100	1,677	100	3,659	100	14,849	100
All Conifer	436,954		194,676		386,338		1,017,968	

Table C-12 Acres of Classified Change in Lassen County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
-71 to -100% CC								
-41 to -70% CC					1		1	
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	1,367	99	1,009	100	427	99	2,804	99
+16 to +40% CC	19	1			3	1	22	1
Total	1,386	100	1,009	100	432	100	2,828	100
Montane Hardwood								
+15 to -15% CC (Little or No Change)	63	96	910	98	2,741	97	3,714	97
+16 to +40% CC	3	4	15	2	98	3	116	3
Total	66	100	925	100	2,840	100	3,831	100
Montane Riparian								
+15 to -15% CC (Little or No Change)			2,272	98	3,674	96	5,946	97
+16 to +40% CC					16		16	
Non-Vegetation Change			41	2	156	4	198	3
Total			2,313	100	3,847	100	6,160	100
All Hardwood	1,452		4,248		7,119		12,819	

Table C-13 Acres of Classified Change in Lassen County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Alkali Scrub								
+15 to -15% CC (Little or No Change)			9,842	69	14,879	89	24,721	80
Non-Vegetation Change			4,359	31	1,860	11	6,219	20
Total			14,201	100	16,739	100	30,940	100
Alpine Dwarf Shrub								
+15 to -15% CC (Little or No Change)	2,679	100	116	100	21	100	2,816	100
Total	2,679	100	116	100	21	100	2,816	100
Low Sagebrush								
+15 to -15% CC (Little or No Change)			16,669	98	4,193	99	20,862	99
Non-Vegetation Change			25		28	1	53	
Cloud or Cloud Shadow			254	1	5		259	1
Total			16,949	100	4,226	100	21,175	100
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	207	100	18,169	100	12,462	98	30,838	99
Shrub/Grass Decrease > 15%			9		55		64	
Shrub/Grass Increase > 15%			12		37		50	
Non-Vegetation Change			5		107	1	112	
Total	207	100	18,195	100	12,661	100	31,063	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	17,454	93	4,319	99	17,615	93	39,387	94
Shrub/Grass Decrease > 15%	197	1	4		517	3	718	2
Shrub/Grass Increase > 15%	1,041	6	46	1	740	4	1,827	4
Non-Vegetation Change	9		4		17		31	
Total	18,701	100	4,374	100	18,888	100	41,963	100
Sagebrush								
+15 to -15% CC (Little or No Change)	103,876	99	830,739	100	434,060	99	1,368,675	99
Shrub/Grass Decrease > 15%	57		536		504		1,097	
Shrub/Grass Increase > 15%	707	1	203		1,112		2,023	
Non-Vegetation Change	689	1	891		4,404	1	5,984	
Cloud or Cloud Shadow			2,149		158		2,307	
Total	105,330	100	834,517	100	440,238	100	1,380,085	100
All Shrub/Chaparral	126,917		888,351		492,773		1,508,041	

Table C-14 Acres of Verified Change in Lassen County by Cause and Conifer Cover Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Eastside Pine							
-71 to -100% CC	41	429		2	7	16	495
-41 to -70% CC	185	775		3	7	117	1,087
-16 to -40% CC	375	4,984	8	97	73	1,270	6,806
+16 to +40% CC			5,897			1,798	7,696
+41 to +100% CC			127			7	134
Total	601	6,188	6,031	101	88	3,208	16,217
Jeffrey Pine							
-41 to -70% CC						1	1
-16 to -40% CC						34	34
Total						34	34
Juniper							
-71 to -100% CC						1	1
-41 to -70% CC						9	9
-16 to -40% CC	136	4				91	231
+16 to +40% CC			19			122	141
Total	136	4	19			223	383
Lodgepole Pine							
-71 to -100% CC		19				1	20
-41 to -70% CC		5				8	13
-16 to -40% CC		28				60	88
+16 to +40% CC			18			281	298
+41 to +100% CC			1			9	10
Total		51	19			360	430
Red Fir							
-71 to -100% CC	12	59			2		74
-41 to -70% CC	89	97			43	2	232
-16 to -40% CC	106	378			25	52	561
+16 to +40% CC			359			61	420
+41 to +100% CC			6			2	8
Total	207	534	364		70	118	1,295
Sierran Mixed Conifer							
-71 to -100% CC	700	1,033		6	4	33	1,776
-41 to -70% CC	688	1,876		13	2	185	2,764
-16 to -40% CC	606	7,428		175	18	2,138	10,365
+16 to +40% CC			4,845			2,233	7,078
+41 to +100% CC			367			14	382
Total	1,994	10,336	5,212	193	25	4,603	22,365
Subalpine Conifer							
+16 to +40% CC			1				1
Total			1				1
White Fir							
-71 to -100% CC		69				1	70

Table C-14 Acres of Verified Change in Lassen County by Cause and Conifer Cover Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
-41 to -70% CC	16	273				2	292
-16 to -40% CC	18	454				34	506
+16 to +40% CC			26			11	37
Total	34	797	26			48	906
All Conifer	2,973	17,910	11,673	294	184	8,595	41,630

Table C-15 Acres of Verified Change in Lassen County by Cause and Hardwood Cover Type

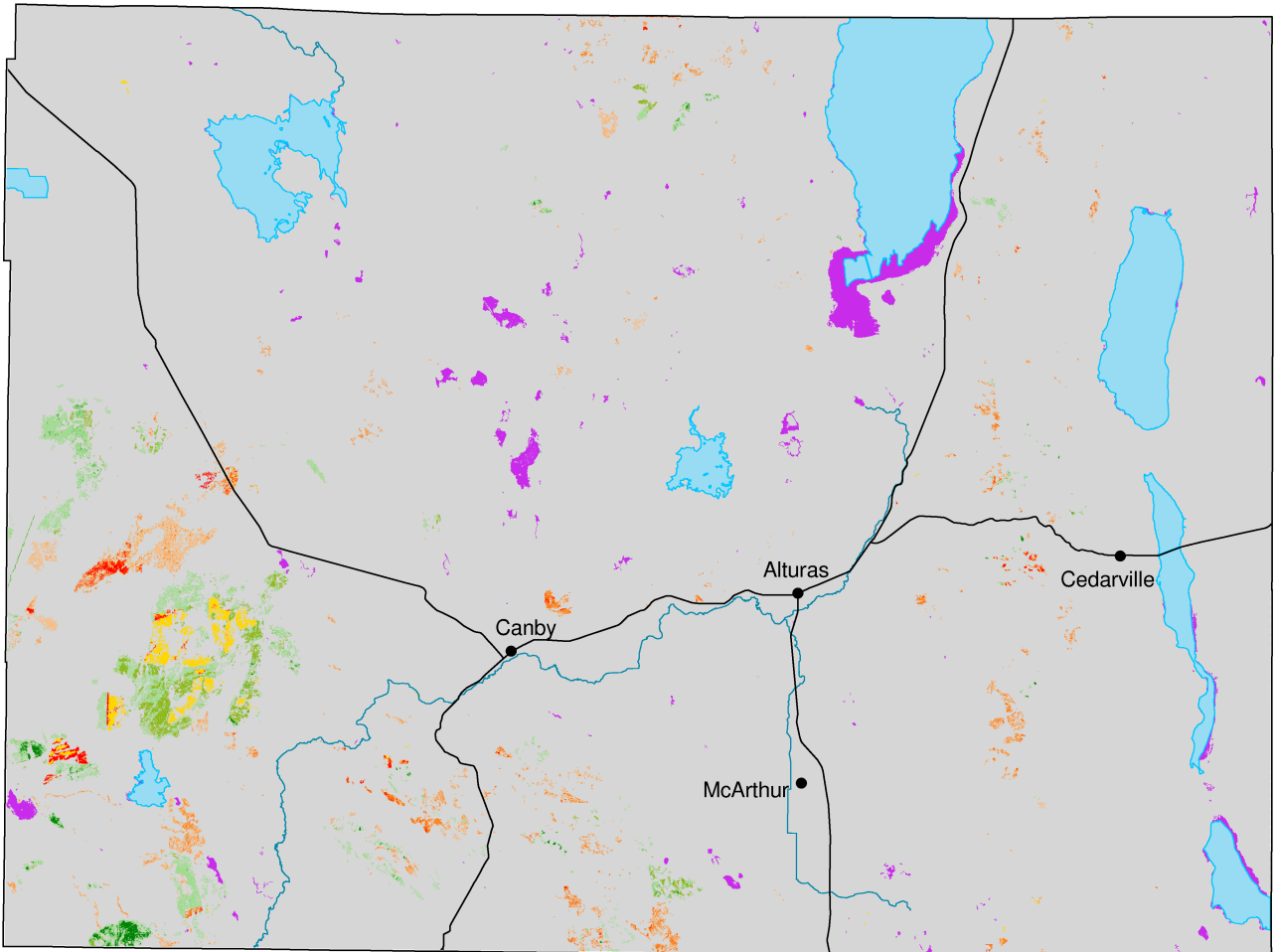
	Regrowth	Unverified Cause	All Causes
Aspen			
-71 to -100% CC			
-41 to -70% CC		1	1
-16 to -40% CC			
+16 to +40% CC	6	16	22
Total	6	18	24
Montane Hardwood			
+16 to +40% CC	38	78	116
Total	38	78	116
Montane Riparian			
+16 to +40% CC		16	16
Total		16	16
All Hardwood	45	112	157

Table C-16 Acres of Verified Change in Lassen County by Cause and Shrub/Chaparral Cover Type











	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Mixed Chaparral							
Shrub/Grass Decrease > 15%						64	64
Shrub/Grass Increase > 15%						50	50
Total						113	113
Montane Chaparral							
Shrub/Grass Decrease > 15%	368	292		13		46	718
Shrub/Grass Increase > 15%			1,506			321	1,827
Total	368	292	1,506	13		367	2,545
Sagebrush							
Shrub/Grass Decrease > 15%	493	129			2	473	1,097
Shrub/Grass Increase > 15%			685			1,338	2,023
Total	493	129	685		2	1,811	3,120
All Shrub/Chaparral	861	421	2,190	13	2	2,291	5,778

Modoc County

Land Cover Change, 1994 – 1999



Degree of Change

-  71% to 100% Cover Decrease
-  41% to 70% Cover Decrease
-  16% to 40% Cover Decrease
-  Little or No Change
-  16% to 40% Cover Increase
-  41% to 100% Cover Increase
-  Shrub/Grass Decrease > 15%
-  Shrub/Grass Increase > 15%
-  Non-vegetation Change
-  Cloud/Shadow/Smoke

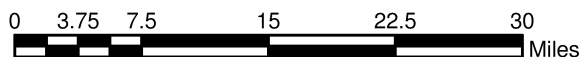
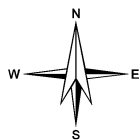


Table C-17 Acres of Classified Change in Modoc County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	902										902	
-41 to -70% CC	5,059	1									5,059	
-16 to -40% CC	8,929	1									8,929	1
+15 to -15% CC (Little or No Change)	658,759	96	5,337	100	627,257	100	18,321	99	34,062	82	1,343,735	97
+16 to +40% CC	9,698	1	9								9,707	1
+41 to +100% CC	506										506	
Shrub/Grass Decrease > 15%					426						426	
Shrub/Grass Increase > 15%					858						858	
Non-Vegetation Change	1				1,042		228	1	7,553	18	8,824	1
Total	683,854	100	5,347	100	629,584	100	18,549	100	41,614	100	1,378,948	100
	Other Public											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	9										9	
-41 to -70% CC	133										133	
-16 to -40% CC	87										87	
+15 to -15% CC (Little or No Change)	55,370	100	613	100	214,986	100	7,918	98	67,253	90	346,140	98
+16 to +40% CC	18										18	
+41 to +100% CC	4										4	
Shrub/Grass Decrease > 15%					14						14	
Shrub/Grass Increase > 15%					8						8	
Non-Vegetation Change					267		179	2	7,702	10	8,147	2
Total	55,620	100	613	100	215,275	100	8,097	100	74,955	100	354,560	100
	Private											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	1,627	1									1,627	
-41 to -70% CC	4,457	2									4,457	
-16 to -40% CC	5,377	2	1								5,378	1
+15 to -15% CC (Little or No Change)	249,918	91	1,718	100	253,484	94	61,023	97	224,539	65	790,681	83
+16 to +40% CC	11,279	4									11,279	1
+41 to +100% CC	1,774	1									1,774	
Shrub/Grass Decrease > 15%					5,511	2	32				5,543	1
Shrub/Grass Increase > 15%					6,683	2					6,683	1
Non-Vegetation Change	55		1		3,274	1	1,651	3	119,840	35	124,820	13
Total	274,487	100	1,719	100	268,953	100	62,705	100	344,378	100	952,242	100

Table C-17 Acres of Classified Change in Modoc County by Lifeform and Owner Class (cont.)

	All Owners											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		All Owners Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2,538										2,538	
-41 to -70% CC	9,649	1									9,649	
-16 to -40% CC	14,393	1	1								14,394	1
+15 to -15% CC (Little or No Change)	964,046	95	7,668	100	1,095,728	98	87,261	98	325,854	71	2,480,557	92
+16 to +40% CC	20,995	2	9								21,005	1
+41 to +100% CC	2,284										2,284	
Shrub/Grass Decrease > 15%					5,951	1	32				5,983	
Shrub/Grass Increase > 15%					7,550	1					7,550	
Non-Vegetation Change	56		1		4,583		2,058	2	135,094	29	141,791	5
Total	1,013,961	100	7,679	100	1,113,812	100	89,351	100	460,947	100	2,685,750	100

Table C-18 Acres of Verified Change in Modoc County by Cause and Lifeform

	Fire	Harvest	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Conifer							
-71 to -100% CC	1,826	522			110	80	2,538
-41 to -70% CC	2,892	5,107	1	43	826	781	9,649
-16 to -40% CC	6,711	5,675	4	117	392	1,493	14,393
+16 to +40% CC	58		17,020		158	3,759	20,995
+41 to +100% CC	9		2,154		32	89	2,284
Total	11,496	11,304	19,179	160	1,517	6,202	49,858
Hardwood							
-71 to -100% CC							
-16 to -40% CC						1	1
+16 to +40% CC			9				9
Total			9			1	11
Shrub/Chaparral							
Shrub/Grass Decrease > 15%	5,481	100	3		79	289	5,951
Shrub/Grass Increase > 15%	3		7,178		80	288	7,550
Total	5,484	100	7,181		159	577	13,501
Grass/Forb							
Shrub/Grass Decrease > 15%						32	32
Total						32	32
All Lifeforms	16,980	11,405	26,370	160	1,676	6,812	63,402

Table C-19 Acres of Classified Change in Modoc County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Eastside Pine								
-71 to -100% CC	561				1,481	1	2,042	
-41 to -70% CC	1,798	1	3		2,389	2	4,190	1
-16 to -40% CC	3,165	1	1		3,551	3	6,717	2
+15 to -15% CC (Little or No Change)	267,077	95	3,686	100	116,033	88	386,796	93
+16 to +40% CC	8,216	3	3		8,154	6	16,372	4
+41 to +100% CC	292				588		880	
Non-Vegetation Change	1				22		24	
Total	281,110	100	3,692	100	132,218	100	417,020	100
Juniper								
-71 to -100% CC	28		3		73		105	
-41 to -70% CC	548		95		697	1	1,340	
-16 to -40% CC	3,001	1	58		336		3,395	1
+15 to -15% CC (Little or No Change)	260,693	99	49,880	100	85,277	99	395,850	99
+16 to +40% CC	77		1		119		197	
+41 to +100% CC	17				4		22	
Non-Vegetation Change					33		33	
Total	264,365	100	50,036	100	86,540	100	400,941	100
Lodgepole Pine								
-41 to -70% CC	1						1	
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	9,420	100			327	100	9,747	100
+16 to +40% CC	8						8	
+41 to +100% CC	2						2	
Total	9,430	100			327	100	9,758	100
Sierran Mixed Conifer								
-71 to -100% CC	190		5		54		249	
-41 to -70% CC	2,272	3	32	2	1,028	2	3,331	2
-16 to -40% CC	2,379	3	22	1	1,212	2	3,613	3
+15 to -15% CC (Little or No Change)	78,926	93	1,456	95	45,803	88	126,185	91
+16 to +40% CC	1,120	1	15	1	2,976	6	4,111	3
+41 to +100% CC	110		4		1,174	2	1,289	1
Total	84,998	100	1,534	100	52,247	100	138,779	100
Subalpine Conifer								
+15 to -15% CC (Little or No Change)	4,834	100					4,834	100
Total	4,834	100					4,834	100

Table C-19 Acres of Classified Change in Modoc County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
White Fir								
-71 to -100% CC	122				19	1	142	
-41 to -70% CC	440	1	4	1	343	11	787	2
-16 to -40% CC	383	1	6	2	279	9	668	2
+15 to -15% CC (Little or No Change)	37,808	97	348	97	2,477	79	40,634	95
+16 to +40% CC	278	1			30	1	307	1
+41 to +100% CC	85				7		92	
Total	39,116	100	358	100	3,155	100	42,629	100
All Conifer	683,854		55,620		274,487		1,013,961	

Table C-20 Acres of Classified Change in Modoc County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
-71 to -100% CC								
-16 to -40% CC								
+15 to -15% CC (Little or No Change)	4,465	100	20	100	134	100	4,618	100
Total	4,465	100	20	100	134	100	4,619	100
Montane Hardwood								
+15 to -15% CC (Little or No Change)	624	99	53	100	447	100	1,124	99
+16 to +40% CC	9	1					9	1
Total	633	100	53	100	447	100	1,133	100
Montane Riparian								
-16 to -40% CC					1		1	
+15 to -15% CC (Little or No Change)	249	100	540	100	1,137	100	1,926	100
+16 to +40% CC								
Non-Vegetation Change					1		1	
Total	249	100	540	100	1,139	100	1,927	100
All Hardwood	5,347		613		1,719		7,679	

Table C-21 Acres of Classified Change in Modoc County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Alkali Scrub								
+15 to -15% CC (Little or No Change)	3	100	47,493	100	29,474	99	76,970	99
Shrub/Grass Decrease > 15%					3		3	
Non-Vegetation Change			77		343	1	421	1
Total	3	100	47,570	100	29,820	100	77,393	100
Alpine Dwarf Shrub								
+15 to -15% CC (Little or No Change)	13,015	100			34	100	13,048	100
Total	13,015	100			34	100	13,048	100
Bitterbrush								
+15 to -15% CC (Little or No Change)	64,518	99	639	100	5,625	86	70,782	98
Shrub/Grass Decrease > 15%	109				634	10	743	1
Shrub/Grass Increase > 15%	359	1			299	5	657	1
Non-Vegetation Change	2				4		6	
Total	64,987	100	639	100	6,562	100	72,188	100
Low Sagebrush								
+15 to -15% CC (Little or No Change)	143,534	99	10,407	99	12,324	100	166,264	99
Shrub/Grass Decrease > 15%	1						1	
Shrub/Grass Increase > 15%			4		10		14	
Non-Vegetation Change	874	1	105	1	36		1,015	1
Total	144,409	100	10,516	100	12,370	100	167,295	100
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	63	100	81	100	420	100	564	100
Shrub/Grass Increase > 15%								
Total	63	100	81	100	420	100	565	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	35,334	99	69	100	28,985	76	64,387	87
Shrub/Grass Decrease > 15%	151				4,334	11	4,485	6
Shrub/Grass Increase > 15%	333	1			4,709	12	5,042	7
Non-Vegetation Change					7		7	
Total	35,818	100	69	100	38,034	100	73,921	100
Sagebrush								
+15 to -15% CC (Little or No Change)	370,791	100	156,298	100	176,623	97	703,712	99
Shrub/Grass Decrease > 15%	165		14		540		720	
Shrub/Grass Increase > 15%	167		4		1,665	1	1,836	
Non-Vegetation Change	166		84		2,884	2	3,134	
Total	371,289	100	156,401	100	181,713	100	709,402	100
All Shrub/Chaparral	629,584		215,275		268,953		1,113,812	

Table C-22 Acres of Verified Change in Modoc County by Cause and Conifer Cover Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Eastside Pine							
-71 to -100% CC	1,800	136			48	57	2,042
-41 to -70% CC	2,389	1,149	1	22	90	539	4,190
-16 to -40% CC	3,767	1,804	4	51	65	1,025	6,717
+16 to +40% CC	4		13,993		128	2,248	16,372
+41 to +100% CC			798		18	64	880
Total	7,960	3,089	14,796	73	350	3,933	30,201
Juniper							
-71 to -100% CC	26	5			61	13	105
-41 to -70% CC	455	58			735	91	1,340
-16 to -40% CC	2,853	34			327	180	3,395
+16 to +40% CC			92		3	102	197
+41 to +100% CC			6			16	22
Total	3,334	98	98		1,127	402	5,058
Lodgepole Pine							
-41 to -70% CC	1						1
-16 to -40% CC							
+16 to +40% CC			4			3	8
+41 to +100% CC						2	2
Total	1		4			5	10
Sierran Mixed Conifer							
-71 to -100% CC		242				7	249
-41 to -70% CC	38	3,143		13		138	3,331
-16 to -40% CC	85	3,245		16		267	3,613
+16 to +40% CC	55		2,657		26	1,374	4,111
+41 to +100% CC	9		1,259		14	6	1,289
Total	187	6,629	3,916	29	40	1,792	12,593
White Fir							
-71 to -100% CC		139				2	142
-41 to -70% CC	9	757		8		13	787
-16 to -40% CC	6	591		50		21	668
+16 to +40% CC			274			33	307
+41 to +100% CC			91			1	92
Total	14	1,488	365	58		70	1,995
All Conifer	11,496	11,304	19,179	160	1,517	6,202	49,858

Table C-23 Acres of Verified Change in Modoc County by Cause and Hardwood Cover Type

	Harvest	Regrowth	Unverified Cause	All Causes
Aspen				
-71 to -100% CC				
-16 to -40% CC				
Total	1			1
Montane Hardwood				
+16 to +40% CC		9		9
Total		9		9
Montane Riparian				
-16 to -40% CC			1	1
+16 to +40% CC				
Total			1	1
All Hardwood	1	9	1	11

Table C-24 Acres of Verified Change in Modoc County by Cause and Shrub/Chaparral Cover Type

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Alkali Scrub						
Shrub/Grass Decrease > 15%					3	3
Total					3	3
Bitterbrush						
Shrub/Grass Decrease > 15%	737	3			3	743
Shrub/Grass Increase > 15%			570	24	63	657
Total	737	3	570	24	67	1,400
Low Sagebrush						
Shrub/Grass Decrease > 15%						1
Shrub/Grass Increase > 15%			10		4	14
Total			10		4	15
Mixed Chaparral						
Shrub/Grass Increase > 15%						
Total						
Montane Chaparral						
Shrub/Grass Decrease > 15%	4,248	29	3	31	173	4,485
Shrub/Grass Increase > 15%	3		4,962	11	65	5,042
Total	4,252	29	4,965	42	238	9,526
Sagebrush						
Shrub/Grass Decrease > 15%	495	67		47	110	720
Shrub/Grass Increase > 15%			1,636	45	155	1,836
Total	495	67	1,636	92	265	2,556
All Shrub/Chaparral	5,484	100	7,181	159	577	13,501

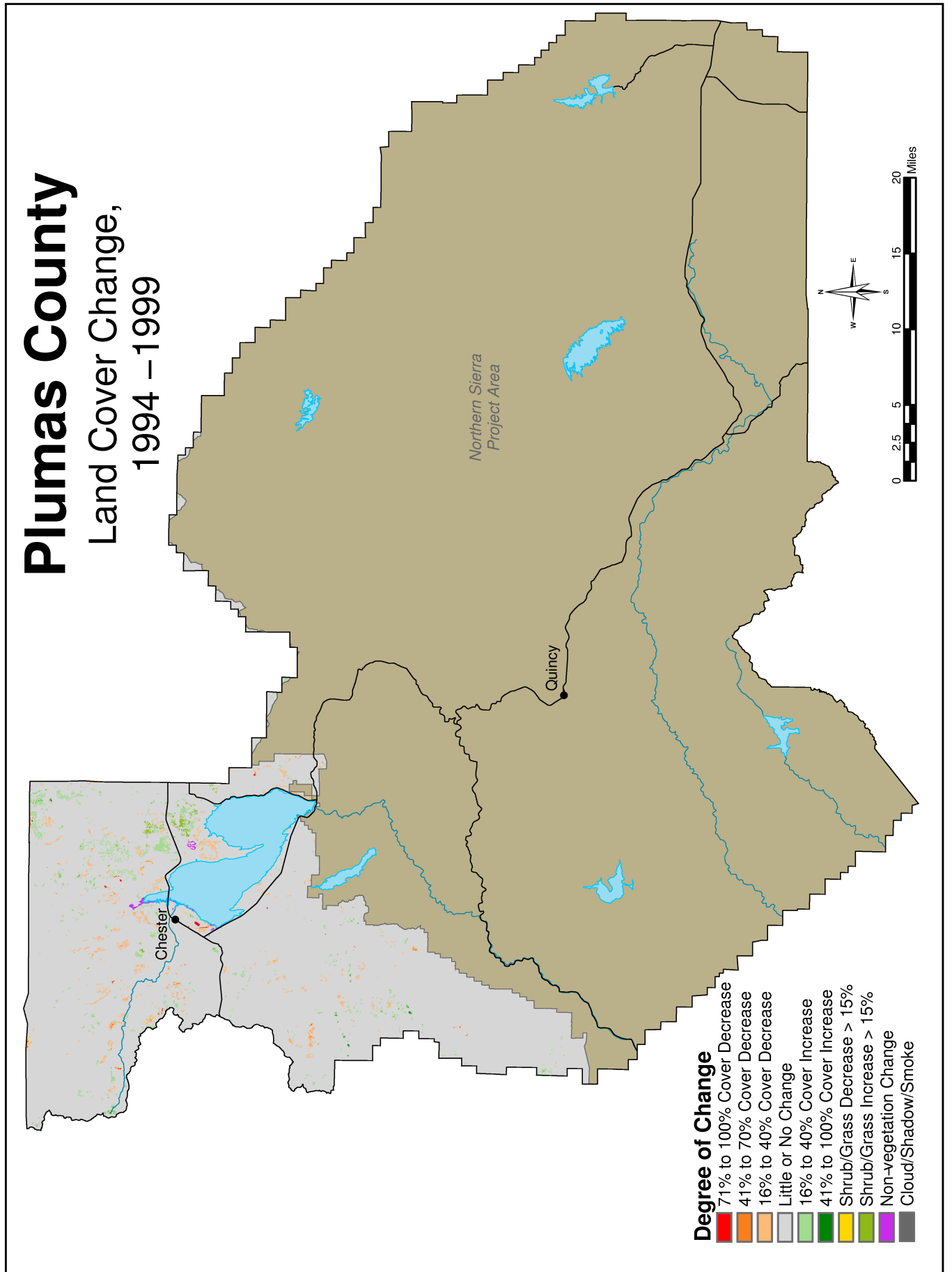


Table C-25 Acres of Classified Change in Plumas County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	62										62	
-41 to -70% CC	175										175	
-16 to -40% CC	2,391	2									2,391	2
+15 to -15% CC (Little or No Change)	129,896	96	1,098	97	9,202	99	563	99	704	99	141,463	96
+16 to +40% CC	2,427	2	30	3							2,457	2
+41 to +100% CC	116										116	
Shrub/Grass Decrease > 15%					13						13	
Shrub/Grass Increase > 15%					49	1	4	1			53	
Non-Vegetation Change					30				4	1	34	
Total	135,068	100	1,128	100	9,294	100	568	100	708	100	146,765	100

	Other Public											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	6										6	
-41 to -70% CC	17										17	
-16 to -40% CC	79	1									79	
+15 to -15% CC (Little or No Change)	13,345	99	348	97	1,429	98	277	98	338	100	15,737	99
+16 to +40% CC	53		12	3							65	
+41 to +100% CC	2										2	
Shrub/Grass Decrease > 15%					22	2					22	
Shrub/Grass Increase > 15%					4		6	2			10	
Total	13,502	100	360	100	1,455	100	283	100	338	100	15,938	100

	Private											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	86										86	
-41 to -70% CC	83										83	
-16 to -40% CC	2,149	2									2,149	1
+15 to -15% CC (Little or No Change)	102,755	96	899	94	7,312	91	5,126	94	25,308	96	141,400	95
+16 to +40% CC	2,397	2	59	6							2,456	2
+41 to +100% CC	17										17	
Shrub/Grass Decrease > 15%					44	1	12				56	
Shrub/Grass Increase > 15%					671	8	11				682	
Non-Vegetation Change	51				51	1	318	6	987	4	1,407	1
Total	107,538	100	958	100	8,078	100	5,467	100	26,295	100	148,336	100

Table C-25 Acres of Classified Change in Plumas County by Lifeform and Owner Class (cont.)

	All Owners											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		All Owners Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	154										154	
-41 to -70% CC	275										275	
-16 to -40% CC	4,619	2									4,619	1
+15 to -15% CC (Little or No Change)	245,996	96	2,345	96	17,943	95	5,966	94	26,350	96	298,600	96
+16 to +40% CC	4,878	2	102	4							4,979	2
+41 to +100% CC	135										135	
Shrub/Grass Decrease > 15%					79		12				91	
Shrub/Grass Increase > 15%					724	4	21				745	
Non-Vegetation Change	51				81		318	5	991	4	1,441	
Total	256,107	100	2,446	100	18,827	100	6,317	100	27,341	100	311,039	100

Table C-26 Acres of Verified Change in Plumas County by Cause and Lifeform

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Conifer								
-71 to -100% CC	6	63	50		3	2	30	154
-41 to -70% CC	12	159	17		13	39	36	275
-16 to -40% CC	129	2,988	464		101	168	769	4,619
+16 to +40% CC				4,020			857	4,878
+41 to +100% CC				120			15	135
Total	147	3,210	531	4,140	116	210	1,708	10,060
Hardwood								
+16 to +40% CC				22			80	102
Total				22			80	102
Shrub/Chaparral								
Shrub/Grass Decrease > 15%	24	33	6				16	79
Shrub/Grass Increase > 15%				614			110	724
Total	24	33	6	614			126	803
Grass/Forb								
Shrub/Grass Decrease > 15%			1				11	12
Shrub/Grass Increase > 15%				2			20	21
Total			1	2			31	33
All Lifeforms	170	3,243	538	4,777	116	210	1,944	10,998

Table C-27 Acres of Classified Change in Plumas County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Douglas Fir								
+15 to -15% CC (Little or No Change)	10	100			26	100	36	100
Total	10	100			26	100	36	100
Eastside Pine								
+15 to -15% CC (Little or No Change)	10	100			53	100	62	100
Total	10	100			53	100	62	100
Jeffrey Pine								
-41 to -70% CC					2	2	2	1
-16 to -40% CC					3	3	3	2
+15 to -15% CC (Little or No Change)			39	100	90	81	130	86
+16 to +40% CC					17	15	17	11
Total			39	100	112	100	151	100
Lodgepole Pine								
-71 to -100% CC	9				1		10	
-41 to -70% CC	19	1			3		22	
-16 to -40% CC	128	4			81	3	209	3
+15 to -15% CC (Little or No Change)	2,640	91	337	100	2,795	93	5,772	93
+16 to +40% CC	95	3			117	4	212	3
+41 to +100% CC	4				3		7	
Non-Vegetation Change								
Total	2,895	100	338	100	3,001	100	6,233	100
Montane Hardwood-Conifer								
+15 to -15% CC (Little or No Change)	193	99	59	94	112	97	365	98
+16 to +40% CC	2	1	4	6	3	3	9	2
Total	196	100	63	100	115	100	374	100
Red Fir								
-71 to -100% CC	3						3	
-41 to -70% CC	31						31	
-16 to -40% CC	183	2					183	1
+15 to -15% CC (Little or No Change)	11,319	95	4,390	100	54	100	15,763	96
+16 to +40% CC	396	3	19				415	3
+41 to +100% CC	8		2				10	
Total	11,940	100	4,411	100	54	100	16,405	100
Sierran Mixed Conifer								
-71 to -100% CC	39		5		66		110	
-41 to -70% CC	113		12		57		182	
-16 to -40% CC	1,764	2	70	1	1,914	2	3,748	2
+15 to -15% CC (Little or No Change)	99,167	96	7,660	99	90,680	96	197,507	96
+16 to +40% CC	1,691	2	24		1,688	2	3,403	2
+41 to +100% CC	91				14		105	
Non-Vegetation Change					51		51	
Total	102,864	100	7,771	100	94,470	100	205,106	100

Table C-27 Acres of Classified Change in Plumas County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Subalpine Conifer								
+15 to -15% CC (Little or No Change)	1	100	28	100			29	100
Total	1	100	28	100			29	100
White Fir								
-71 to -100% CC	11				19		30	
-41 to -70% CC	12		5	1	21		38	
-16 to -40% CC	316	2	9	1	151	2	475	2
+15 to -15% CC (Little or No Change)	16,557	97	832	98	8,945	92	26,334	95
+16 to +40% CC	244	1	5	1	572	6	821	3
+41 to +100% CC	13						13	
Total	17,152	100	851	100	9,708	100	27,711	100
All Conifer	135,068		13,502		107,538		256,107	

Table C-28 Acres of Classified Change in Plumas County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
+15 to -15% CC (Little or No Change)	362	98	51	97	50	87	464	96
+16 to +40% CC	9	2	1	3	8	13	18	4
Total	371	100	52	100	58	100	481	100
Montane Hardwood								
+15 to -15% CC (Little or No Change)	436	99	115	100	335	94	886	97
+16 to +40% CC	4	1			22	6	27	3
Total	441	100	115	100	357	100	913	100
Montane Riparian								
+15 to -15% CC (Little or No Change)	299	95	182	94	514	95	995	95
+16 to +40% CC	17	5	11	6	29	5	57	5
Total	316	100	193	100	543	100	1,052	100
All Hardwood	1,128		360		958		2,446	

Table C-29 Acres of Classified Change in Plumas County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	4	100					4	100
Total	4	100					4	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	9,196	99	1,423	98	6,974	90	17,593	95
Shrub/Grass Decrease > 15%	13		22	2	42	1	77	
Shrub/Grass Increase > 15%	49	1	4		649	8	702	4
Non-Vegetation Change	30				51	1	81	
Total	9,288	100	1,449	100	7,716	100	18,453	100
Sagebrush								
+15 to -15% CC (Little or No Change)	2	100	6	100	337	93	346	94
Shrub/Grass Decrease > 15%					2	1	2	1
Shrub/Grass Increase > 15%					22	6	22	6
Total	2	100	6	100	361	100	370	100
All Shrub/Chaparral	9,294		1,455		8,078		18,827	

Table C-30 Acres of Verified Change in Plumas County by Cause and Conifer Cover Type

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Jeffrey Pine								
-41 to -70% CC							2	2
-16 to -40% CC							3	3
+16 to +40% CC							17	17
Total							22	22
Lodgepole Pine								
-71 to -100% CC		6			2		1	10
-41 to -70% CC		10	2		10		1	22
-16 to -40% CC		111	5		73	4	18	209
+16 to +40% CC				75			138	212
+41 to +100% CC				4			2	7
Total		127	7	79	85	4	160	461
Montane Hardwood-Conifer								
+16 to +40% CC							9	9
Total							9	9
Red Fir								
-71 to -100% CC						2	1	3
-41 to -70% CC		1				29	2	31
-16 to -40% CC		24				127	32	183
+16 to +40% CC				372			43	415
+41 to +100% CC				8			2	10
Total		24		380		158	80	642
Sierran Mixed Conifer								
-71 to -100% CC	5	26	50				28	110
-41 to -70% CC	11	116	15		3	10	26	182
-16 to -40% CC	128	2,457	459		28	37	640	3,748
+16 to +40% CC				2,794			609	3,403
+41 to +100% CC				94			11	105
Total	144	2,599	524	2,888	31	48	1,314	7,548
White Fir								
-71 to -100% CC		30						30
-41 to -70% CC	1	32					6	38
-16 to -40% CC	2	397					76	475
+16 to +40% CC				780			41	821
+41 to +100% CC				13				13
Total	3	459		793			123	1,378
All Conifer	147	3,210	531	4,140	116	210	1,708	10,060

Table C-31 Acres of Verified Change in Plumas County by Cause and Hardwood Cover Type

	Regrowth	Unverified Cause	All Causes
Aspen			
+16 to +40% CC	16	2	18
Total	16	2	18
Montane Hardwood			
+16 to +40% CC	3	24	27
Total	3	24	27
Montane Riparian			
+16 to +40% CC	4	54	57
Total	4	54	57
All Hardwood	22	80	102

Table C-32 Acres of Verified Change in Plumas County by Cause and Shrub/Chaparral Cover Type

	Fire	Harvest	Development	Regrowth	Unverified Cause	All Causes
Montane Chaparral						
Shrub/Grass Decrease > 15%	24	31	6		16	77
Shrub/Grass Increase > 15%				599	103	702
Total	24	31	6	599	119	779
Sagebrush						
Shrub/Grass Decrease > 15%		2				2
Shrub/Grass Increase > 15%				15	7	22
Total		2		15	7	24
All Shrub/Chaparral	24	33	6	614	126	803

Shasta County

Land Cover Change, 1994 – 1999

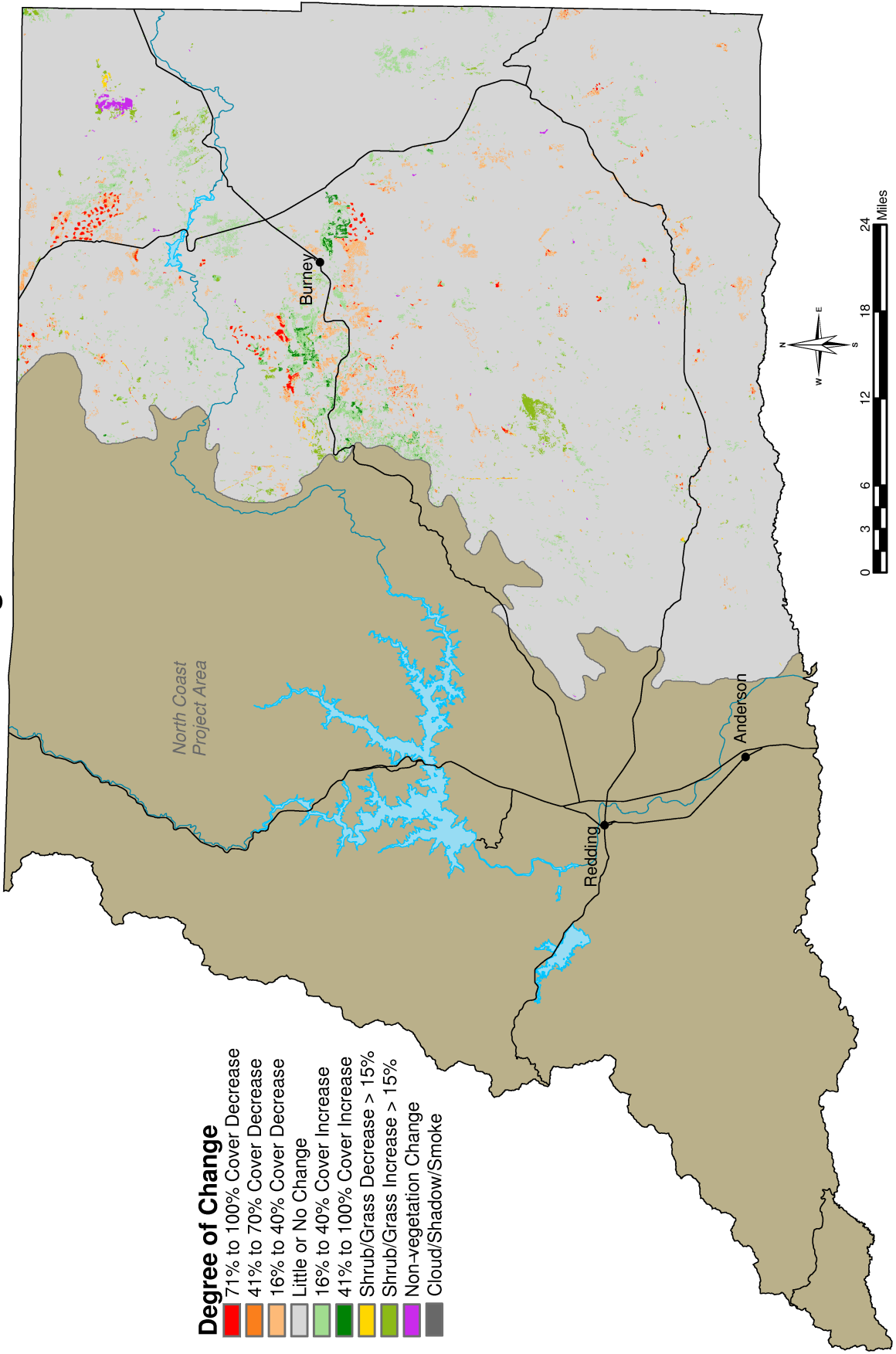


Table C-33 Acres of Classified Change in Shasta County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	187											187
-41 to -70% CC	249		11									260
-16 to -40% CC	3,146	1	6									3,152
+15 to -15% CC (Little or No Change)	213,018	97	14,810	95	70,940	99	837	99	12,743	100		312,348
+16 to +40% CC	3,802	2	683	4								4,485
+41 to +100% CC	150		1									151
Shrub/Grass Decrease > 15%					62							62
Shrub/Grass Increase > 15%					1,008	1						1,008
Non-Vegetation Change	1				4		11	1	36			51
Total	220,552	100	15,512	100	72,014	100	848	100	12,778	100		321,704

	Other Public											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	43											43
-41 to -70% CC	97											97
-16 to -40% CC	295											295
+15 to -15% CC (Little or No Change)	75,445	99	5,956	97	46,970	99	1,172	99	8,937	98		138,480
+16 to +40% CC	164		182	3								346
+41 to +100% CC	8											8
Shrub/Grass Decrease > 15%					8							8
Shrub/Grass Increase > 15%					363	1	13	1				376
Non-Vegetation Change					71		2		190	2		263
Total	76,052	100	6,138	100	47,412	100	1,188	100	9,126	100		139,916

	Private											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2,419	1	11									2,430
-41 to -70% CC	1,760		107									1,867
-16 to -40% CC	14,245	4	106									14,351
+15 to -15% CC (Little or No Change)	366,744	92	134,441	98	77,521	90	53,942	100	45,668	100		678,317
+16 to +40% CC	13,287	3	2,094	2								15,382
+41 to +100% CC	1,702											1,703
Shrub/Grass Decrease > 15%					1,024	1	14					1,039
Shrub/Grass Increase > 15%					6,826	8	25					6,851
Non-Vegetation Change	3		14		588	1	191		49			845
Total	400,162	100	136,774	100	85,960	100	54,172	100	45,717	100		722,784

Table C-33 Acres of Classified Change in Shasta County by Lifeform and Owner Class (cont.)

	All Owners											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		All Owners Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	2,649		11								2,659	
-41 to -70% CC	2,106		118								2,225	
-16 to -40% CC	17,686	3	112								17,798	2
+15 to -15% CC (Little or No Change)	655,207	94	155,207	98	195,431	95	55,951	100	67,347	100	1,129,144	95
+16 to +40% CC	17,253	2	2,959	2							20,213	2
+41 to +100% CC	1,860		2								1,861	
Shrub/Grass Decrease > 15%					1,095	1	14				1,109	
Shrub/Grass Increase > 15%					8,197	4	39				8,236	1
Non-Vegetation Change	4		14		663		204		275		1,159	
Total	696,765	100	158,424	100	205,385	100	56,209	100	67,622	100	1,184,404	100

Table C-34 Acres of Verified Change in Shasta County by Cause and Lifeform

	Fire	Harvest	Develop- ment	Regrowth	Other	Unverified Cause	All Causes
Conifer							
-71 to -100% CC	8	1,976	2		226	437	2,649
-41 to -70% CC	30	1,112	5		155	804	2,106
-16 to -40% CC	93	9,760	12		408	7,412	17,686
+16 to +40% CC		2		11,015	67	6,170	17,253
+41 to +100% CC				1,772	2	86	1,860
Total	131	12,850	19	12,787	857	14,909	41,554
Hardwood							
-71 to -100% CC					7	3	11
-41 to -70% CC	3	11			32	72	118
-16 to -40% CC	4	4			14	90	112
+16 to +40% CC				317	27	2,616	2,959
+41 to +100% CC				2			2
Total	7	16		318	81	2,781	3,203
Shrub/Chaparral							
Shrub/Grass Decrease > 15%	86	213			189	607	1,095
Shrub/Grass Increase > 15%		1		5,471	47	2,678	8,197
Total	86	213		5,471	236	3,285	9,291
Grass/Forb							
Shrub/Grass Decrease > 15%	4					11	14
Shrub/Grass Increase > 15%						39	39
Total	4					49	53
All Lifeforms	227	13,080	19	18,577	1,173	21,025	54,101

Table C-35 Acres of Classified Change in Shasta County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Douglas Fir								
-71 to -100% CC					4		4	
-41 to -70% CC					15		15	
-16 to -40% CC					99	3	99	2
+15 to -15% CC (Little or No Change)	1,804	99	87	100	3,646	95	5,536	96
+16 to +40% CC	21	1			83	2	104	2
+41 to +100% CC	1				8		9	
Total	1,826	100	87	100	3,854	100	5,767	100
Eastside Pine								
-71 to -100% CC	9				2		11	
-41 to -70% CC	23				12		35	
-16 to -40% CC	117		2		26		145	
+15 to -15% CC (Little or No Change)	33,061	97	5,687	99	9,696	96	48,444	97
+16 to +40% CC	788	2	27		351	3	1,166	2
+41 to +100% CC	1				1		2	
Non-Vegetation Change								
Total	33,999	100	5,716	100	10,087	100	49,802	100
Juniper								
+15 to -15% CC (Little or No Change)	4,783	100	5,949	100	1,193	100	11,926	100
+16 to +40% CC	6						6	
Total	4,789	100	5,949	100	1,193	100	11,932	100
Lodgepole Pine								
-71 to -100% CC								
-41 to -70% CC	2				1		3	
-16 to -40% CC	59	2			25	1	84	1
+15 to -15% CC (Little or No Change)	2,842	97	1,571	99	2,171	97	6,585	98
+16 to +40% CC	14		12	1	45	2	72	1
+41 to +100% CC			3		1		4	
Non-Vegetation Change	1						1	
Total	2,918	100	1,586	100	2,244	100	6,748	100
Montane Hardwood-Conifer								
-71 to -100% CC					17		17	
-41 to -70% CC	2				65	1	68	
-16 to -40% CC	1		1		7		9	
+15 to -15% CC (Little or No Change)	3,196	97	976	99	9,856	90	14,028	92
+16 to +40% CC	53	2	5		585	5	642	4
+41 to +100% CC	30	1			420	4	450	3
Total	3,283	100	981	100	10,950	100	15,214	100

Table C-35 Acres of Classified Change in Shasta County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Ponderosa Pine								
-71 to -100% CC					51		51	
-41 to -70% CC					83		83	
-16 to -40% CC	1				586	1	587	1
+15 to -15% CC (Little or No Change)	2,250	99	1,048	99	51,971	95	55,269	95
+16 to +40% CC	32	1	13	1	1,948	4	1,994	3
+41 to +100% CC					94		95	
Total	2,284	100	1,061	100	54,733	100	58,078	100
Red Fir								
-71 to -100% CC	9		1		1	3	10	
-41 to -70% CC	7		10			1	17	
-16 to -40% CC	74	1	25		1	3	99	
+15 to -15% CC (Little or No Change)	7,546	99	22,962	100	24	94	30,532	99
+16 to +40% CC	14		30				43	
+41 to +100% CC			4				4	
Total	7,649	100	23,032	100	26	100	30,707	100
Sierran Mixed Conifer								
-71 to -100% CC	130		29		2,268	1	2,426	1
-41 to -70% CC	150		58		1,466		1,673	
-16 to -40% CC	1,904	1	239	1	12,959	4	15,102	3
+15 to -15% CC (Little or No Change)	137,609	96	31,546	99	279,380	91	448,535	93
+16 to +40% CC	2,743	2	72		10,139	3	12,954	3
+41 to +100% CC	103		1		1,175		1,279	
Non-Vegetation Change					3		3	
Total	142,640	100	31,944	100	307,389	100	481,972	100
Subalpine Conifer								
+15 to -15% CC (Little or No Change)	465	100	2,134	100	22	100	2,621	100
+16 to +40% CC			1				1	
Total	465	100	2,136	100	22	100	2,623	100
White Fir								
-71 to -100% CC	39		13		77	1	128	
-41 to -70% CC	65		29	1	118	1	213	1
-16 to -40% CC	989	5	28	1	543	6	1,560	5
+15 to -15% CC (Little or No Change)	19,462	94	3,485	98	8,785	91	31,732	94
+16 to +40% CC	131	1	4		137	1	271	1
+41 to +100% CC	14				3		17	
Total	20,699	100	3,559	100	9,663	100	33,921	100
All Conifer	220,552		76,052		400,162		696,765	

Table C-36 Acres of Classified Change in Shasta County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
+15 to -15% CC (Little or No Change)	48	89	129	82	29	98	206	86
+16 to +40% CC	6	11	28	18		2	34	14
Total	54	100	157	100	30	100	240	100
Blue Oak Woodland								
-71 to -100% CC					3		3	
-41 to -70% CC					32		32	
-16 to -40% CC					52		52	
+15 to -15% CC (Little or No Change)	15	94	1,803	99	90,609	99	92,426	99
+16 to +40% CC	1	6	10	1	849	1	860	1
+41 to +100% CC								
Non-Vegetation Change					13		13	
Total	16	100	1,813	100	91,558	100	93,387	100
Blue Oak-Foothill Pine								
-71 to -100% CC								
-41 to -70% CC					21		21	
-16 to -40% CC					27		27	
+15 to -15% CC (Little or No Change)	1,275	98	134	100	10,878	99	12,286	99
+16 to +40% CC	20	2			46		67	1
+41 to +100% CC	1						1	
Non-Vegetation Change					1		1	
Total	1,296	100	134	100	10,973	100	12,403	100
Montane Hardwood								
-71 to -100% CC					7		7	
-41 to -70% CC	10				51		61	
-16 to -40% CC	5				27		32	
+15 to -15% CC (Little or No Change)	13,356	95	3,824	96	31,615	96	48,795	96
+16 to +40% CC	653	5	143	4	1,178	4	1,975	4
+41 to +100% CC								
Total	14,024	100	3,968	100	32,879	100	50,870	100
Montane Riparian								
-71 to -100% CC								
-41 to -70% CC	1	1			3		4	
-16 to -40% CC	1	1			1		2	
+15 to -15% CC (Little or No Change)	116	95	26	100	872	97	1,014	97
+16 to +40% CC	3	3			20	2	24	2
Total	122	100	26	100	897	100	1,044	100
Valley Oak Woodland								
+15 to -15% CC (Little or No Change)			41	100	437	100	479	100
Total			41	100	437	100	479	100
All Hardwood	15,512		6,138		136,774		158,424	

Table C-37 Acres of Classified Change in Shasta County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	3,872	99	18,757	99	40,983	90	63,613	93
Shrub/Grass Decrease > 15%			3		528	1	531	1
Shrub/Grass Increase > 15%	21	1	201	1	3,538	8	3,760	5
Non-Vegetation Change			71		566	1	637	1
Total	3,893	100	19,033	100	45,615	100	68,541	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	55,844	98	14,720	99	34,141	90	104,705	96
Shrub/Grass Decrease > 15%	62		5		494	1	561	1
Shrub/Grass Increase > 15%	885	2	159	1	3,282	9	4,326	4
Non-Vegetation Change	4				22		26	
Total	56,794	100	14,885	100	37,939	100	109,618	100
Sagebrush								
+15 to -15% CC (Little or No Change)	11,224	99	13,492	100	2,397	100	27,113	100
Shrub/Grass Decrease > 15%					2		2	
Shrub/Grass Increase > 15%	102	1	2		6		111	
Total	11,326	100	13,494	100	2,405	100	27,226	100
All Shrub/Chaparral	72,014		47,412		85,960		205,385	

Table C-38 Acres of Verified Change in Shasta County by Cause and Conifer Cover Type

	Fire	Harvest	Develop- ment	Regrowth	Other	Unverified Cause	All Causes
Douglas Fir							
-71 to -100% CC		3			1		4
-41 to -70% CC		9				6	15
-16 to -40% CC		38			4	57	99
+16 to +40% CC				83	1	20	104
+41 to +100% CC				9			9
Total		49		91	7	84	231
Eastside Pine							
-71 to -100% CC		9				2	11
-41 to -70% CC		21			1	13	35
-16 to -40% CC		104			1	39	145
+16 to +40% CC				642		524	1,166
+41 to +100% CC				1		1	2
Total		134		643	2	580	1,358
Juniper							
+16 to +40% CC				6			6
Total				6			6
Lodgepole Pine							
-71 to -100% CC							
-41 to -70% CC		1				2	3
-16 to -40% CC		31				53	84
+16 to +40% CC				8		64	72
+41 to +100% CC						4	4
Total		32		8		123	163
Montane Hardwood-Conifer							
-71 to -100% CC		15				2	17
-41 to -70% CC		17				51	68
-16 to -40% CC		4				5	9
+16 to +40% CC				482	2	158	642
+41 to +100% CC				450			450
Total		36		932	2	216	1,186
Ponderosa Pine							
-71 to -100% CC	4	11	2		20	15	51
-41 to -70% CC	2	17	5		24	35	83
-16 to -40% CC	5	98	12		51	422	587
+16 to +40% CC				1,381	30	582	1,994
+41 to +100% CC				84		10	95
Total	11	125	19	1,465	125	1,064	2,810
Red Fir							
-71 to -100% CC	1	9				1	10
-41 to -70% CC	10	6				2	17
-16 to -40% CC	22	58				19	99
+16 to +40% CC				7		37	43
+41 to +100% CC						4	4
Total	33	73		7		62	175

Table C-38 Acres of Verified Change in Shasta County by Cause and Conifer Cover Type (cont.)

	Fire	Harvest	Develop- ment	Regrowth	Other	Unverified Cause	All Causes
Sierran Mixed Conifer							
-71 to -100% CC	3	1,860			200	363	2,426
-41 to -70% CC	19	923			116	616	1,673
-16 to -40% CC	65	8,333			321	6,382	15,102
+16 to +40% CC		2		8,302	33	4,617	12,954
+41 to +100% CC				1,214	1	63	1,279
Total	87	11,119		9,517	671	12,040	33,434
Subalpine Conifer							
+16 to +40% CC						1	1
Total						1	1
White Fir							
-71 to -100% CC		70			5	53	128
-41 to -70% CC		118			14	81	213
-16 to -40% CC		1,094			30	436	1,560
+16 to +40% CC				105		166	271
+41 to +100% CC				14		3	17
Total		1,282		119	50	738	2,189
All Conifer	131	12,850	19	12,787	857	14,909	41,554

Table C-39 Acres of Verified Change in Shasta County by Cause and Hardwood Cover Type

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Aspen						
+16 to +40% CC					34	34
Total					34	34
Blue Oak Woodland						
-71 to -100% CC				3		3
-41 to -70% CC				4	28	32
-16 to -40% CC				1	51	52
+16 to +40% CC			147		713	860
+41 to +100% CC						
Total			147	8	792	947
Blue Oak-Foothill Pine						
-71 to -100% CC						
-41 to -70% CC					21	21
-16 to -40% CC					27	27
+16 to +40% CC			12	2	53	67
+41 to +100% CC			1			1
Total			13	2	101	116
Montane Hardwood						
-71 to -100% CC				4	3	7
-41 to -70% CC	3	10		26	23	61
-16 to -40% CC	4	3		13	12	32
+16 to +40% CC			157	24	1,794	1,975
+41 to +100% CC						
Total	7	13	157	67	1,831	2,075
Montane Riparian						
-71 to -100% CC						
-41 to -70% CC		1		2	1	4
-16 to -40% CC		1				2
+16 to +40% CC			1		22	24
Total		2	1	3	23	30
All Hardwood	7	16	318	81	2,781	3,203

Table C-40 Acres of Verified Change in Shasta County by Cause and Shrub/Chaparral Cover Type

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Mixed Chaparral						
Shrub/Grass Decrease > 15%	86	16		123	306	531
Shrub/Grass Increase > 15%			2,605	45	1,110	3,760
Total	86	16	2,605	169	1,416	4,291
Montane Chaparral						
Shrub/Grass Decrease > 15%		195		65	301	561
Shrub/Grass Increase > 15%		1	2,846	2	1,478	4,326
Total		195	2,846	67	1,779	4,887
Sagebrush						
Shrub/Grass Decrease > 15%		2				2
Shrub/Grass Increase > 15%			20		91	111
Total		2	20		91	113
All Shrub/Chaparral	86	213	5,471	236	3,285	9,291

Siskiyou County

Land Cover Change, 1994 – 1999

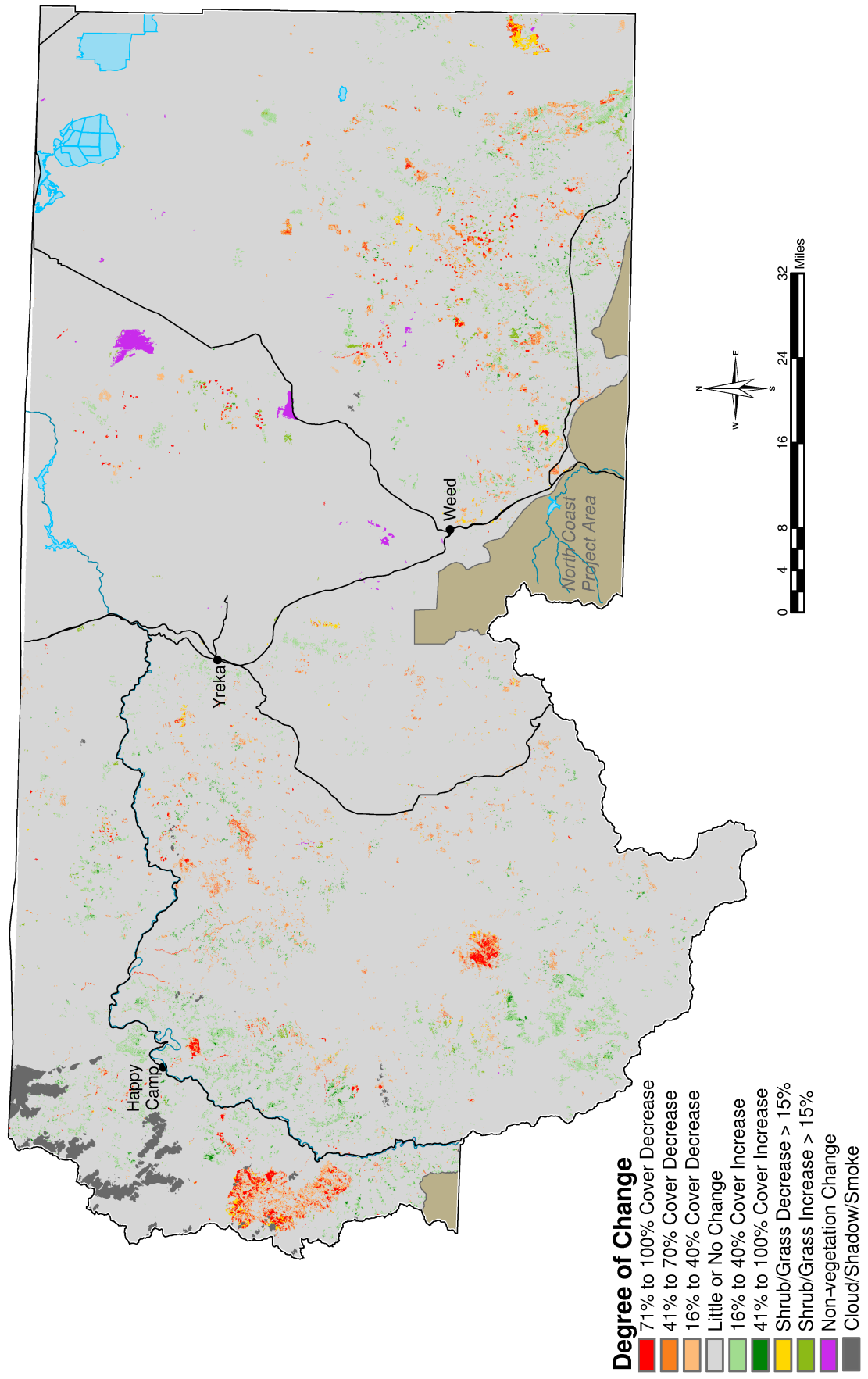


Table C-41 Acres of Classified Change in Siskiyou County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	9,107	1	793	1							9,900	
-41 to -70% CC	11,036	1	1,043	1							12,079	1
-16 to -40% CC	21,390	1	1,623	1							23,014	1
+15 to -15% CC (Little or No Change)	1,612,732	93	113,641	93	287,822	96	16,697	98	59,620	98	2,090,513	94
+16 to +40% CC	49,952	3	4,434	4							54,386	2
+41 to +100% CC	7,152		221								7,372	
Shrub/Grass Decrease > 15%					2,416	1	86	1			2,503	
Shrub/Grass Increase > 15%					1,787	1	83				1,870	
Non-Vegetation Change	19		1		9		21		259		309	
Cloud or Cloud Shadow	20,135	1	455		7,145	2	135	1	725	1	28,595	1
Total	1,731,524	100	122,212	100	299,180	100	17,021	100	60,604	100	2,230,541	100
	Other Public											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	4		3								7	
-41 to -70% CC	17		10								28	
-16 to -40% CC	124		4								128	
+15 to -15% CC (Little or No Change)	45,526	100	11,418	99	73,862	100	29,868	96	53,546	95	214,220	98
+16 to +40% CC	35		147	1							182	
+41 to +100% CC	8		1								9	
Shrub/Grass Decrease > 15%					4						4	
Shrub/Grass Increase > 15%					6		141				147	
Non-Vegetation Change					4		1,124	4	3,072	5	4,199	2
Total	45,714	100	11,583	100	73,876	100	31,132	100	56,618	100	218,923	100
	Private											
	Conifer		Hardwood		Shrub/Chaparral		Grass/Forb		Non-Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	4,920	1	294								5,214	
-41 to -70% CC	6,430	1	838	1							7,268	1
-16 to -40% CC	10,563	2	326								10,889	1
+15 to -15% CC (Little or No Change)	654,440	95	131,506	97	229,808	97	206,842	99	163,477	100	1,386,073	97
+16 to +40% CC	8,739	1	2,553	2							11,292	1
+41 to +100% CC	1,170		11								1,181	
Shrub/Grass Decrease > 15%					3,757	2	81				3,838	
Shrub/Grass Increase > 15%					3,011	1	614				3,625	
Non-Vegetation Change	128		1		88		1,835	1	538		2,590	
Cloud or Cloud Shadow	260		33		89						382	
Total	686,649	100	135,563	100	236,753	100	209,372	100	164,015	100	1,432,353	100

Table C-41 Acres of Classified Change in Siskiyou County by Lifeform and Owner Class (cont.)

	All Owners												
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		All Owners Total		
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	
-71 to -100% CC	14,031	1	1,090									15,121	
-41 to -70% CC	17,483	1	1,892	1								19,375	
-16 to -40% CC	32,077	1	1,954	1								34,031	1
+15 to -15% CC (Little or No Change)	2,312,698	94	256,565	95	591,492	97	253,408	98	276,643	98	3,690,806	95	
+16 to +40% CC	58,726	2	7,134	3								65,861	2
+41 to +100% CC	8,329		233									8,562	
Shrub/Grass Decrease > 15%					6,177	1	167					6,344	
Shrub/Grass Increase > 15%					4,805	1	837					5,642	
Non-Vegetation Change	147		2		101		2,979	1	3,869	1	7,098		
Cloud or Cloud Shadow	20,395	1	488		7,234	1	135		725		28,977	1	
Total	2,463,886	100	269,358	100	609,810	100	257,526	100	281,237	100	3,881,817	100	

Table C-42 Acres of Verified Change in Siskiyou County by Cause and Lifeform

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Conifer								
-71 to -100% CC	6,949	4,729	9	2	191	1,023	1,127	14,031
-41 to -70% CC	4,526	8,269	2	2	726	1,371	2,588	17,483
-16 to -40% CC	9,750	13,148	15	6	2,000	2,604	4,553	32,077
+16 to +40% CC	2	6		47,230	1	199	11,288	58,726
+41 to +100% CC		3		6,859		46	1,421	8,329
Total	21,228	26,156	26	54,098	2,918	5,242	20,978	130,646
Hardwood								
-71 to -100% CC	542	122	4		7	207	208	1,090
-41 to -70% CC	517	419	3		34	305	614	1,892
-16 to -40% CC	1,065	159			99	215	416	1,954
+16 to +40% CC				3,420			3,714	7,134
+41 to +100% CC				159			73	233
Total	2,124	701	7	3,580	140	727	5,025	12,303
Shrub/Chaparral								
Shrub/Grass Decrease > 15%	3,030	828	24		277	918	1,099	6,177
Shrub/Grass Increase > 15%				2,162		105	2,537	4,805
Total	3,030	828	24	2,163	278	1,023	3,635	10,982
Grass/Forb								
Shrub/Grass Decrease > 15%		6				90	71	167
Shrub/Grass Increase > 15%				318			520	837
Total		6		318		90	590	1,005
All Lifeforms	26,382	27,691	57	60,158	3,336	7,083	30,229	154,935

Table C-43 Acres of Classified Change in Siskiyou County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Closed Cone Pine-Cypress								
-71 to -100% CC	64	1			320	23	383	3
-41 to -70% CC	56				128	9	183	1
-16 to -40% CC	93	1			105	7	197	2
+15 to -15% CC (Little or No Change)	10,915	97			857	61	11,771	93
+16 to +40% CC	101	1			1		102	1
+41 to +100% CC	7						7	
Cloud or Cloud Shadow	18						18	
Total	11,252	100			1,410	100	12,661	100
Douglas Fir								
-71 to -100% CC	3,701	1	4		283		3,988	1
-41 to -70% CC	2,669	1	3		571	1	3,243	1
-16 to -40% CC	6,260	2	18	1	1,629	2	7,908	2
+15 to -15% CC (Little or No Change)	361,969	89	3,133	99	70,361	96	435,463	90
+16 to +40% CC	21,540	5	8		520	1	22,068	5
+41 to +100% CC	2,925	1			121		3,046	1
Non-Vegetation Change					1		2	
Cloud or Cloud Shadow	5,807	1			106		5,913	1
Total	404,872	100	3,167	100	73,593	100	481,632	100
Eastside Pine								
-71 to -100% CC	165				504	1	669	
-41 to -70% CC	971	1	12		756	1	1,738	1
-16 to -40% CC	1,105	1	102	4	574	1	1,780	1
+15 to -15% CC (Little or No Change)	160,739	95	2,433	95	63,881	95	227,053	95
+16 to +40% CC	5,911	3	1		1,680	2	7,592	3
+41 to +100% CC	701		6		133		840	
Non-Vegetation Change	2				3		4	
Cloud or Cloud Shadow	66						66	
Total	169,660	100	2,553	100	67,531	100	239,744	100
Jeffrey Pine								
-71 to -100% CC	334	2			4		338	2
-41 to -70% CC	119	1			3		122	1
-16 to -40% CC	244	2			9	1	253	2
+15 to -15% CC (Little or No Change)	12,111	84	20	100	1,627	96	13,758	86
+16 to +40% CC	492	3			23	1	515	3
+41 to +100% CC	35				12	1	47	
Cloud or Cloud Shadow	1,018	7			7		1,025	6
Total	14,352	100	20	100	1,687	100	16,059	100

Table C-43 Acres of Classified Change in Siskiyou County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Juniper								
-71 to -100% CC					86		86	
-41 to -70% CC			1		38		39	
-16 to -40% CC	10		2		77		88	
+15 to -15% CC (Little or No Change)	25,284	100	31,008	100	116,871	100	173,162	100
+16 to +40% CC	43				21		65	
+41 to +100% CC	1				7		8	
Non-Vegetation Change					12		12	
Total	25,338	100	31,011	100	117,111	100	173,460	100
Klamath Mixed Conifer								
-71 to -100% CC	2,212	1			479		2,691	1
-41 to -70% CC	2,231	1	2		860	1	3,093	1
-16 to -40% CC	4,754	1	2		2,218	2	6,975	1
+15 to -15% CC (Little or No Change)	337,975	93	1,970	99	100,007	95	439,952	93
+16 to +40% CC	7,068	2	9		1,069	1	8,146	2
+41 to +100% CC	1,377		2		280		1,660	
Non-Vegetation Change					5		5	
Cloud or Cloud Shadow	8,458	2			107		8,566	2
Total	364,077	100	1,985	100	105,026	100	471,087	100
Lodgepole Pine								
-71 to -100% CC	21				222	3	244	1
-41 to -70% CC	131				264	4	395	1
-16 to -40% CC	124				216	3	340	1
+15 to -15% CC (Little or No Change)	26,725	97	38	100	6,099	89	32,862	95
+16 to +40% CC	533	2			20		553	2
+41 to +100% CC	57				3		60	
Non-Vegetation Change					33		33	
Total	27,592	100	38	100	6,858	100	34,487	100
Montane Hardwood-Conifer								
-71 to -100% CC	1,172	1			145		1,317	1
-41 to -70% CC	1,201	1			339	1	1,540	1
-16 to -40% CC	2,940	3			237	1	3,177	2
+15 to -15% CC (Little or No Change)	104,993	92	1,367	99	33,830	97	140,190	93
+16 to +40% CC	3,499	3	16	1	302	1	3,817	3
+41 to +100% CC	275				7		282	
Non-Vegetation Change								
Cloud or Cloud Shadow	472				2		475	
Total	114,551	100	1,383	100	34,864	100	150,798	100

Table C-43 Acres of Classified Change in Siskiyou County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Ponderosa Pine								
-71 to -100% CC	11				46		57	
-41 to -70% CC	83	1			141		224	
-16 to -40% CC	271	3			521	1	792	1
+15 to -15% CC (Little or No Change)	10,016	95	3,138	100	48,785	98	61,938	98
+16 to +40% CC	147	1			148		295	
+41 to +100% CC	68	1			41		109	
Non-Vegetation Change					38		38	
Total	10,596	100	3,138	100	49,720	100	63,454	100
Red Fir								
-71 to -100% CC	209				343	1	552	
-41 to -70% CC	454				309	1	763	
-16 to -40% CC	983	1			359	1	1,342	1
+15 to -15% CC (Little or No Change)	183,665	97	280	100	32,071	95	216,017	97
+16 to +40% CC	1,946	1			494	1	2,439	1
+41 to +100% CC	361				57		419	
Non-Vegetation Change	3				4		7	
Cloud or Cloud Shadow	1,436	1			26		1,462	1
Total	189,057	100	280	100	33,663	100	223,000	100
Sierran Mixed Conifer								
-71 to -100% CC	851				1,494	1	2,345	1
-41 to -70% CC	2,491	1			2,180	1	4,671	1
-16 to -40% CC	3,265	1			3,176	2	6,442	2
+15 to -15% CC (Little or No Change)	215,898	94	1,977	100	138,912	93	356,787	93
+16 to +40% CC	6,757	3			3,972	3	10,729	3
+41 to +100% CC	1,038				407		1,445	
Non-Vegetation Change	12				6		17	
Cloud or Cloud Shadow	5						5	
Total	230,317	100	1,977	100	150,147	100	382,441	100
Subalpine Conifer								
-71 to -100% CC	11				9		20	
-41 to -70% CC	26				41	1	67	
-16 to -40% CC	104				50	1	154	
+15 to -15% CC (Little or No Change)	27,520	99			3,588	97	31,109	98
+16 to +40% CC	60				10		70	
+41 to +100% CC	9				2		12	
Non-Vegetation Change	2						2	
Cloud or Cloud Shadow	186	1					186	1
Total	27,919	100			3,700	100	31,619	100

Table C-43 Acres of Classified Change in Siskiyou County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
White Fir								
-71 to -100% CC	356				985	2	1,341	1
-41 to -70% CC	604				800	2	1,404	1
-16 to -40% CC	1,238	1			1,390	3	2,628	1
+15 to -15% CC (Little or No Change)	134,923	95	161	100	37,552	91	172,636	94
+16 to +40% CC	1,856	1			478	1	2,334	1
+41 to +100% CC	296				98		394	
Non-Vegetation Change					26		26	
Cloud or Cloud Shadow	2,669	2			10		2,679	1
Total	141,942	100	161	100	41,340	100	183,443	100
All Conifer	1,731,524		45,714		686,649		2,463,886	

Table C-44 Acres of Classified Change in Siskiyou County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Blue Oak-Foothill Pine								
-71 to -100% CC	1						1	
-41 to -70% CC	1						1	
-16 to -40% CC	6	1					6	1
+15 to -15% CC (Little or No Change)	503	98			4	100	507	98
+16 to +40% CC	3	1					3	1
Total	514	100			4	100	518	100
Montane Hardwood								
-71 to -100% CC	792	1	3		289		1,084	
-41 to -70% CC	1,039	1	10		809	1	1,859	1
-16 to -40% CC	1,617	1	4		323		1,944	1
+15 to -15% CC (Little or No Change)	111,827	93	11,305	99	129,242	97	252,374	95
+16 to +40% CC	4,431	4	147	1	2,541	2	7,118	3
+41 to +100% CC	221		1		11		233	
Non-Vegetation Change	1				1		2	
Cloud or Cloud Shadow	454				33		488	
Total	120,382	100	11,470	100	133,249	100	265,101	100
Montane Riparian								
-71 to -100% CC					5		5	
-41 to -70% CC	3				29	1	32	1
-16 to -40% CC					3		4	
+15 to -15% CC (Little or No Change)	1,311	100	113	100	2,260	98	3,684	99
+16 to +40% CC	1				12	1	13	
Cloud or Cloud Shadow								
Total	1,316	100	113	100	2,310	100	3,739	100
All Hardwood	122,212		11,583		135,563		269,358	

Table C-45 Acres of Classified Change in Siskiyou County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Bitterbrush								
+15 to -15% CC (Little or No Change)	64,034	100	43,948	100	69,703	99	177,685	100
Shrub/Grass Decrease > 15%	5		1		222		228	
Shrub/Grass Increase > 15%	22				320		342	
Non-Vegetation Change	8		4		69		81	
Cloud or Cloud Shadow	22						22	
Total	64,091	100	43,953	100	70,314	100	178,358	100
Low Sagebrush								
+15 to -15% CC (Little or No Change)	1,372	100	26	100	1,001	100	2,398	100
Total	1,372	100	26	100	1,001	100	2,398	100
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	32,946	94	7,763	100	73,945	99	114,655	98
Shrub/Grass Decrease > 15%	546	2	3		368		917	1
Shrub/Grass Increase > 15%	434	1	2		143		578	
Non-Vegetation Change					11		11	
Cloud or Cloud Shadow	1,211	3			38		1,249	1
Total	35,138	100	7,768	100	74,505	100	117,410	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	169,121	95	1,700	100	67,729	92	238,550	94
Shrub/Grass Decrease > 15%	1,863	1			3,161	4	5,024	2
Shrub/Grass Increase > 15%	1,312	1			2,494	3	3,806	2
Non-Vegetation Change	1				6		7	
Cloud or Cloud Shadow	5,912	3			50		5,963	2
Total	178,209	100	1,700	100	73,441	100	253,350	100
Sagebrush								
+15 to -15% CC (Little or No Change)	20,350	100	20,424	100	17,430	100	58,203	100
Shrub/Grass Decrease > 15%	2				6		8	
Shrub/Grass Increase > 15%	20		4		55		79	
Non-Vegetation Change					2		2	
Total	20,371	100	20,428	100	17,493	100	58,293	100
All Shrub/Chaparral	299,180		73,876		236,753		609,810	

Table C-46 Acres of Verified Change in Siskiyou County by Cause and Conifer Cover Type

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Closed Cone Pine-Cypress								
-71 to -100% CC	61	2				308	12	383
-41 to -70% CC	22	14				117	29	183
-16 to -40% CC	14	40			2	88	53	197
+16 to +40% CC				66			36	102
+41 to +100% CC				3			4	7
Total	98	57		69	2	513	134	872
Douglas Fir								
-71 to -100% CC	3,118	540		2	34	100	194	3,988
-41 to -70% CC	2,007	702		1	135	123	276	3,243
-16 to -40% CC	4,750	1,827		1	279	403	648	7,908
+16 to +40% CC	2	4		20,334			1,728	22,068
+41 to +100% CC		2		2,838			207	3,046
Total	9,877	3,075		23,175	448	626	3,054	40,254
Eastside Pine								
-71 to -100% CC	378	189	6			47	50	669
-41 to -70% CC	251	849	2		12	364	261	1,738
-16 to -40% CC	311	691	12		192	268	306	1,780
+16 to +40% CC				6,565		22	1,005	7,592
+41 to +100% CC				705		3	132	840
Total	939	1,730	19	7,269	204	704	1,754	12,620
Jeffrey Pine								
-71 to -100% CC	306	16			1	12	2	338
-41 to -70% CC	74	18			6	11	13	122
-16 to -40% CC	115	94			11	24	9	253
+16 to +40% CC				430			85	515
+41 to +100% CC				31			16	47
Total	496	129		461	18	46	125	1,275
Juniper								
-71 to -100% CC	3	2				81		86
-41 to -70% CC	1	8				25	5	39
-16 to -40% CC	5	37			9	16	22	88
+16 to +40% CC				43			21	65
+41 to +100% CC				1			7	8
Total	9	47		44	9	122	55	286
Klamath Mixed Conifer								
-71 to -100% CC	1,866	530			69	74	153	2,691
-41 to -70% CC	1,230	1,069			244	161	390	3,093
-16 to -40% CC	2,123	3,021		1	509	363	958	6,975
+16 to +40% CC				6,141		1	2,004	8,146
+41 to +100% CC				1,186			474	1,660
Total	5,219	4,620		7,328	821	598	3,978	22,565

Table C-46 Acres of Verified Change in Siskiyou County by Cause and Conifer Cover Type (cont.)

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Lodgepole Pine								
-71 to -100% CC		183				16	44	244
-41 to -70% CC		311				48	36	395
-16 to -40% CC		301				22	16	340
+16 to +40% CC				520			33	553
+41 to +100% CC				60			1	60
Total		795		580		87	130	1,592
Montane Hardwood-Conifer								
-71 to -100% CC	909	146			24	112	125	1,317
-41 to -70% CC	714	425		1	41	131	228	1,540
-16 to -40% CC	2,094	356		2	143	187	395	3,177
+16 to +40% CC				3,012			806	3,817
+41 to +100% CC				243			39	282
Total	3,717	927		3,257	209	430	1,593	10,134
Ponderosa Pine								
-71 to -100% CC		36			4	1	16	57
-41 to -70% CC		162			17	2	43	224
-16 to -40% CC		593			15	7	177	792
+16 to +40% CC		2		105			189	295
+41 to +100% CC		1		64			44	109
Total	1	794		169	36	10	469	1,478
Red Fir								
-71 to -100% CC	29	344			27	37	115	552
-41 to -70% CC	42	366			127	48	181	763
-16 to -40% CC	95	356		1	466	139	286	1,342
+16 to +40% CC				1,849		56	534	2,439
+41 to +100% CC				336		4	79	419
Total	166	1,066		2,185	620	283	1,194	5,515
Sierran Mixed Conifer								
-71 to -100% CC	131	1,737	3			119	355	2,345
-41 to -70% CC	69	3,401				203	997	4,671
-16 to -40% CC	39	4,288	4			715	1,395	6,442
+16 to +40% CC		1		6,594		100	4,034	10,729
+41 to +100% CC				1,107		38	299	1,445
Total	239	9,427	7	7,702		1,176	7,081	25,631
Subalpine Conifer								
-71 to -100% CC	6	10				3		20
-41 to -70% CC	7	40			3	5	11	67
-16 to -40% CC	12	64			25	19	34	154
+16 to +40% CC				38			32	70
+41 to +100% CC				5			6	12
Total	26	115		43	28	27	84	322

Table C-46 Acres of Verified Change in Siskiyou County by Cause and Conifer Cover Type (cont.)

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
White Fir								
-71 to -100% CC	142	995			32	112	60	1,341
-41 to -70% CC	108	903			141	133	119	1,404
-16 to -40% CC	193	1,478		1	350	353	254	2,628
+16 to +40% CC				1,534	1	19	780	2,334
+41 to +100% CC				280		1	113	394
Total	442	3,375		1,815	523	619	1,326	8,101
All Conifer	21,228	26,156	26	54,098	2,918	5,242	20,978	130,646

Table C-47 Acres of Verified Change in Siskiyou County by Cause and Hardwood Cover Type

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Blue Oak-Foothill Pine								
-71 to -100% CC					1			1
-41 to -70% CC					1			1
-16 to -40% CC					6			6
+16 to +40% CC				3				3
Total				3	8		1	11
Montane Hardwood								
-71 to -100% CC	542	122	4		6	207	203	1,084
-41 to -70% CC	517	419	3		34	305	582	1,859
-16 to -40% CC	1,065	159			93	215	412	1,944
+16 to +40% CC				3,417			3,701	7,118
+41 to +100% CC				159			73	233
Total	2,124	701	7	3,576	133	727	4,971	12,238
Montane Riparian								
-71 to -100% CC							5	5
-41 to -70% CC							32	32
-16 to -40% CC							4	4
+16 to +40% CC							13	13
Total							54	54
All Hardwood	2,124	701	7	3,580	140	727	5,025	12,303

Table C-48 Acres of Verified Change in Siskiyou County by Cause and Shrub/Chaparral Cover Type

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Bitterbrush								
Shrub/Grass Decrease > 15%	2	85				119	22	228
Shrub/Grass Increase > 15%				171			170	342
Total	2	85		171		119	192	570
Mixed Chaparral								
Shrub/Grass Decrease > 15%	493	28			48	6	341	917
Shrub/Grass Increase > 15%				373			205	578
Total	493	28		373	48	6	546	1,495
Montane Chaparral								
Shrub/Grass Decrease > 15%	2,532	713	24		229	793	733	5,024
Shrub/Grass Increase > 15%				1,589		105	2,111	3,806
Total	2,532	713	24	1,589	229	898	2,844	8,830
Sagebrush								
Shrub/Grass Decrease > 15%	3	2					4	8
Shrub/Grass Increase > 15%				29			50	79
Total	3	2		29			54	87
All Shrub/Chaparral	3,030	828	24	2,163	278	1,023	3,635	10,982

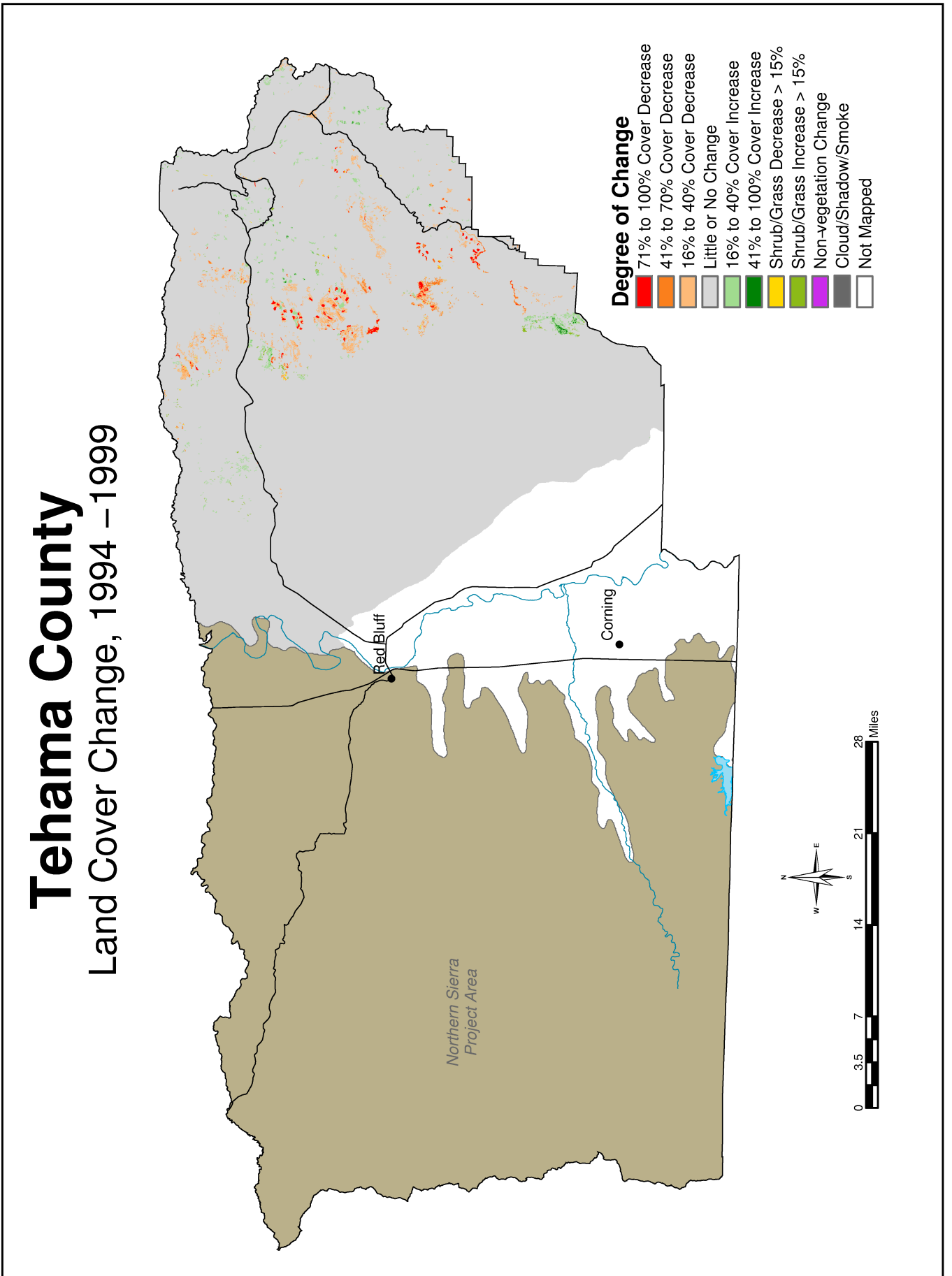


Table C-49 Acres of Classified Change in Tehama County by Lifeform and Owner Class

	Forest Service											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		Forest Service Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	95		5									100
-41 to -70% CC	236		25									261
-16 to -40% CC	728	1	17									745
+15 to -15% CC (Little or No Change)	103,082	97	32,799	100	41,116	99	11,538	100	554	100	189,088	98
+16 to +40% CC	1,581	1	20									1,601
+41 to +100% CC	91											91
Shrub/Grass Decrease > 15%					467	1	5					472
Shrub/Grass Increase > 15%					68							68
Total	105,813	100	32,865	100	41,651	100	11,543	100	554	100	192,426	100

	Other Public											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		Other Public Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	4		1									5
-41 to -70% CC	2		2									4
-16 to -40% CC	5		1									6
+15 to -15% CC (Little or No Change)	3,816	99	30,171	100	13,042	100	28,519	100	512	100	76,061	100
+16 to +40% CC	38	1	16									54
+41 to +100% CC	5											5
Shrub/Grass Decrease > 15%					1							1
Shrub/Grass Increase > 15%					36		15					51
Total	3,870	100	30,192	100	13,079	100	28,534	100	512	100	76,187	100

	Private											
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		Private Total	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
-71 to -100% CC	1,164	1	125									1,289
-41 to -70% CC	1,034	1	170									1,204
-16 to -40% CC	8,507	6	112									8,619
+15 to -15% CC (Little or No Change)	133,428	91	123,203	99	49,531	97	104,635	100	1,635	100	412,432	96
+16 to +40% CC	2,102	1	628	1								2,729
+41 to +100% CC	201											201
Shrub/Grass Decrease > 15%					1,065	2	89					1,154
Shrub/Grass Increase > 15%					403	1	1					403
Total	146,435	100	124,239	100	50,999	100	104,725	100	1,635	100	428,031	100

Table C-49 Acres of Classified Change in Tehama County by Lifeform and Owner Class (cont.)

	All Owners												
	Conifer		Hardwood		Shrub/ Chaparral		Grass/ Forb		Non- Forested		All Owners Total		
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	
-71 to -100% CC	1,264		131									1,395	
-41 to -70% CC	1,271		197									1,468	
-16 to -40% CC	9,241	4	130									9,370	1
+15 to -15% CC (Little or No Change)	240,326	94	186,174	99	103,689	98	144,692	100	2,700	100	677,580	97	
+16 to +40% CC	3,720	1	664									4,384	1
+41 to +100% CC	298											298	
Shrub/Grass Decrease > 15%					1,533	1	94					1,627	
Shrub/Grass Increase > 15%					507		16					522	
Total	256,119	100	187,296	100	105,728	100	144,801	100	2,700	100	696,644	100	

Table C-50 Acres of Verified Change in Tehama County by Cause and Lifeform

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Conifer						
-71 to -100% CC	10	1,195		4	54	1,264
-41 to -70% CC	106	1,004		15	146	1,271
-16 to -40% CC	165	7,616		88	1,371	9,241
+16 to +40% CC		1	3,152		568	3,720
+41 to +100% CC			290		8	298
Total	281	9,817	3,442	107	2,146	15,793
Hardwood						
-71 to -100% CC		128			3	131
-41 to -70% CC	12	136			49	197
-16 to -40% CC	6	86			38	130
+16 to +40% CC			155		508	664
Total	18	349	155		598	1,122
Shrub/Chaparral						
Shrub/Grass Decrease > 15%	984	310		5	234	1,533
Shrub/Grass Increase > 15%			310		196	507
Total	984	310	310	5	430	2,040
Grass/Forb						
Shrub/Grass Decrease > 15%	39	36			19	94
Shrub/Grass Increase > 15%					16	16
Total	39	36			35	109
All Lifeforms	1,323	10,511	3,907	113	3,209	19,063

Table C-51 Acres of Classified Change in Tehama County by Conifer Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Closed Cone Pine-Cypress								
+15 to -15% CC (Little or No Change)	9	100					9	100
Total	9	100					9	100
Douglas Fir								
-41 to -70% CC					1		2	
-16 to -40% CC	3				31	3	34	1
+15 to -15% CC (Little or No Change)	1,311	100	3	100	1,029	97	2,342	98
+16 to +40% CC					1		1	
Total	1,314	100	3	100	1,063	100	2,380	100
Lodgepole Pine								
-71 to -100% CC	1	1					2	
-41 to -70% CC	1	1			2		4	
-16 to -40% CC	6	3			50	3	56	3
+15 to -15% CC (Little or No Change)	173	92			1,704	96	1,877	95
+16 to +40% CC	5	3			26	1	31	2
+41 to +100% CC								
Total	187	100			1,784	100	1,970	100
Montane Hardwood-Conifer								
-71 to -100% CC	2				23		25	
-41 to -70% CC	28	1			97	2	126	2
-16 to -40% CC	17	1			60	1	77	1
+15 to -15% CC (Little or No Change)	2,477	98	338	99	5,153	96	7,968	96
+16 to +40% CC	14	1	3	1	53	1	70	1
Total	2,538	100	340	100	5,387	100	8,266	100
Ponderosa Pine								
-71 to -100% CC	10		3	1	59		72	
-41 to -70% CC	89	1			135	1	224	1
-16 to -40% CC	173	2	2	1	860	5	1,035	3
+15 to -15% CC (Little or No Change)	10,305	97	392	97	17,460	93	28,157	94
+16 to +40% CC	71	1	5	1	271	1	347	1
+41 to +100% CC					10		10	
Total	10,648	100	403	100	18,795	100	29,846	100
Red Fir								
-41 to -70% CC	1						1	
-16 to -40% CC	35	1					35	1
+15 to -15% CC (Little or No Change)	4,429	97	1,690	99	23	96	6,142	98
+16 to +40% CC	91	2	8		1	4	100	2
+41 to +100% CC	2		2				3	
Total	4,557	100	1,700	100	24	100	6,281	100

Table C-51 Acres of Classified Change in Tehama County by Conifer Cover Type and Owner Class (cont.)

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Sierran Mixed Conifer								
-71 to -100% CC	80		2		1,080	1	1,162	1
-41 to -70% CC	114		1		797	1	912	
-16 to -40% CC	455	1	3		7,479	7	7,937	4
+15 to -15% CC (Little or No Change)	74,350	97	1,115	97	102,289	90	177,754	93
+16 to +40% CC	1,219	2	22	2	1,735	2	2,975	2
+41 to +100% CC	77		4		191		272	
Total	76,294	100	1,146	100	113,571	100	191,012	100
Subalpine Conifer								
+15 to -15% CC (Little or No Change)	13	100	173	100			186	100
Total	13	100	173	100			186	100
White Fir								
-71 to -100% CC	2						3	
-41 to -70% CC	3						3	
-16 to -40% CC	39				27		66	
+15 to -15% CC (Little or No Change)	10,017	98	104	100	5,769	99	15,890	98
+16 to +40% CC	181	2			14		195	1
+41 to +100% CC	12						12	
Total	10,254	100	104	100	5,811	100	16,168	100
All Conifer	105,813		3,870		146,435		256,119	

Table C-52 Acres of Classified Change in Tehama County by Hardwood Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Aspen								
-71 to -100% CC			1	1			1	
-41 to -70% CC			2	3			2	2
-16 to -40% CC			1	1			1	
+15 to -15% CC (Little or No Change)	54	100	76	95	3	100	133	97
Total	54	100	80	100	3	100	137	100
Blue Oak Woodland								
-71 to -100% CC					2		2	
-41 to -70% CC	3				32		35	
-16 to -40% CC	4				27		31	
+15 to -15% CC (Little or No Change)	17,773	100	27,432	100	102,445	100	147,650	100
+16 to +40% CC	2		8		448		458	
Total	17,782	100	27,440	100	102,955	100	148,178	100
Blue Oak-Foothill Pine								
+15 to -15% CC (Little or No Change)	565	100	535	100	4,944	100	6,045	100
Total	565	100	535	100	4,944	100	6,045	100
Montane Hardwood								
-71 to -100% CC	5				123	1	128	
-41 to -70% CC	22				138	1	160	1
-16 to -40% CC	13				85	1	98	
+15 to -15% CC (Little or No Change)	14,294	100	1,615	100	14,592	97	30,501	98
+16 to +40% CC	14		8		178	1	199	1
Total	14,348	100	1,623	100	15,115	100	31,086	100
Montane Riparian								
+15 to -15% CC (Little or No Change)	112	97	23	96	47	96	182	96
+16 to +40% CC	4	3	1	4	2	4	7	4
Total	116	100	24	100	48	100	189	100
Valley Oak Woodland								
+15 to -15% CC (Little or No Change)			490	100	1,172	100	1,662	100
Total			490	100	1,172	100	1,662	100
All Hardwood	32,865		30,192		124,239		187,296	

Table C-53 Acres of Classified Change in Tehama County by Shrub/Chaparral Cover Type and Owner Class

	Forest Service		Other Public		Private		All Owners	
	Acres	%	Acres	%	Acres	%	Acres	%
Mixed Chaparral								
+15 to -15% CC (Little or No Change)	32,923	99	12,225	100	42,633	98	87,781	99
Shrub/Grass Decrease > 15%	372	1			411	1	784	1
Shrub/Grass Increase > 15%	32		18		256	1	306	
Total	33,328	100	12,243	100	43,300	100	88,870	100
Montane Chaparral								
+15 to -15% CC (Little or No Change)	8,193	98	817	98	6,898	90	15,908	94
Shrub/Grass Decrease > 15%	95	1			654	8	749	4
Shrub/Grass Increase > 15%	35		19	2	147	2	201	1
Total	8,323	100	836	100	7,699	100	16,858	100
All Shrub/Chaparral	41,651		13,079		50,999		105,728	

Table C-54 Acres of Verified Change in Tehama County by Cause and Conifer Cover Type

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Douglas Fir						
-41 to -70% CC					1	2
-16 to -40% CC		16			18	34
+16 to +40% CC					1	1
Total		16			20	37
Lodgepole Pine						
-71 to -100% CC					1	2
-41 to -70% CC		2			1	4
-16 to -40% CC		47			9	56
+16 to +40% CC					31	31
+41 to +100% CC						
Total		50			44	93
Montane Hardwood-Conifer						
-71 to -100% CC	1	24				25
-41 to -70% CC	20	84			22	126
-16 to -40% CC	11	52			14	77
+16 to +40% CC			62		8	70
Total	32	160	62		44	298
Ponderosa Pine						
-71 to -100% CC	6	58			8	72
-41 to -70% CC	80	113			30	224
-16 to -40% CC	107	645			283	1,035
+16 to +40% CC			314		33	347
+41 to +100% CC			10			10
Total	193	816	324		355	1,689
Red Fir						
-41 to -70% CC				1		1
-16 to -40% CC				27	8	35
+16 to +40% CC			89		11	100
+41 to +100% CC			2		2	3
Total			91	28	21	139
Sierran Mixed Conifer						
-71 to -100% CC	3	1,113		2	44	1,162
-41 to -70% CC	6	803		12	91	912
-16 to -40% CC	47	6,818		61	1,011	7,937
+16 to +40% CC		1	2,496		479	2,975
+41 to +100% CC			266		5	272
Total	56	8,734	2,763	75	1,629	13,257
White Fir						
-71 to -100% CC				2		3
-41 to -70% CC				2		3
-16 to -40% CC		39			27	66
+16 to +40% CC			189		6	195
+41 to +100% CC			12			12
Total		40	201	4	33	279
All Conifer	281	9,817	3,442	107	2,146	15,793

Table C-55 Acres of Verified Change in Tehama County by Cause and Hardwood Cover Type

	Fire	Harvest	Regrowth	Unverified Cause	All Causes
Aspen					
-71 to -100% CC				1	1
-41 to -70% CC				2	2
-16 to -40% CC				1	1
Total				4	4
Blue Oak Woodland					
-71 to -100% CC		1		1	2
-41 to -70% CC	1	7		27	35
-16 to -40% CC		5		26	31
+16 to +40% CC			1	457	458
Total	1	13	1	512	527
Montane Hardwood					
-71 to -100% CC		127		1	128
-41 to -70% CC	11	129		20	160
-16 to -40% CC	6	81		10	98
+16 to +40% CC			153	46	199
Total	18	336	153	77	584
Montane Riparian					
+16 to +40% CC			2	5	7
Total			2	5	7
All Hardwood	18	349	155	598	1,122

Table C-56 Acres of Verified Change in Tehama County by Cause and Shrub/Chaparral Cover Type

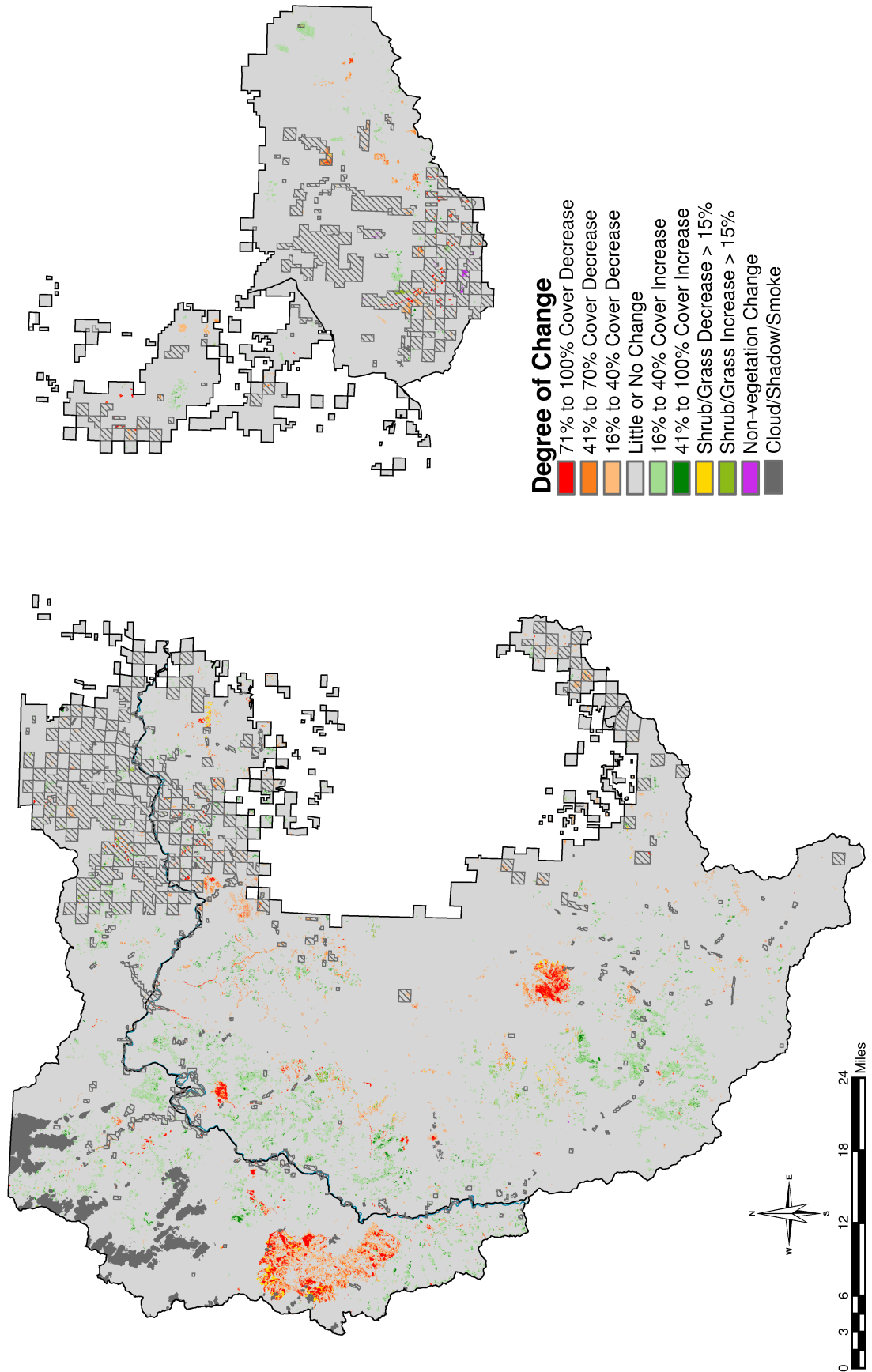
	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Mixed Chaparral						
Shrub/Grass Decrease > 15%	535	111		2	136	784
Shrub/Grass Increase > 15%			189		117	306
Total	535	111	189	2	254	1,090
Montane Chaparral						
Shrub/Grass Decrease > 15%	449	199		4	97	749
Shrub/Grass Increase > 15%			122		79	201
Total	449	199	122	4	176	950
All Shrub/Chaparral	984	310	310	5	430	2,040

National Forest Maps and Tables

1. Forest Change Map
2. Acres of Classified Change by Lifeform Type and National Forest
3. Acres of Classified Conifer Change by CALVEG Type and National Forest
4. Acres of Classified Hardwood Change by CALVEG Type and National Forest
5. Acres of Classified Shrub/Chaparral Change by CALVEG Type and National Forest
6. Acres of Verified Change in the Klamath National Forest by Cause and Conifer CALVEG Type
7. Acres of Verified Change in the Klamath National Forest by Cause and Hardwood CALVEG Type
8. Acres of Verified Change in the Klamath National Forest by Cause and Shrub/Chaparral CALVEG Type
9. Acres of Verified Change in the Lassen National Forest by Cause and Conifer CALVEG Type
10. Acres of Verified Change in the Lassen National Forest by Cause and Hardwood CALVEG Type
11. Acres of Verified Change in the Lassen National Forest by Cause and Shrub/Chaparral CALVEG Type
12. Acres of Verified Change in the Modoc National Forest by Cause and Conifer CALVEG Type
13. Acres of Verified Change in the Modoc National Forest by Cause and Hardwood CALVEG Type
14. Acres of Verified Change in the Modoc National Forest by Cause and Shrub/Chaparral CALVEG Type
15. Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Conifer CALVEG Type
16. Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Hardwood CALVEG Type
17. Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Shrub/Chaparral CALVEG Type

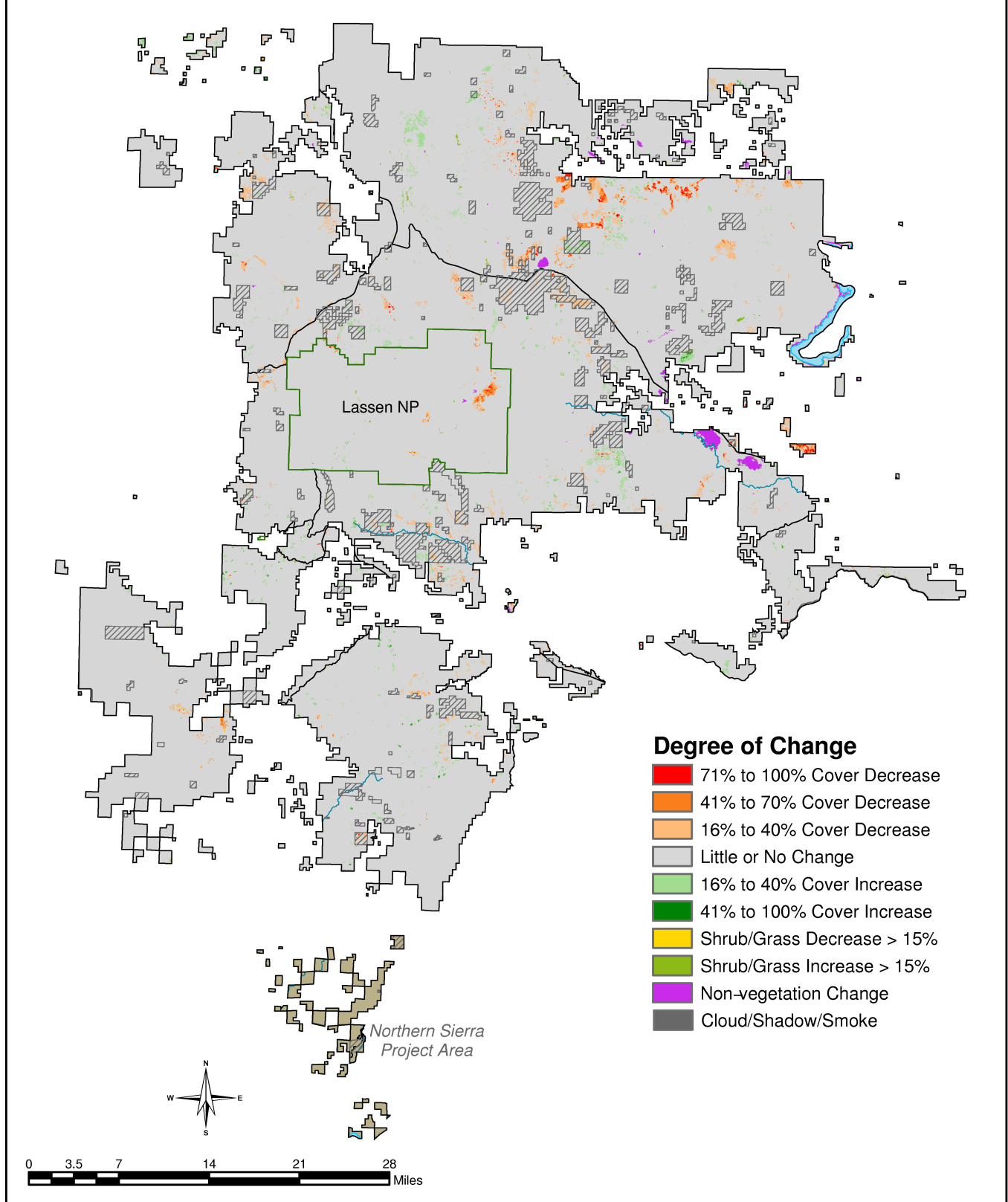
Klamath National Forest

Land Cover Change, 1994 – 1999



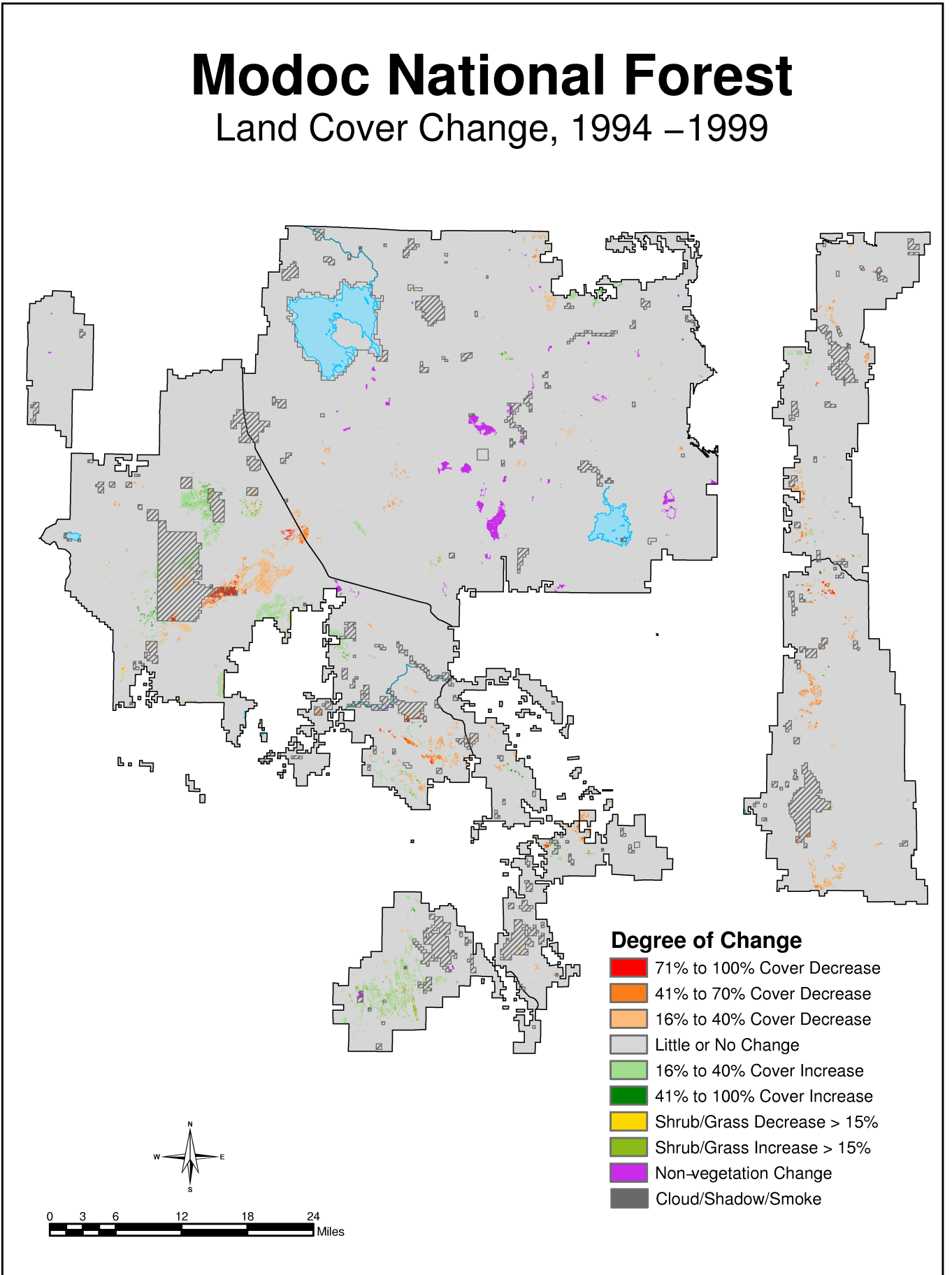
Lassen National Forest

Land Cover Change, 1994 – 1999



Modoc National Forest

Land Cover Change, 1994 – 1999



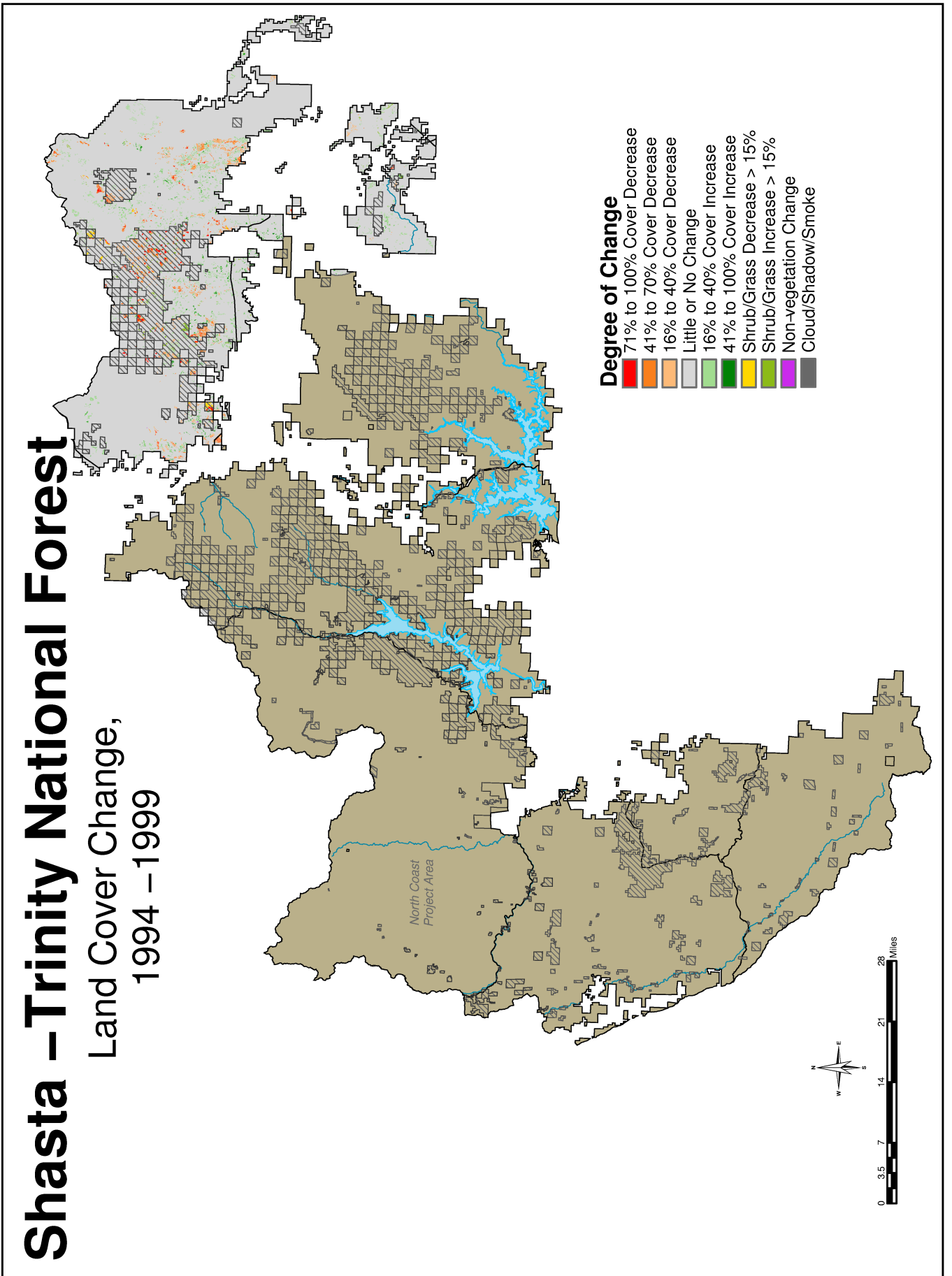


Table F-1 Acres of Classified Change by Lifeform Type and National Forest

	Klamath		Lassen		Modoc		Plumas		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Conifer												
-71 to -100% CC	8,026	1	1,364	0	950	0	0	0	1,108	0	11,468	0
-41 to -70% CC	7,497	1	2,678	0	5,624	1			3,534	1	19,364	1
-16 to -40% CC	17,125	1	15,034	2	9,914	1	2	0	4,585	1	46,707	1
+15 to -15% CC (Little or No Change)	1,228,474	93	762,524	96	815,547	96	995	96	321,235	93	3,183,407	94
+16 to +40% CC	36,733	3	11,143	1	14,510	2	34	3	13,553	4	76,046	2
+41 to +100% CC	5,172	0	454	0	683	0			1,916	1	8,230	0
Non-Vegetation Change	2	0	19	0	1	0			17	0	39	0
Cloud or Cloud Shadow	20,131	2									24,765	1
Total	1,323,161	100	793,216	100	847,228	100	1,031	100	345,948	100	3,370,026	100
Hardwood												
-71 to -100% CC	793	1	5	0	0	0			0	0	798	0
-41 to -70% CC	1,037	1	26	0					14	0	1,081	1
-16 to -40% CC	1,621	1	17	0	0	0			6	0	1,652	1
+15 to -15% CC (Little or No Change)	108,944	93	35,480	99	5,975	100			14,807	96	168,523	95
+16 to +40% CC	4,419	4	157	0	3	0			589	4	5,201	3
+41 to +100% CC	220	0	1	0							226	0
Non-Vegetation Change	1	0									1	0
Cloud or Cloud Shadow	455	0									582	0
Total	117,490	100	35,686	100	5,978	100			15,416	100	178,064	100
Shrub/Chaparral												
+15 to -15% CC (Little or No Change)	159,292	94	174,376	98	728,246	99	66	100	85,861	99	1,167,233	98
Shrub/Grass Decrease > 15%	1,907	1	766	0	524	0			436	1	3,639	0
Shrub/Grass Increase > 15%	1,144	1	1,335	1	2,243	0	0	0	772	1	5,562	0
Non-Vegetation Change	1	0	720	0	1,061	0			1	0	1,782	0
Cloud or Cloud Shadow	7,148	4									8,708	1
Total	169,493	100	177,198	100	732,074	100	66	100	87,070	100	1,186,925	100
Grass/Forb												
+15 to -15% CC (Little or No Change)	9,892	97	26,729	98	21,315	99	2	100	2,944	99	63,527	98
Shrub/Grass Decrease > 15%	52	1	6	0					34	1	92	0
Shrub/Grass Increase > 15%	83	1	34	0							116	0
Non-Vegetation Change	18	0	595	2	231	1					844	1
Cloud or Cloud Shadow	135	1									143	0
Total	10,179	100	27,363	100	21,546	100	2	100	2,979	100	64,723	100
Non-Forested Other												
+15 to -15% CC (Little or No Change)	17,498	95	21,165	89	48,957	86	3	100	24,542	100	116,378	91
Non-Vegetation Change	206	1	2,611	11	7,686	14			1	0	10,509	8
Cloud or Cloud Shadow	725	4									758	1
Total	18,429	100	23,776	100	56,644	100	3	100	24,543	100	127,645	100
All Lifeforms	1,638,752		1,057,238		1,663,470		1,102		475,956		4,927,383	

Table F-2 Acres of Classified Conifer Change by CALVEG Type and National Forest

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Coulter Pine										
-71 to -100% CC	15	0	11	0			1	0	28	0
-41 to -70% CC	86	1	100	1			14	0	199	1
-16 to -40% CC	249	2	181	1			40	1	470	2
+15 to -15% CC (Little or No Change)	10,758	95	12,027	97			2,908	96	25,693	96
+16 to +40% CC	137	1	77	1			57	2	272	1
+41 to +100% CC	65	1	0	0			4	0	69	0
Total	11,311	100	12,397	100			3,023	100	26,731	100
Douglas Fir-Pine										
-71 to -100% CC	195	1							195	1
-41 to -70% CC	160	1							160	1
-16 to -40% CC	361	1							361	1
+15 to -15% CC (Little or No Change)	24,396	94	21	100			1,790	100	26,910	95
+16 to +40% CC	402	2					8	0	409	1
+41 to +100% CC	28	0					0	0	28	0
Cloud or Cloud Shadow	332	1							344	1
Total	25,875	100	21	100			1,798	100	28,408	100
Douglas Fir-White Fir										
-71 to -100% CC	802	1							802	1
-41 to -70% CC	624	1							626	1
-16 to -40% CC	1,338	2							1,340	2
+15 to -15% CC (Little or No Change)	72,198	89					0	100	79,701	90
+16 to +40% CC	1,631	2							1,632	2
+41 to +100% CC	207	0							208	0
Cloud or Cloud Shadow	4,140	5							4,476	5
Total	80,940	100					0	100	88,785	100
Eastside Pine										
-71 to -100% CC	4	0	266	0	565	0	158	0	993	0
-41 to -70% CC	65	0	626	0	1,820	1	901	1	3,412	0
-16 to -40% CC	173	0	3,891	2	3,271	1	899	1	8,234	1
+15 to -15% CC (Little or No Change)	82,817	98	184,935	96	321,738	95	71,612	91	661,137	95
+16 to +40% CC	1,176	1	2,898	2	11,957	4	4,718	6	20,749	3
+41 to +100% CC	18	0	76	0	332	0	675	1	1,102	0
Non-Vegetation Change	2	0	8	0	1	0			11	0
Cloud or Cloud Shadow	66	0							66	0
Total	84,321	100	192,700	100	339,685	100	78,964	100	695,704	100
Gray Pine										
-71 to -100% CC	0	0							0	0
-41 to -70% CC	0	0	1	0					1	0
-16 to -40% CC	2	0							2	0
+15 to -15% CC (Little or No Change)	500	96	872	100			1,965	99	3,337	99
+16 to +40% CC	18	3					21	1	39	1
Total	520	100	873	100			1,986	100	3,378	100

Table F-2 Acres of Classified Conifer Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Jeffrey Pine										
-71 to -100% CC	334	2							334	2
-41 to -70% CC	119	1	1	0					121	1
-16 to -40% CC	244	2	34	2					279	1
+15 to -15% CC (Little or No Change)	11,865	84	1,893	98			115	100	15,560	83
+16 to +40% CC	492	3							494	3
+41 to +100% CC	35	0							36	0
Cloud or Cloud Shadow	1,019	7							1,971	10
Total	14,108	100	1,927	100			115	100	18,794	100
Klamath Mixed Conifer										
+15 to -15% CC (Little or No Change)	347	100							347	100
Total	347	100							347	100
Knobcone Pine										
-71 to -100% CC	44	1					20	0	64	1
-41 to -70% CC	23	1					32	0	56	0
-16 to -40% CC	30	1					62	1	93	1
+15 to -15% CC (Little or No Change)	3,420	95			4	100	7,314	98	10,936	97
+16 to +40% CC	47	1					54	1	101	1
+41 to +100% CC	4	0					2	0	7	0
Cloud or Cloud Shadow	18	0							18	0
Total	3,586	100			4	100	7,485	100	11,273	100
Lodgepole Pine										
-71 to -100% CC	1	0	12	0			20	0	33	0
-41 to -70% CC	45	0	26	0	1	0	85	1	157	0
-16 to -40% CC	78	0	236	1	0	0	47	0	361	1
+15 to -15% CC (Little or No Change)	15,372	99	24,195	98	16,954	100	9,170	93	65,691	98
+16 to +40% CC	83	1	316	1	8	0	450	5	856	1
+41 to +100% CC	2	0	7	0	2	0	55	1	66	0
Non-Vegetation Change			7	0					7	0
Total	15,582	100	24,798	100	16,964	100	9,827	100	67,171	100
McNab Cypress										
+15 to -15% CC (Little or No Change)			13	100					13	100
Total			13	100					13	100
Mixed Conifer-Fir										
-71 to -100% CC	979	1	886	0	216	0	109	0	2,193	0
-41 to -70% CC	1,093	1	1,561	0	2,567	2	119	0	5,349	1
-16 to -40% CC	2,050	1	7,607	2	2,907	2	217	1	12,789	2
+15 to -15% CC (Little or No Change)	142,539	92	354,559	96	125,108	94	24,262	93	655,472	94
+16 to +40% CC	3,107	2	4,885	1	1,647	1	1,087	4	10,759	2
+41 to +100% CC	812	1	236	0	175	0	233	1	1,455	0
Non-Vegetation Change			3	0			12	0	15	0
Cloud or Cloud Shadow	5,080	3							5,624	1
Total	155,660	100	369,736	100	132,620	100	26,038	100	693,656	100

Table F-2 Acres of Classified Conifer Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Mixed Conifer-Pine										
-71 to -100% CC	1,217	1	95	0			283	0	1,595	0
-41 to -70% CC	1,266	1	150	0	6	0	875	1	2,308	1
-16 to -40% CC	2,799	1	1,070	1	18	1	1,549	2	5,445	1
+15 to -15% CC (Little or No Change)	188,368	94	72,911	96	2,680	86	72,869	92	349,128	94
+16 to +40% CC	4,036	2	1,429	2	343	11	3,469	4	9,281	3
+41 to +100% CC	532	0	92	0	69	2	435	1	1,127	0
Cloud or Cloud Shadow	1,904	1							2,027	1
Total	200,123	100	75,747	100	3,116	100	79,479	100	370,912	100
Mountain Hemlock										
-71 to -100% CC	0	0							0	0
-41 to -70% CC	3	0							3	0
-16 to -40% CC	2	0							2	0
+15 to -15% CC (Little or No Change)	4,762	100	714	100	508	100	445	100	6,951	100
+16 to +40% CC	8	0	1	0					8	0
+41 to +100% CC	1	0							1	0
Total	4,776	100	715	100	508	100	445	100	6,966	100
Pacific Douglas-Fir										
-71 to -100% CC	3,583	1					0	0	3,583	1
-41 to -70% CC	2,663	1	4	0			2	0	2,669	1
-16 to -40% CC	6,801	2	5	0			1	0	6,807	2
+15 to -15% CC (Little or No Change)	324,753	89	1,453	98			1,613	78	331,147	89
+16 to +40% CC	21,568	6	13	1			390	19	21,980	6
+41 to +100% CC	2,859	1	1	0			73	3	2,935	1
Non-Vegetation Change	1	0							1	0
Cloud or Cloud Shadow	1,766	0							1,793	0
Total	363,995	100	1,475	100			2,079	100	370,913	100
Ponderosa Pine-White Fir										
-71 to -100% CC	87	0					361	1	448	1
-41 to -70% CC	226	1					1,179	2	1,406	2
-16 to -40% CC	219	1					1,196	2	1,416	2
+15 to -15% CC (Little or No Change)	33,029	98			24	100	47,038	90	80,092	93
+16 to +40% CC	239	1					2,039	4	2,278	3
+41 to +100% CC	54	0					234	0	288	0
Cloud or Cloud Shadow	3	0							3	0
Total	33,858	100			24	100	52,048	100	85,930	100
Red Fir										
-71 to -100% CC	149	0	24	0			43	0	233	0
-41 to -70% CC	301	0	105	0	22	0	131	0	559	0
-16 to -40% CC	803	1	528	1	28	0	153	1	1,512	1
+15 to -15% CC (Little or No Change)	130,692	97	50,479	97	22,234	99	28,089	98	234,957	97
+16 to +40% CC	1,627	1	925	2	136	1	183	1	2,876	1
+41 to +100% CC	336	0	18	0	3	0	22	0	379	0
Non-Vegetation Change	0	0					2	0	3	0
Cloud or Cloud Shadow	1,433	1							1,711	1
Total	135,342	100	52,079	100	22,423	100	28,625	100	242,230	100

Table F-2 Acres of Classified Conifer Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Subalpine Conifers										
-71 to -100% CC	0	0							0	0
-41 to -70% CC	5	0							5	0
-16 to -40% CC	59	1							59	1
+15 to -15% CC (Little or No Change)	10,741	99	41	100			130	100	10,911	99
+16 to +40% CC	22	0							22	0
+41 to +100% CC	2	0							2	0
Total	10,829	100	41	100			130	100	10,999	100
Ultramafic Mixed Conifer										
-71 to -100% CC	337	1							337	0
-41 to -70% CC	374	1							378	0
-16 to -40% CC	959	2							977	1
+15 to -15% CC (Little or No Change)	57,298	93					194	100	69,535	92
+16 to +40% CC	1,277	2							1,319	2
+41 to +100% CC	82	0							84	0
Cloud or Cloud Shadow	1,520	2							3,158	4
Total	61,845	100					194	100	75,789	100
Western Juniper										
-71 to -100% CC			0	0	28	0			29	0
-41 to -70% CC	0	0	0	0	549	0	0	0	549	0
-16 to -40% CC	0	0	117	2	3,030	1	10	0	3,157	1
+15 to -15% CC (Little or No Change)	15,998	100	6,917	98	274,791	99	8,615	100	307,001	99
+16 to +40% CC	42	0	23	0	119	0	1	0	186	0
+41 to +100% CC	1	0			17	0	0	0	18	0
Non-Vegetation Change			1	0					1	0
Total	16,042	100	7,059	100	278,534	100	8,626	100	310,941	100
Western White Pine										
-71 to -100% CC	10	0							10	0
-41 to -70% CC	17	0							20	0
-16 to -40% CC	37	1							44	1
+15 to -15% CC (Little or No Change)	6,199	96					4	100	6,904	93
+16 to +40% CC	30	0							38	1
+41 to +100% CC	6	0							6	0
Cloud or Cloud Shadow	186	3							381	5
Total	6,487	100					4	100	7,403	100
White Fir										
-71 to -100% CC	267	0	69	0	140	0	112	0	589	0
-41 to -70% CC	426	0	105	0	659	1	195	0	1,386	1
-16 to -40% CC	921	1	1,366	3	660	1	405	1	3,353	1
+15 to -15% CC (Little or No Change)	92,421	95	51,494	96	46,603	96	38,892	95	232,874	95
+16 to +40% CC	791	1	576	1	299	1	1,076	3	2,748	1
+41 to +100% CC	126	0	25	0	85	0	183	0	420	0
Cloud or Cloud Shadow	2,663	3							3,193	1
Total	97,615	100	53,635	100	48,447	100	40,864	100	244,562	100

Table F-2 Acres of Classified Conifer Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Whitebark Pine										
-41 to -70% CC							1	0	1	0
-16 to -40% CC							6	0	6	0
+15 to -15% CC (Little or No Change)					4,903	100	4,209	100	9,112	100
Non-Vegetation Change							2	0	2	0
Total					4,903	100	4,219	100	9,122	100
All Conifer	1,323,161		793,216		847,228		345,948		3,370,026	

Table F-3 Acres of Classified Hardwood Change by CALVEG Type and National Forest

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Bigleaf Maple (Dogwood)										
-16 to -40% CC	1	5							1	2
+15 to -15% CC (Little or No Change)	27	95					28	93	56	94
+16 to +40% CC							2	7	2	3
Total	29	100					30	100	59	100
Blue Oak										
-41 to -70% CC			3	0					3	0
-16 to -40% CC			4	0					4	0
+15 to -15% CC (Little or No Change)			18,021	100			15	94	18,036	100
+16 to +40% CC			2	0			1	6	3	0
Total			18,030	100			16	100	18,046	100
California Black Oak										
-71 to -100% CC	135	1	5	0					141	0
-41 to -70% CC	199	1	13	0			6	0	217	1
-16 to -40% CC	186	1	7	0			4	0	199	1
+15 to -15% CC (Little or No Change)	16,578	93	6,280	99	44	94	5,962	96	29,353	95
+16 to +40% CC	544	3	60	1	3	6	247	4	866	3
+41 to +100% CC	15	0	1	0					16	0
Cloud or Cloud Shadow	232	1							232	1
Total	17,889	100	6,366	100	47	100	6,219	100	31,024	100
Canyon Live Oak										
-71 to -100% CC	430	1							430	1
-41 to -70% CC	473	1	9	0					484	1
-16 to -40% CC	865	1	6	0					871	1
+15 to -15% CC (Little or No Change)	55,327	93	9,137	100			699	91	67,328	94
+16 to +40% CC	1,966	3	8	0			66	9	2,043	3
+41 to +100% CC	101	0							101	0
Non-Vegetation Change	1	0							1	0
Cloud or Cloud Shadow	142	0							142	0
Total	59,306	100	9,160	100			765	100	71,400	100
Cottonwood-Alder										
+15 to -15% CC (Little or No Change)			219	92	219	100			438	96
+16 to +40% CC			19	8					19	4
Total			238	100	219	100			457	100
Interior Live Oak										
+15 to -15% CC (Little or No Change)			443	100					443	100
Total			443	100					443	100
Mountain Alder										
+15 to -15% CC (Little or No Change)	215	100							215	100
Total	215	100							215	100

Table F-3 Acres of Classified Hardwood Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Oregon White Oak										
-71 to -100% CC	90	0							90	0
-41 to -70% CC	203	1	1	0			4	0	210	1
-16 to -40% CC	161	1					1	0	167	1
+15 to -15% CC (Little or No Change)	21,641	95	334	90			6,965	96	29,360	95
+16 to +40% CC	564	2	34	9			263	4	881	3
+41 to +100% CC	3	0							6	0
Cloud or Cloud Shadow	2	0							112	0
Total	22,664	100	369	100			7,233	100	30,826	100
Quaking Aspen										
-71 to -100% CC					0	0			0	0
-16 to -40% CC					0	0			0	0
+15 to -15% CC (Little or No Change)			665	96	5,682	100	45	89	6,392	99
+16 to +40% CC			28	4			6	11	34	1
Total			693	100	5,683	100	51	100	6,427	100
Red Alder										
+15 to -15% CC (Little or No Change)	0	100							0	100
Total	0	100							0	100
Tanoak (Madrone)										
-71 to -100% CC	120	1							120	1
-41 to -70% CC	141	1							141	1
-16 to -40% CC	379	3							379	3
+15 to -15% CC (Little or No Change)	12,120	86					3	100	12,167	86
+16 to +40% CC	1,208	9							1,209	9
+41 to +100% CC	97	1							98	1
Total	14,065	100					3	100	14,114	100
Tree Chinquapin										
-71 to -100% CC	17	1							17	1
-41 to -70% CC	22	1							22	1
-16 to -40% CC	28	1							28	1
+15 to -15% CC (Little or No Change)	2,884	91							3,061	91
+16 to +40% CC	136	4							136	4
+41 to +100% CC	4	0							4	0
Cloud or Cloud Shadow	79	2							96	3
Total	3,170	100							3,364	100
White Alder										
+15 to -15% CC (Little or No Change)			381	99					381	99
+16 to +40% CC			5	1					5	1
Total			386	100					386	100

Table F-3 Acres of Classified Hardwood Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Willow										
-71 to -100% CC							0	0	0	0
-41 to -70% CC							3	1	3	1
-16 to -40% CC							0	0	0	0
+15 to -15% CC (Little or No Change)	48	99	1	100	30	100	365	99	443	99
Cloud or Cloud Shadow	0	1							0	0
Total	48	100	1	100	30	100	368	100	447	100
Willow-Alder										
-41 to -70% CC							1	0	1	0
-16 to -40% CC							1	0	1	0
+15 to -15% CC (Little or No Change)	83	100					726	99	830	99
+16 to +40% CC							4	1	4	0
Total	83	100					733	100	837	100
Willow-Aspen										
+15 to -15% CC (Little or No Change)	21	100							21	100
Total	21	100							21	100
All HardWood	117,490		35,686		5,978		15,416		178,064	

Table F-4 Acres of Classified Shrub/Chaparral Change by CALVEG Type and National Forest

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Basin Sagebrush										
+15 to -15% CC (Little or No Change)	6,874	100	59,246	98	410,307	100	3,746	100	489,103	100
Shrub/Grass Decrease > 15%	1	0	36	0	183	0	0	0	221	0
Shrub/Grass Increase > 15%			271	0	642	0			913	0
Non-Vegetation Change			678	1	174	0			851	0
Total	6,875	100	60,231	100	411,307	100	3,746	100	491,088	100
Bitterbrush										
+15 to -15% CC (Little or No Change)	10,047	100			103,631	100	12,412	100	126,235	100
Shrub/Grass Decrease > 15%	0	0			119	0	5	0	124	0
Shrub/Grass Increase > 15%	9	0			380	0	10	0	398	0
Non-Vegetation Change					10	0			10	0
Cloud or Cloud Shadow	22	0							22	0
Total	10,078	100			104,139	100	12,427	100	126,789	100
Brewer Oak										
+15 to -15% CC (Little or No Change)	96	100							96	100
Shrub/Grass Increase > 15%	0	0							0	0
Total	97	100							97	100
Ceanothus Mixed Chaparral										
+15 to -15% CC (Little or No Change)			22,773	99			883	99	23,657	99
Shrub/Grass Decrease > 15%			202	1					202	1
Shrub/Grass Increase > 15%			31	0			12	1	43	0
Total			23,006	100			896	100	23,902	100
Coyote Brush										
+15 to -15% CC (Little or No Change)			23	70					23	70
Shrub/Grass Decrease > 15%			10	30					10	30
Total			33	100					33	100
Curleaf Mountain Mahogany										
+15 to -15% CC (Little or No Change)	1,886	100	4,495	99	7,515	100	3,959	99	17,855	99
Shrub/Grass Decrease > 15%					5	0	1	0	6	0
Shrub/Grass Increase > 15%	5	0	30	1	4	0	54	1	94	1
Non-Vegetation Change					3	0			3	0
Total	1,891	100	4,526	100	7,526	100	4,014	100	17,957	100
Greenleaf Manzanita										
+15 to -15% CC (Little or No Change)	10	100							10	100
Total	10	100							10	100
Huckleberry Oak										
+15 to -15% CC (Little or No Change)	15,888	76	0	100			10	100	18,799	76
Shrub/Grass Decrease > 15%	587	3							587	2
Shrub/Grass Increase > 15%	24	0							30	0
Cloud or Cloud Shadow	4,270	21							5,230	21
Total	20,769	100	0	100			10	100	24,647	100

Table F-4 Acres of Classified Shrub/Chaparral Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Low Sagebrush										
+15 to -15% CC (Little or No Change)	1,369	100			143,547	99			144,916	99
Shrub/Grass Decrease > 15%					1	0			1	0
Shrub/Grass Increase > 15%					1	0			1	0
Non-Vegetation Change					874	1			874	1
Total	1,369	100			144,423	100			145,792	100
Lower Montane Mixed Chaparral										
+15 to -15% CC (Little or No Change)	16,336	96					257	97	16,695	96
Shrub/Grass Decrease > 15%	232	1							232	1
Shrub/Grass Increase > 15%	361	2					8	3	402	2
Non-Vegetation Change	0	0							0	0
Cloud or Cloud Shadow	115	1							115	1
Total	17,044	100					265	100	17,444	100
Mixed Alpine Scrub										
+15 to -15% CC (Little or No Change)					15,694	100			15,694	100
Total					15,694	100			15,694	100
Pinemat Manzanita										
+15 to -15% CC (Little or No Change)	3,174	100					1,151	100	4,325	100
Shrub/Grass Decrease > 15%	12	0					4	0	16	0
Total	3,186	100					1,155	100	4,341	100
Rabbitbrush										
+15 to -15% CC (Little or No Change)	384	100					534	100	4,272	100
Shrub/Grass Increase > 15%							2	0	2	0
Total	384	100					536	100	4,275	100
Saltbush										
+15 to -15% CC (Little or No Change)					3	100			3	100
Total					3	100			3	100
Scrub Oak										
+15 to -15% CC (Little or No Change)	3,021	75	9,690	98					12,843	91
Shrub/Grass Decrease > 15%	25	1	151	2					177	1
Shrub/Grass Increase > 15%	20	0	3	0					23	0
Cloud or Cloud Shadow	954	24							1,057	7
Total	4,020	100	9,845	100					14,100	100
Snowbrush										
+15 to -15% CC (Little or No Change)	3,395	70							3,399	70
Shrub/Grass Decrease > 15%	59	1							59	1
Shrub/Grass Increase > 15%	14	0							14	0
Cloud or Cloud Shadow	1,396	29							1,399	29
Total	4,864	100							4,872	100

Table F-4 Acres of Classified Shrub/Chaparral Change by CALVEG Type and National Forest (cont.)

	Klamath		Lassen		Modoc		Shasta-Trinity		All Forests	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Ultramafic Mixed Shrub										
+15 to -15% CC (Little or No Change)			4	100					4	100
Total			4	100					4	100
Unknown Grass (obsolete)										
+15 to -15% CC (Little or No Change)			4	76					4	76
Shrub/Grass Increase > 15%			1	24					1	24
Total			5	100					5	100
Upper Montane Mixed Chaparral										
+15 to -15% CC (Little or No Change)	20,161	96	54,820	98	39,278	96	56,667	98	171,318	97
Shrub/Grass Decrease > 15%	289	1	348	1	216	1	423	1	1,276	1
Shrub/Grass Increase > 15%	247	1	891	2	1,214	3	660	1	3,018	2
Non-Vegetation Change	0	0	40	0	0	0	1	0	41	0
Cloud or Cloud Shadow	221	1							439	0
Total	20,920	100	56,099	100	40,708	100	57,751	100	176,091	100
Upper Montane Mixed Shrub										
+15 to -15% CC (Little or No Change)	63,324	99	19,823	99	8,272	100	6,213	100	99,711	99
Shrub/Grass Decrease > 15%	413	1	9	0			3	0	431	0
Shrub/Grass Increase > 15%	445	1	108	1	2	0	26	0	599	1
Non-Vegetation Change			3	0					3	0
Cloud or Cloud Shadow	28	0							28	0
Total	64,209	100	19,943	100	8,274	100	6,242	100	100,772	100
Wedgeleaf Ceanothus										
+15 to -15% CC (Little or No Change)	12,765	97	3,498	100					17,681	96
Shrub/Grass Decrease > 15%	289	2	9	0					298	2
Shrub/Grass Increase > 15%	19	0							23	0
Cloud or Cloud Shadow	142	1							417	2
Total	13,215	100	3,507	100					18,418	100
Whiteleaf Manzanita										
+15 to -15% CC (Little or No Change)	562	100					29	100	591	100
Total	562	100					29	100	591	100
All Shrub/Chaparral	169,493		177,198		732,074		87,070		1,186,925	

Table F-5 Acres of Verified Change in the Klamath National Forest by Cause and Conifer CALVEG Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Coulter Pine							
-71 to -100% CC		2		4	5	4	15
-41 to -70% CC		56		16	3	12	86
-16 to -40% CC		205		15	9	19	249
+16 to +40% CC			91			47	137
+41 to +100% CC			60			4	65
Total	1	263	151	35	17	87	553
Douglas Fir-Pine							
-71 to -100% CC	182	1		6	4	2	195
-41 to -70% CC	115	17		17	4	6	160
-16 to -40% CC	266	35		28	6	26	361
+16 to +40% CC			317			85	402
+41 to +100% CC			24			4	28
Total	563	53	340	51	15	124	1,147
Douglas Fir-White Fir							
-71 to -100% CC	750	6		13	17	16	802
-41 to -70% CC	405	35		80	44	60	624
-16 to -40% CC	798	82		201	95	162	1,338
+16 to +40% CC			1,363			268	1,631
+41 to +100% CC			183			24	207
Total	1,953	123	1,547	294	156	530	4,603
Eastside Pine							
-71 to -100% CC		2			2		4
-41 to -70% CC		56			6	3	65
-16 to -40% CC		153			14	6	173
+16 to +40% CC			1,156			20	1,176
+41 to +100% CC			6			12	18
Total		211	1,163		22	40	1,436
Gray Pine							
-71 to -100% CC							
-41 to -70% CC							
-16 to -40% CC				2			2
+16 to +40% CC			18				18
Total			18	2			20
Jeffrey Pine							
-71 to -100% CC	302	16		1	12	2	334
-41 to -70% CC	74	18		3	11	13	119
-16 to -40% CC	114	94		3	24	9	244
+16 to +40% CC			423			68	492
+41 to +100% CC			30			5	35
Total	491	129	453	7	46	98	1,223

Table F-5 Acres of Verified Change in the Klamath National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Knobcone Pine							
-71 to -100% CC	43	1					44
-41 to -70% CC	20					2	23
-16 to -40% CC	13	4		2		12	30
+16 to +40% CC			23			24	47
+41 to +100% CC			2			3	4
Total	76	5	25	2		41	148
Lodgepole Pine							
-71 to -100% CC		1					1
-41 to -70% CC		45					45
-16 to -40% CC		76				1	78
+16 to +40% CC			72			11	83
+41 to +100% CC			2				2
Total		123	74			13	209
Mixed Conifer-Fir							
-71 to -100% CC	843	18		57	33	27	979
-41 to -70% CC	600	99		171	85	138	1,093
-16 to -40% CC	988	229		396	158	278	2,050
+16 to +40% CC			2,675		1	431	3,107
+41 to +100% CC			694			118	812
Total	2,431	346	3,370	625	277	992	8,041
Mixed Conifer-Pine							
-71 to -100% CC	1,027	65		8	71	46	1,217
-41 to -70% CC	624	306		56	113	167	1,266
-16 to -40% CC	1,340	814		87	190	368	2,799
+16 to +40% CC			3,313			724	4,036
+41 to +100% CC			438			94	532
Total	2,993	1,184	3,751	151	374	1,399	9,851
Mountain Hemlock							
-71 to -100% CC							
-41 to -70% CC		2		1			3
-16 to -40% CC				2			2
+16 to +40% CC			4			4	8
+41 to +100% CC							1
Total		2	4	3		5	14
Pacific Douglas-Fir							
-71 to -100% CC	2,884	387	2	38	96	177	3,583
-41 to -70% CC	2,023	234	1	77	118	211	2,663
-16 to -40% CC	5,308	454	3	175	395	466	6,801
+16 to +40% CC	2	1	20,272			1,293	21,568
+41 to +100% CC			2,739			120	2,859
Total	10,217	1,075	23,017	290	608	2,267	37,474

Table F-5 Acres of Verified Change in the Klamath National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Ponderosa Pine-White Fir							
-71 to -100% CC		87					87
-41 to -70% CC		226					226
-16 to -40% CC		218				1	219
+16 to +40% CC			222			17	239
+41 to +100% CC			52			2	54
Total		531	274			20	825
Red Fir							
-71 to -100% CC	29	83		27	3	7	149
-41 to -70% CC	42	38		127	17	77	301
-16 to -40% CC	95	97	1	466	33	112	803
+16 to +40% CC			1,368			259	1,627
+41 to +100% CC			297			40	336
Total	166	218	1,666	620	53	494	3,217
Subalpine Conifers							
-71 to -100% CC							
-41 to -70% CC		2		2			5
-16 to -40% CC		27		23		8	59
+16 to +40% CC			12			10	22
+41 to +100% CC			2			1	2
Total		30	13	25		20	88
Ultramafic Mixed Conifer							
-71 to -100% CC	195	95		5	21	20	337
-41 to -70% CC	167	133		15	23	36	374
-16 to -40% CC	252	532		24	51	100	959
+16 to +40% CC			1,027			250	1,277
+41 to +100% CC			64			18	82
Total	614	759	1,091	44	96	424	3,028
Western Juniper							
-41 to -70% CC							
-16 to -40% CC							
+16 to +40% CC			42				42
+41 to +100% CC			1				1
Total			43				44
Western White Pine							
-71 to -100% CC	6	1			3		10
-41 to -70% CC	7	4			4	2	17
-16 to -40% CC	12	6			13	6	37
+16 to +40% CC			22			8	30
+41 to +100% CC			3			3	6
Total	26	11	25		20	20	101

Table F-5 Acres of Verified Change in the Klamath National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
White Fir							
-71 to -100% CC	141	79		32	10	6	267
-41 to -70% CC	107	119		140	24	36	426
-16 to -40% CC	192	227	1	349	56	96	921
+16 to +40% CC			563	1		227	791
+41 to +100% CC			95			31	126
Total	440	425	659	521	90	396	2,531
All Conifer	19,970	5,488	37,684	2,669	1,775	6,968	74,553

Table F-6 Acres of Verified Change in the Klamath National Forest by Cause and Hardwood CALVEG Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Bigleaf Maple (Dogwood)							
-16 to -40% CC						1	1
Total						1	1
California Black Oak							
-71 to -100% CC	63	1		1	60	11	135
-41 to -70% CC	69	9		2	73	45	199
-16 to -40% CC	89	12		15	16	53	186
+16 to +40% CC			440			104	544
+41 to +100% CC			11			4	15
Total	221	22	451	18	150	218	1,080
Canyon Live Oak							
-71 to -100% CC	330	8		2	54	36	430
-41 to -70% CC	285	12		18	98	60	473
-16 to -40% CC	641	19		43	62	101	865
+16 to +40% CC			1,498			468	1,966
+41 to +100% CC			64			38	101
Total	1,256	38	1,562	63	214	702	3,835
Oregon White Oak							
-71 to -100% CC	30	11		2	39	8	90
-41 to -70% CC	20	73		9	69	32	203
-16 to -40% CC	48	20		24	37	33	161
+16 to +40% CC			209			356	564
+41 to +100% CC			2				3
Total	97	104	211	35	145	429	1,021
Tanoak (Madrone)							
-71 to -100% CC	95	9		1	9	6	120
-41 to -70% CC	111	3		2	14	10	141
-16 to -40% CC	275	11		10	54	29	379
+16 to +40% CC			1,066			143	1,208
+41 to +100% CC			76			21	97
Total	482	23	1,142	13	78	209	1,946
Tree Chinquapin							
-71 to -100% CC	11			1	4	1	17
-41 to -70% CC	2	1		2	4	12	22
-16 to -40% CC	9	1		6	1	12	28
+16 to +40% CC			111			24	136
+41 to +100% CC			4				4
Total	22	2	115	9	10	49	207
All Hardwood	2,078	188	3,481	138	597	1,608	8,090

Table F-7 Acres of Verified Change in the Klamath National Forest by Cause and Shrub/Chaparral CALVEG Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Basin Sagebrush							
Shrub/Grass Decrease > 15%		1					1
Total		1					1
Bitterbrush							
Shrub/Grass Decrease > 15%							
Shrub/Grass Increase > 15%			9				9
Total			9				9
Brewer Oak							
Shrub/Grass Increase > 15%							
Total							
Curleaf Mountain Mahogany							
Shrub/Grass Increase > 15%			5				5
Total			5				5
Huckleberry Oak							
Shrub/Grass Decrease > 15%	545	22		11		10	587
Shrub/Grass Increase > 15%			8			16	24
Total	545	22	8	11		26	611
Lower Montane Mixed Chaparral							
Shrub/Grass Decrease > 15%	183	4		11	6	28	232
Shrub/Grass Increase > 15%			300			60	361
Total	183	4	300	11	6	88	593
Pinemat Manzanita							
Shrub/Grass Decrease > 15%		12					12
Total		12					12
Scrub Oak							
Shrub/Grass Decrease > 15%	25						25
Shrub/Grass Increase > 15%			7			12	20
Total	25		7			13	45
Snowbrush							
Shrub/Grass Decrease > 15%	59						59
Shrub/Grass Increase > 15%						14	14
Total	59					14	73
Upper Montane Mixed Chaparral							
Shrub/Grass Decrease > 15%	84	3		4	191	8	289
Shrub/Grass Increase > 15%			213			34	247
Total	84	3	213	4	191	42	536

Table F-7 Acres of Verified Change in the Klamath National Forest by Cause and Shrub/Chaparral CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Upper Montane Mixed Shrub							
Shrub/Grass Decrease > 15%	144	4		214	20	30	413
Shrub/Grass Increase > 15%			363			81	445
Total	144	4	363	214	20	112	857
Wedgeleaf Ceanothus							
Shrub/Grass Decrease > 15%	237			38		14	289
Shrub/Grass Increase > 15%			14			6	19
Total	237		14	38		20	308
All Shrub/Chaparral	1,277	47	920	277	216	314	3,051

Table F-8 Acres of Verified Change in the Lassen National Forest by Cause and Conifer CALVEG Type

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Coulter Pine								
-71 to -100% CC	5	3					3	11
-41 to -70% CC	85	7					8	100
-16 to -40% CC	82	18					82	181
+16 to +40% CC				63			14	77
+41 to +100% CC								
Total	171	28		64			107	370
Eastside Pine								
-71 to -100% CC	6	249			2	7	2	266
-41 to -70% CC	69	538			3	8	7	626
-16 to -40% CC	288	2,909		8	97	65	525	3,891
+16 to +40% CC				2,135			763	2,898
+41 to +100% CC				74			2	76
Total	364	3,696		2,216	101	80	1,299	7,756
Gray Pine								
-41 to -70% CC	1							1
Total	1							1
Jeffrey Pine								
-41 to -70% CC							1	1
-16 to -40% CC							34	34
Total							34	34
Lodgepole Pine								
-71 to -100% CC		7			2		2	12
-41 to -70% CC		12	2		9		3	26
-16 to -40% CC		87	5		71	4	70	236
+16 to +40% CC				91			225	316
+41 to +100% CC				4			3	7
Total		106	7	95	82	4	303	596
Mixed Conifer-Fir								
-71 to -100% CC	24	783			6	8	65	886
-41 to -70% CC	28	1,404			16	44	70	1,561
-16 to -40% CC	27	6,087			201	181	1,110	7,607
+16 to +40% CC				4,324			560	4,885
+41 to +100% CC				228			8	236
Total	79	8,273		4,552	223	234	1,813	15,174
Mixed Conifer-Pine								
-71 to -100% CC		76	4				14	95
-41 to -70% CC	2	117	4				26	150
-16 to -40% CC	9	680	17		1	28	334	1,070
+16 to +40% CC				1,271			158	1,429
+41 to +100% CC				91			1	92
Total	11	873	25	1,362	1	29	534	2,836

Table F-8 Acres of Verified Change in the Lassen National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Mountain Hemlock								
+16 to +40% CC				1				1
Total				1				1
Pacific Douglas-Fir								
-41 to -70% CC							4	4
-16 to -40% CC							5	5
+16 to +40% CC				13				13
+41 to +100% CC				1				1
Total				14			8	23
Red Fir								
-71 to -100% CC		19				4	1	24
-41 to -70% CC		27				73	5	105
-16 to -40% CC		244				179	105	528
+16 to +40% CC				844			81	925
+41 to +100% CC				16			2	18
Total		290		859		256	194	1,600
Western Juniper								
-71 to -100% CC								
-41 to -70% CC								
-16 to -40% CC	107						10	117
+16 to +40% CC				6			17	23
Total	107			6			28	141
White Fir								
-71 to -100% CC		56				8	5	69
-41 to -70% CC		81				16	8	105
-16 to -40% CC		1,228				30	108	1,366
+16 to +40% CC				504			71	576
+41 to +100% CC				25				25
Total		1,365		529		53	193	2,141
All Conifer	734	14,631	32	9,697	407	657	4,515	30,673

Table F-9 Acres of Verified Change in the Lassen National Forest by Cause and Hardwood CALVEG Type

	Fire	Harvest	Regrowth	Pest-Related	Unverified Cause	All Causes
Blue Oak						
-41 to -70% CC	1				2	3
-16 to -40% CC					4	4
+16 to +40% CC			1		1	2
Total	1		1		7	9
California Black Oak						
-71 to -100% CC		4				5
-41 to -70% CC	4	5			4	13
-16 to -40% CC	3	2			2	7
+16 to +40% CC			8		52	60
+41 to +100% CC			1			1
Total	6	11	10		60	87
Canyon Live Oak						
-41 to -70% CC	6				3	9
-16 to -40% CC	3				3	6
+16 to +40% CC			7		2	8
Total	9		7		8	23
Cottonwood-Alder						
+16 to +40% CC			5		14	19
Total			5		14	19
Oregon White Oak						
-41 to -70% CC		1				1
+16 to +40% CC					34	34
Total		1			34	35
Quaking Aspen						
+16 to +40% CC			13		16	28
Total			13		16	28
White Alder						
+16 to +40% CC					5	5
Total					5	5
All Hardwood	16	12	35		143	206

Table F-10 Acres of Verified Change in the Lassen National Forest by Cause and Shrub/Chaparral CALVEG Type

	Fire	Harvest	Develop- ment	Regrowth	Pest- Related	Other	Unverified Cause	All Causes
Basin Sagebrush								
Shrub/Grass Decrease > 15%	8	9					20	36
Shrub/Grass Increase > 15%				60			210	271
Total	8	9		60			230	307
Ceanothus Mixed Chaparral								
Shrub/Grass Decrease > 15%	131	1				1	69	202
Shrub/Grass Increase > 15%				23			8	31
Total	131	1		23		1	77	233
Coyote Brush								
Shrub/Grass Decrease > 15%							10	10
Total							10	10
Curleaf Mountain Mahogan								
Shrub/Grass Increase > 15%				10			21	30
Total				10			21	30
Scrub Oak								
Shrub/Grass Decrease > 15%	123						28	151
Shrub/Grass Increase > 15%				1			2	3
Total	123			1			30	154
Unknown Grass (obsolete)								
Shrub/Grass Increase > 15%				1				1
Total				1				1
Upper Montane Mixed Chap								
Shrub/Grass Decrease > 15%	61	196	1		13	21	55	348
Shrub/Grass Increase > 15%				754			137	891
Total	61	196	1	754	13	21	192	1,239
Upper Montane Mixed Shru								
Shrub/Grass Decrease > 15%		4					6	9
Shrub/Grass Increase > 15%				20			88	108
Total		4		20			94	117
Wedgeleaf Ceanothus								
Shrub/Grass Decrease > 15%	9							9
Total	9							9
All Shrub/Chaparral	332	210	1	870	13	22	654	2,101

Table F-11 Acres of Verified Change in the Modoc National Forest by Cause and Conifer CALVEG Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Eastside Pine							
-71 to -100% CC	528	25			4	8	565
-41 to -70% CC	991	632	1	22	40	134	1,820
-16 to -40% CC	1,713	1,144	4	51	48	310	3,271
+16 to +40% CC	2		11,449		65	441	11,957
+41 to +100% CC			327		3	1	332
Total	3,235	1,801	11,781	73	161	895	17,945
Lodgepole Pine							
-41 to -70% CC	1						1
-16 to -40% CC							
+16 to +40% CC			4			3	8
+41 to +100% CC						2	2
Total	1		4			5	10
Mixed Conifer-Fir							
-71 to -100% CC		210			1	4	216
-41 to -70% CC		2,456		13	1	98	2,567
-16 to -40% CC		2,732		15	9	151	2,907
+16 to +40% CC			1,313		10	324	1,647
+41 to +100% CC			165		7	3	175
Total		5,399	1,479	28	27	579	7,512
Mixed Conifer-Pine							
-41 to -70% CC	6						6
-16 to -40% CC	18						18
+16 to +40% CC			300		31	13	343
+41 to +100% CC			50		19		69
Total	24		350		50	13	436
Red Fir							
-41 to -70% CC						22	22
-16 to -40% CC						28	28
+16 to +40% CC			103			33	136
+41 to +100% CC			3				3
Total			106			82	188
Western Juniper							
-71 to -100% CC	21				6	1	28
-41 to -70% CC	447	4			75	23	549
-16 to -40% CC	2,844	9			85	93	3,030
+16 to +40% CC			73		2	44	119
+41 to +100% CC			2			15	17
Total	3,311	14	75		168	175	3,744

Table F-11 Acres of Verified Change in the Modoc National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
White Fir							
-71 to -100% CC		138				2	140
-41 to -70% CC	19	627		8		6	659
-16 to -40% CC	10	591		50		8	660
+16 to +40% CC			262			37	299
+41 to +100% CC			84			1	85
Total	29	1,357	346	58		54	1,844
All Conifer	6,600	8,570	14,141	160	406	1,803	31,680

Table F-12 Acres of Verified Change in the Modoc National Forest by Cause and Hardwood CALVEG Type

	Harvest	Regrowth	All Causes
California Black Oak			
+16 to +40% CC		3	3
Total		3	3
Quaking Aspen			
-71 to -100% CC			
-16 to -40% CC			
Total	1		1
All Hardwood	1	3	4

Table F-13 Acres of Verified Change in the Modoc National Forest by Cause and Shrub/Chaparral CALVEG Type

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Basin Sagebrush						
Shrub/Grass Decrease > 15%	95	57		10	21	183
Shrub/Grass Increase > 15%			542	45	55	642
Total	95	57	542	56	76	826
Bitterbrush						
Shrub/Grass Decrease > 15%	113			5	2	119
Shrub/Grass Increase > 15%			364		16	380
Total	113		364	5	18	499
Curleaf Mountain Mahogany						
Shrub/Grass Decrease > 15%		5				5
Shrub/Grass Increase > 15%			2		1	4
Total		5	2		1	8
Low Sagebrush						
Shrub/Grass Decrease > 15%						1
Shrub/Grass Increase > 15%			1			1
Total			1			2
Upper Montane Mixed Chaparral						
Shrub/Grass Decrease > 15%	90	24		27	75	216
Shrub/Grass Increase > 15%			1,051	19	143	1,214
Total	90	24	1,051	46	218	1,429
Upper Montane Mixed Shrub						
Shrub/Grass Increase > 15%					2	2
Total					2	2
All Shrub/Chaparral	297	87	1,961	106	316	2,766

Table F-14 Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Conifer CALVEG Type

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Coulter Pine							
-71 to -100% CC		1					1
-41 to -70% CC		14					14
-16 to -40% CC		38				2	40
+16 to +40% CC			19			38	57
+41 to +100% CC			3				4
Total		52	22			41	115
Douglas Fir-Pine							
+16 to +40% CC			2			6	8
+41 to +100% CC							
Total			2			6	8
Eastside Pine							
-71 to -100% CC	15	110			5	27	158
-41 to -70% CC	99	630		7	28	137	901
-16 to -40% CC	148	468		98	62	123	899
+16 to +40% CC			4,373			345	4,718
+41 to +100% CC			649			26	675
Total	262	1,208	5,022	105	96	659	7,352
Gray Pine							
+16 to +40% CC						21	21
Total						21	21
Knobcone Pine							
-71 to -100% CC					10	10	20
-41 to -70% CC					7	25	32
-16 to -40% CC		3			23	37	62
+16 to +40% CC			42			11	54
+41 to +100% CC			1			1	2
Total		3	43		40	85	171
Lodgepole Pine							
-71 to -100% CC		1			16	2	20
-41 to -70% CC		27			48	10	85
-16 to -40% CC		20			22	5	47
+16 to +40% CC			444			6	450
+41 to +100% CC			55				55
Total		48	499		87	23	657
Mixed Conifer-Fir							
-71 to -100% CC	42	37			12	19	109
-41 to -70% CC	12	27			37	42	119
-16 to -40% CC	5	28			76	109	217
+16 to +40% CC			989		1	97	1,087
+41 to +100% CC			227			6	233
Total	59	92	1,216		125	273	1,765

Table F-14 Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Mixed Conifer-Pine							
-71 to -100% CC	13	161			75	34	283
-41 to -70% CC	6	597			120	152	875
-16 to -40% CC	13	741			525	270	1,549
+16 to +40% CC			2,220		14	1,235	3,469
+41 to +100% CC			385		3	46	435
Total	32	1,499	2,605		737	1,737	6,610
Pacific Douglas-Fir							
-71 to -100% CC							
-41 to -70% CC						2	2
-16 to -40% CC							1
+16 to +40% CC			382			8	390
+41 to +100% CC			72				73
Total		1	455			11	466
Ponderosa Pine-White Fir							
-71 to -100% CC		324			11	26	361
-41 to -70% CC		1,075			9	96	1,179
-16 to -40% CC		1,048			10	139	1,196
+16 to +40% CC			1,458		27	553	2,039
+41 to +100% CC			196		6	31	234
Total		2,447	1,655		63	845	5,009
Red Fir							
-71 to -100% CC		25			17	2	43
-41 to -70% CC		114			14	4	131
-16 to -40% CC		54			79	21	153
+16 to +40% CC			158			25	183
+41 to +100% CC			19			3	22
Total		192	178		109	54	533
Western Juniper							
-41 to -70% CC							
-16 to -40% CC					9		10
+16 to +40% CC			1				1
+41 to +100% CC							
Total			1		9		11
White Fir							
-71 to -100% CC		66			29	16	112
-41 to -70% CC		113			39	42	195
-16 to -40% CC		122			211	72	405
+16 to +40% CC			911			165	1,076
+41 to +100% CC			174			10	183
Total		302	1,085		279	306	1,971

Table F-14 Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Conifer CALVEG Type (cont.)

	Fire	Harvest	Regrowth	Pest-Related	Other	Unverified Cause	All Causes
Whitebark Pine							
-41 to -70% CC					1		1
-16 to -40% CC					6		6
Total					7		7
All Conifer	353	5,845	12,782	115	1,543	4,059	24,697

Table F-15 Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Hardwood CALVEG Type

	Harvest	Regrowth	Unverified Cause	All Causes
Bigleaf Maple (Dogwood)				
+16 to +40% CC		2		2
Total		2		2
Blue Oak				
+16 to +40% CC			1	1
Total			1	1
California Black Oak				
-41 to -70% CC	1		5	6
-16 to -40% CC			4	4
+16 to +40% CC		11	237	247
Total	1	11	246	257
Canyon Live Oak				
+16 to +40% CC		3	64	66
Total		3	64	66
Oregon White Oak				
-41 to -70% CC			4	4
-16 to -40% CC				1
+16 to +40% CC			263	263
Total	1		267	268
Quaking Aspen				
+16 to +40% CC			6	6
Total			6	6
Willow				
-71 to -100% CC				
-41 to -70% CC			3	3
-16 to -40% CC				
Total			4	4
Willow-Alder				
-41 to -70% CC	1			1
-16 to -40% CC	1			1
+16 to +40% CC		2	2	4
Total	2	2	2	6
All Hardwood	4	17	589	609

Table F-16 Acres of Verified Change in the Shasta-Trinity National Forest by Cause and Shrub/Chaparral CALVEG Type

	Fire	Harvest	Regrowth	Other	Unverified Cause	All Causes
Basin Sagebrush						
Shrub/Grass Decrease > 15%						
Total						
Bitterbrush						
Shrub/Grass Decrease > 15%		4			1	5
Shrub/Grass Increase > 15%			1		8	10
Total		4	1		10	15
Ceanothus Mixed Chaparral						
Shrub/Grass Increase > 15%					12	12
Total					12	12
Curleaf Mountain Mahogany						
Shrub/Grass Decrease > 15%		1				1
Shrub/Grass Increase > 15%			22		33	54
Total		1	22		33	55
Lower Montane Mixed Chaparral						
Shrub/Grass Increase > 15%			3		5	8
Total			3		5	8
Pinemat Manzanita						
Shrub/Grass Decrease > 15%				4		4
Total				4		4
Rabbitbrush						
Shrub/Grass Increase > 15%			2			2
Total			2			2
Upper Montane Mixed Chaparral						
Shrub/Grass Decrease > 15%	158	145		69	52	423
Shrub/Grass Increase > 15%			232	22	406	660
Total	158	145	232	91	457	1,083
Upper Montane Mixed Shrub						
Shrub/Grass Decrease > 15%		1			2	3
Shrub/Grass Increase > 15%			2		23	26
Total		1	2		25	28
All Shrub/Chaparral	158	151	263	95	542	1,208