

Ecological Assessment of Potential Wilderness Areas in the Klamath~Siskiyou Region of North Western California

Chris Trudel, Curtice Jacoby, Karin Riley-Thron, Per Tillisch

LEGACY – The Landscape Connection, 830 G Street Suite 220, Arcata, CA 95521,
www.legacy-tlc.org, (707) 826-9408

Project made possible by:



Funding from: World Wildlife Fund - Klamath Siskiyou Program, Dr. Dominick DellaSala, Ashland, Oregon.

Hardware and software support from: Conservation Technology Support Program, Environmental Systems Research Institute, Redlands, California.

Introduction

U.S. Senator Barbara Boxer and U.S. Representative Mike Thompson are considering forty-six potential wilderness areas (PWAs) in the Klamath-Siskiyou region of northwestern California for wilderness designation. The northern California portion of the Klamath-Siskiyou Ecoregion contains many unprotected roadless areas of varying sizes and ecological importance. Recently, Strittholt and DellaSala (2001) published a paper in *Conservation Biology* generally documenting the importance of roadless areas in the Klamath-Siskiyou Ecoregion and providing ecological attribute information on roadless areas greater than 1,000 acres. The California Wild Heritage Campaign (CWHC) is now proposing legislation to protect millions of acres of land that are mapped as PWAs across the state and in the northern California portion of the Klamath-Siskiyou ecoregion. However, the PWAs mapped by CWHC have no documented ecological attribute information from which to support their inclusion in the proposed wilderness legislation.

The purpose of this report is to document the individual contribution of the PWAs to a regional reserve design for the California portion of the Klamath-Siskiyou region. The information contained in this report documents the important ecological contribution the PWAs make to the regional reserve system of the Klamath-Siskiyou Ecoregion in northwestern California. The information will be used to assist the CWHC, conservation groups, and legislators in documenting the importance of PWAs in the Klamath-Siskiyou ecoregion and ensuring their inclusion in the proposed wilderness legislation.

In order to qualify as a PWA, the area must be roadless and on public lands. Roadless areas are important in maintaining biodiversity in the Klamath-Siskiyou Ecoregion (Strittholt and DellaSala 2001). The review of the ecological effects of roads by Trombulak and Frissell (2000) documents the immense ecological impacts of roads on natural systems. The impacts of roads vary from direct habitat loss due to removal of vegetation during road construction, to an increase in animal mortality from automobile collisions, increased access to hunters, trappers, and poachers, to a long-term disruption of the physical environment through fragmentation of both the terrestrial and aquatic ecosystems and introduction of invasive exotic species. Moreover, roads can elevate fire risks due to the association between greater vehicle access and increased risk of fire from accidental or arson related fires (DellaSala et al. 1995). The Klamath-Siskiyou ecoregion has nearly 40,000 miles of forest roads, enough to make more than 65 roundtrips between Medford to Portland (Strittholt and DellaSala 2001). Given the negative effects of roads on ecological systems and the importance of roadless areas to the conservation of biodiversity, it is imperative that these last remaining roadless areas be given adequate protection.

Methods:

The ecological attribute information used in the Strittholt and DellaSala (2001) study of roadless areas was transferred to the northern California portion of the Klamath-Siskiyou ecoregion PWAs provided by the CWHC. Presence of salmonid species was included as a special element and the Holland community vegetation types from the California Gap

Analysis Project (GAP) were used as a substitute to the physical habitat types used by Strittholt and DellaSala (2001) for ecosystem representation.

The analysis was performed using both ArcInfo 8.1.2 and ArcView 3.2 GIS software. The PWAs that intersected with the Klamath-Siskiyou ecoregion boundary were selected from the northern California PWAs coverage and an overlay analysis was performed using each variable. For each PWA and unit the attributes were summarized and recorded in an Excel spread sheet.

Data Sources and Limitations

The spatial data used in this assessment was acquired from a variety of government sources, including the U.S. Forest Service (USFS) and California Department of Fish and Game (CDFG). Themes and sources used can be seen in Appendix A. This data represents the best available information for the time period of this analysis, given the timeline and budget constraints. Due to a delay in a data request from the Siskiyou National Forest (SNF), PWAs for the SNF were analyzed without the inclusion of serpentine, Port-Orford-Cedar (POC), and Salmonid presence. Also, an updated Salmonid presence layer exists (other than which was used) for Six Rivers National Forest (SRF), but needs some processing before it can be incorporated into this assessment.

This report catalogues attributes based on each of the following 6 special elements, 2 representation variables, and 2 ecosystem processes modeled from Strittholt and DellaSala (2001).

Special Element

- ? Late Seral Forests – total acres and percent of each PWA and Unit
- ? Salmonid Presence – total miles of stream occupied by PWA and Unit
- ? Port Orford Cedar (POC) – acres of infected and non-infected POC by PWA and Unit
- ? California Natural Diversity Database (CNDDDB) – total number of element occurrences per category and combined (vertebrate, invertebrate, plant, aquatic animal, and terrestrial and aquatic communities) for each PWA and Unit
- ? Key Watersheds – total acres and percent of each PWA and Unit
- ? Serpentine Geology – total acres and percent of each PWA and Unit

Representation of Community Types

- ? Elevation – mean in feet for each PWA and Unit
- ? Holland Community Type - total acres of each type by PWA.

Ecosystem Process

- ? Size – total acres by PWA and Unit
- Elevation – range in feet for each PWA and Unit

Obtaining complete and accurate spatial information for large geographic areas is difficult and some limitations in the data exist. For example, the California Natural Diversity Database (CNDDDB) contains locations of element occurrences (EOs) or point locations of species, which have special conservation value (i.e. rare, threatened, endangered, or of special concern). Most surveys only occur in areas with planned management activities and near roads, however, because the PWAs are mostly roadless

these areas have not had much survey effort. A PWA without EOs may indicate a lack in survey effort and not that no EOs exist in the PWA.

Late-seral forest data were derived from satellite imagery and were defined as a 30x30-meter area covered by trees with an average size greater than 24 inches diameter at breast height (dbh). Due to the difficulty in using satellite imagery to map tree size, the data may underestimate the amount of actual late-seral forest on the ground.

The Holland classification of terrestrial natural communities provided a basis for agencies to protect and manage rare vegetation throughout California. See Appendix B for a list of Holland types found in the Klamath-Siskiyou with their corresponding rarity ratings and percent representation classes. The fundamental units of Holland’s classification, “natural communities”, are defined in terms of habitat, geography, elevation, physiognomy and/or vegetation. The primary shortcomings of the Holland classification are: 1) the lack of uniform criteria in distinguishing the “community” as a fundamental unit, 2) overlapping community descriptions, and 3) uneven resolution with regard to the scale of vegetation that defines each community (Keeler-Wolf 1993, cited in Sawyer and Keeler-Wolf 1995). Regardless of its shortcomings, Holland’s system provides a useful model for identifying and interpreting patterns of diversity across the landscape.

RESULTS

Based on our mapping and analysis of 46 PWAs (Table 1), we describe the attributes for each PWA as a basis for documenting their top ecological attributes for inclusion in wilderness legislation (Appendix C). While all remaining roadless areas warrant protection, this report provides detailed information on the top ecological attributes of importance thereby laying the scientific groundwork for their inclusion in wilderness protections.

Table 1. Potential Wilderness Areas and acreage’s within the Klamath Siskiyou ecoregion organized by their current categorical status in the proposed wilderness legislation. Official CWHC names for PWAs may be different from what is shown here.

PWA Name and CWHC Status	Acres
Primary Areas	
Trinity Alps	170,055
Marble Mountain	135,562
Siskiyou	135,162
Red Buttes	61,417
Snow Mountain	48,942
Yolla Bolly Middle Eel	46,376
Yuki	38,608
Russian	33,041
Pattison	31,011
Underwood	16,127
Sanhedrin Mountain	10,943
Mt. Lassic	10,487
Mad River Buttes	6,511
Secondary Areas	
Girard Ridge	42,218

Chinquapin	26,130
South Fork Trinity	22,671
Mount Eddy	18,224
Chanchellula	7,825
Castle Crags	7,433
Areas With No Focus	
Backbone	23,690
Devil's Rock	23,630
North Fork Eel	20,478
Beegum	19,331
Panther	13,405
Bonanza King	13,302
Eagle	8,522
Mount Shasta	6,152
Unknown Status	
Grindstone	51,585
North Fork Smith	38,189
Black Butte	24,753
Thomes Creek	20,117
Tom Martin	16,611
Deer Mountain	14,998
Condrey Mountain	14,840
Horse Mountain	12,737
China Mountain	11,358
Soda Mountain	10,709
East Fork Mountain	10,075
Ship Mountain	9,642
Shelly Creek	8,675
Cant Hook Mountain	6,034
Kelly Peak	5,636
Rowdy Creek	5,364
Fox Ridge	5,311
Donomore Peak	1,284
Kalmiopsis	1,107

* Areas with unknown status are unknown due to conflicts between PWA names in the current PWA GIS coverage and those currently being used by the CWHC.

Backbone Potential Wilderness Area

Shasta-Trinity National Forest
 Size = 23,690 acres
 Minimum Elevation = 1,066 ft
 Maximum Elevation = 4,990 ft
 Elevation Range = 3,924 ft
 Mean Elevation = 2,304 ft

Backbone PWA has the eighth lowest mean elevation of the PWAs. There are 6,128 acres of late seral forest or 26% of the total area and 84 acres of Permanently flooded

Lacustrine Habitat. Within Backbone PWA, the Natural Diversity Database has identified 4 state or global rank rare species occurrences consisting of 2 animal species, 1 plant species, and 1 aquatic species. Backbone PWA contains 1 threatened rare and 1 rare Holland community types. It also contains 7 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 1,972 acres of Black Oak Forest (8%)
2. 10,812 acres of Canyon Live Oak Forest (22%)
3. 6,468 acres of Coast Range Mixed Coniferous Forest (15%)
4. 126 acres of Knobcone Pine Forest (3%)
5. 3,325 acres of Mixed Evergreen Forest (15%)
6. 154 acres of Oregon Oak Woodland (S3.3, 3%)
7. 749 acres of Serpentine Foothill Pine-Chaparral Woodland (S3.2, 3%)

Beegum Potential Wilderness Area

Shasta-Trinity National Forest and Bureau of Land Management

Size = 19,331 acres

Minimum Elevation = 1,345 ft

Maximum Elevation = 4,875 ft

Elevation Range = 3,530 ft

Mean Elevation = 3,167 ft

Beegum PWA supplies connectivity between Chanchelluia Wilderness and Yolla Bolly Wilderness. There are 3,935 acres of late seral forest or 20% of the total area. Salmon use a total of 15 miles of the streams, the tenth greatest amount of occupied salmonid habitat of the PWAs. There are 6,361 acres of serpentine or 33% of the area. Beegum PWA has the ninth largest amount of serpentine geology of the PWAs. Within Beegum PWA Natural Diversity Database has identified 3 state or global rank rare species occurrences consisting of 2 plant species and 1 aquatic species. Beegum PWA contains 1 threatened rare and 1 non-ranked Holland community types. It also contains 10 types with less than 25% and one with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 3,847 acres of Black Oak Forest (8%)
2. 76 acres of Chamise Chaparral (22%)
3. 2,597 acres of Coast Range Mixed Coniferous Forest (15%)
4. 3,395 acres of Coast Range Ponderosa Pine Forest (NR, 23%)
5. 100 acres of Foothill Pine-Oak Woodland (3%)
6. 32 acres of Mixed Evergreen Forest (15%)
7. 2,778 acres of Mixed Montane Chaparral (26%)
8. 431 acres of Montane Manzanita Chaparral (11%)
9. 53 acres of Non Serpentine Foothill Pine Woodland (8%)
10. 17 acres of Northern Mixed Chaparral (8%)
11. 5,989 acres of Serpentine Foothill Pine-Chaparral Woodland (S3.2, 3%)

Black Butte Potential Wilderness Area

Mendocino National Forest

Size = 24,753 acres

Minimum Elevation = 1,640 ft

Maximum Elevation = 5,696 ft

Elevation Range = 4,055 ft

Mean Elevation = 3,645 ft

There are 5,473 acres of late seral forest or 22 % of the total area. Salmonid species use a total of 13 miles of the streams. In Black Butte PW there are 600 acres of serpentine or 2 %. 24,665 acres of Black Butte PWA are located in a designated Northwest Forest Plan Key Watershed or 100 % of the total area. This PWA contains the eighth largest amount of Key Watershed acreage of the PWAs. Within Black Butte PWA the Natural Diversity Database has identified 5 state or global rank rare species occurrences consisting of 4 animal species and 1 aquatic species. Black Butte contains 1 very threatened endangered, 1 threatened rare, and 1 rare Holland community types. It also contains 8 types with less than 25% and 1 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 1,741 acres of Black Oak Forest (8%)
2. 8,267 acres of Coast Range Mixed Coniferous Forest (15%)
3. 1,156 acres of Interior Live Oak Forest (4%)
4. 1,012 acres of Jeffrey Pine Forest (22%)
5. 3,630 acres of Mixed North Slope Cismontane Woodland (S3.2, 2%)
6. 7,561 acres of Oregon Oak Woodland (S3.3, 3%)
7. 96 acres of Red Fir Forest (48%)
8. 784 acres of Sierran Mixed Coniferous Forest (9%)
9. 124 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Bonanza King Potential Wilderness Area

Shasta-Trinity National Forest

Size = 13,302 acres

Minimum Elevation = 2,779 ft

Maximum Elevation = 7,009 ft

Elevation Range = 4,229 ft

Mean Elevation = 4,894 ft

There are 2,712 acres of late seral forest or 20 % of the total area. In Bonanza King PW there is 3,857 acres of serpentine or 29 %. Bonanza King PWA contains 1 very threatened endangered Holland community types. It also contains 4 types with less than 25% and 1 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 3,093 acres of Coast Range Mixed Coniferous Forest (15%)
2. 2,792 acres of Mixed Montane Chaparral (26%)
3. 231 acres of Montane Manzanita Chaparral (11%)
4. 2,550 acres of Sierran Mixed Coniferous Forest (9%)
5. 3,541 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Can't Hook Mountain Potential Wilderness Area

Six Rivers National Forest

Size = 6,034 acres

Minimum Elevation = 115 ft

Maximum Elevation = 2,723 ft

Elevation Range = 2,608 ft

Mean Elevation = 1,255 ft

Can't Hook Mountain PWA has the lowest mean elevation of the PWAs. Can't Hook Mountain PWA has 1,392 acres of late seral forest or 23 % of the total area. There is 2,849 acres of Port Orford cedar with 682 acres being infected with the root rot disease. Can't Hook Mountain PWA has the fifth largest acreage of non-diseased Port Orford Cedars of the PWAs Salmonid species use a total of 8 miles of the streams. In Can't Hook Mountain PW there are 2,702 acres of serpentine or 45 %. 6,034 acres of Can't Hook Mountain PWA are located in a designated Northwest Forest Plan Key Watershed or 100 % of the total area. Within Can't Hook Mountain PWA, Natural Diversity Database has identified 4 state or global rank rare species occurrences consisting of 2 plant species and 2 aquatic species. Can't Hook Mountain PWA contains 1 very endangered and 1 threatened rare Holland community types. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 3,348 acres of Coast Range Mixed Coniferous Forest (15%)
2. 63 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
3. 794 acres of Tan Oak Forest (7%)
4. 1,412 acres of Upland Redwood Forest (S2.3, 13%)

Castle Crags Potential Wilderness Area

Shasta-Trinity National Forest

Size = 7,433 acres

Minimum Elevation = 4,800 ft

Maximum Elevation = 7,067 ft

Elevation Range = 2,267 ft

Mean Elevation = 5,866 ft

Castle Crags PWA has 1,111 acres of late seral forest or 15 % of the total area. In Castle Crags PW there are 30 acres of serpentine. Within Castle Crags PWA the Natural Diversity Database has identified 7 state or global rank rare species occurrences consisting of 1 animal species, 5 plant species, and 1 aquatic species. Castle Crags PWA contains 1 threatened endangered, 1 threatened rare, 1 rare and 1 non-ranked Holland community types. It also contains 1 types with less than 25% and 3 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 1,336 acres of Huckleberry Oak Chaparral (S3.3, 38%)
2. 958 acres of Jeffrey Pine-Fir Forest (30%)
3. 882 acres of Montane Ceanothus Chaparral (NR, 14%)
4. 461 acres of Montane Meadow (S3.2, 27%)
5. 1,823 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)

Chanchellula Potential Wilderness Area

Shasta-Trinity National Forest

Size = 7,825 acres

Minimum Elevation = 2,664 ft

Maximum Elevation = 6,168 ft

Elevation Range = 3,504 ft

Mean Elevation = 3,719 ft

Chanchellula PWA has 3,356 acres of late seral forest or 43 % of the total area.

Salmonid species use a total of 9 miles of the streams. Chanchellula PWA contains 1 threatened rare and 1 rare Holland community types. It also contains 7 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 150 acres of Black Oak Forest (8%)
2. 277 acres of Chamise Chaparral (22%)
3. 3,567 acres of Coast Range Mixed Coniferous Forest (15%)
4. 3,446 acres of Mixed Evergreen Forest (15%)
5. 105 acres of Montane Manzanita Chaparral (11%)
6. 93 acres of Oregon Oak Woodland (S3.3, 3%)
7. 121 acres of Serpentine Foothill Pine-Chaparral Woodland (S3.2, 3%)

China Mountain Potential Wilderness Area

Klamath and Shasta-Trinity National Forests

Size = 11,358 acres

Minimum Elevation = 4,170 ft

Maximum Elevation = 8,520 ft

Elevation Range = 4,350 ft

Mean Elevation = 6,801 ft

China Mountain PWA has 488 acres of late seral forest or 4 % of the total area. In China Mountain PWA there are 6,621 acres of serpentine or 58 %. China Mountain PWA has the eighth most serpentine of the PWAs. Within China Mountain, PWA Natural Diversity Database has identified 24 state or global rank rare species occurrences, the seventh most occurrences of all the PWAs. They consist of 1 animal species, 13 plant species, 4 aquatic species, and 6 terrestrial communities. China Mountain PWA contains 2 threatened extremely endangered and 1 threatened rare Holland community types. It also contains 3 types with less than 25% and 2 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 355 acres of Great Basin Woodlands (11%)
2. 24 acres of Jeffrey Pine Forest (22%)
3. 1,590 acres of Jeffrey Pine-Fir Forest (30%)
4. 5,452 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
5. 18 acres of Siskyou Enriched Coniferous Forest (S1.2, 44%)
6. 3,817 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Chinquapin Potential Wilderness Area

Shasta-Trinity National Forest

Size = 26,130 acres

Minimum Elevation = 2,336 ft

Maximum Elevation = 5,984 ft

Elevation Range = 3,648 ft

Mean Elevation = 3,740 ft

Chinquapin PWA along with South Fork Trinity PWA is important in supplying connectivity between Yolla Bolly Middle Eel PWA and the mainstem of the Trinity River. Chinquapin PWA has 12,991 acres of late seral forest or 50 % of the total area, the sixth largest late seral forest acreage of the PWAs. Salmonid species use a total of 22 miles of the streams, the eighth greatest amount of occupied salmonid habitat of the PWAs. In Chinquapin PWA there are 377 acres of serpentine or 1 %. 26,103 acres of Chinquapin PWA are located in a designated Northwest Forest Plan Key Watershed or 100 % of the total area. This PWA contains the sixth largest Key Watershed acreage of the PWAs. Within Chinquapin PWA, the Natural Diversity Database has identified 10 state or global ranked rare species occurrences consisting of 7 animal species, 2 plant species, and 1 terrestrial community. Chinquapin PWA contains 1 very threatened endangered Holland community types. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 110 acres of Black Oak Forest (8%)
2. 24,343 acres of Coast Range Mixed Coniferous Forest (15%)
3. 283 acres of Mixed Evergreen Forest (15%)
4. 1,394 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Condrey Mountain Potential Wilderness Area

Klamath and Rogue River National Forests

Size = 14,840 acres

Minimum Elevation = 2,083 ft

Maximum Elevation = 7,093 ft

Elevation Range = 5,010 ft

Mean Elevation = 4,961 ft

Condrey Mountain PWA supplies connectivity between the Siskiyou Wilderness and the Siskiyou Crest. Condrey Mountain PWA has 5,968 acres of late seral forest or 40 % of the total area. Salmonid species use a total of 8 miles of the streams. In Condrey Mountain PWA there are 584 acres of serpentine or 4 %. The Natural Diversity Database has identified 12 occurrences of California State or globally ranked rare species, the tenth most occurrences of all the PWAs. Within Condrey Mountain there are 4 animal species and 8 plant species. Condrey Mountain PWA contains 2 threatened extremely endangered, 1 very threatened endangered, and 1 threatened rare Holland community types. It also contains 3 types with less than 25% and 2 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 3,263 acres of Coast Range Mixed Coniferous Forest (15%)
2. 816 acres of Montane Meadow (S3.2, 27%)

3. 582 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
4. 4,905 acres of Sierran Mixed Coniferous Forest (9%)
5. 3,925 acres of Siskyou Enriched Coniferous Forest (S1.2, 44)
6. 60 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Deer Mountain Potential Wilderness Area

Mendocino National Forest

Size = 14,998 acres

Minimum Elevation = 886 ft

Maximum Elevation = 4,439 ft

Elevation Range = 3,553 ft

Mean Elevation = 2,642 ft

Deer Mountain PWA has 1,378 acres of late seral forest or 9 % of the total area. In Deer Mountain PWA there are 6,229 acres of serpentine or 42 %. Deer Mountain PWA has the tenth most serpentine of the PWAs. Deer Mountain PWA contains 1 non-ranked Holland community type. It also contains 4 types with less than 25% and 1 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 3,495 acres of Black Oak Forest (8%)
2. 3,646 acres of Coast Range Mixed Coniferous Forest (15%)
3. 2,191 acres of Coast Range Ponderosa Pine Forest (NR, 23%)
4. 2,849 acres of Mesic North Slope Chaparral (29%)
5. 2,804 acres of Montane Manzanita Chaparral (11%)

Devil's Rock Potential Wilderness Area

Shasta Trinity National Forest

Size = 23,630 acres

Minimum Elevation = 1,066 ft

Maximum Elevation = 3,451 ft

Elevation Range = 2,385 ft

Mean Elevation = 1,843 ft

Devil's Rock PWA has the fourth lowest mean elevation of the PWAs. Devil's Rock PWA has 8,163 acres of late seral forest or 35% of the total area. The Natural Diversity Database has identified 13 occurrences of California State or globally ranked rare species, the eighth most occurrences of all the PWAs. They consist of 4 animal species, 5 invertebrate species, 1 plant species, and 3 aquatic species. Devil's Rock PWA contains 1 threatened rare and 1 rare Holland community types. It also contains 7 types with less than 25% and 1 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 5,919 acres of Black Oak Forest (8%)
2. 33 acres of Black Oak Woodland (S3.2, 5%)
3. 461 acres of Interior Live Oak Forest (4%)
4. 672 acres of Knobcone Pine Forest (3%)
5. 19 acres of Mesic North Slope Chaparral (29%)

6. 487 acres of Open Foothill Pine Woodland (11%)
7. 3,848 acres of Shin Oak Brush (S3.3, 16%)
8. 12,166 acres of Sierran Mixed Coniferous Forest (9%)

Donomore Peak Potential Wilderness Area

Rouge River National Forest

Size = 1,284 acres

Minimum Elevation = 3,839 ft

Maximum Elevation = 6,529 ft

Elevation Range = 2,690 ft

Mean Elevation = 5,206 ft

Donomore Peak PWA has 473 acres of late seral forest or 37% of the total area. In Donomore Peak PWA there are 20 acres of serpentine or 2%. Donomore Peak PWA contains 1 threatened extremely endangered and 1 threatened rare Holland community types. It also contains 2 types with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 237 acres of Montane Meadow (S3.2, 27%)
2. 887 acres of Siskyou Enriched Coniferous Forest (S1.2, 44%)

Eagle Potential Wilderness Area

Shasta Trinity National Forest

Size = 8,522 acres

Minimum Elevation = 1,250 ft

Maximum Elevation = 5,699 ft

Elevation Range = 4,449 ft

Mean Elevation = 3,056 ft

Eagle PWA has 4,275 acres of late seral forest, or 50% of the total area. Salmonid species use a total of 2 miles of the streams. In Eagle PWA there are 16 acres of serpentine. The Natural Diversity Database has identified 7 occurrences of California State or globally ranked rare species. They consist of 2 animal species and 5 invertebrate species. Eagle PWA contains 1 very threatened endangered and 1 rare Holland community types. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 3,222 acres of Black Oak Forest (8%)
2. 4,728 acres of Coast Range Mixed Coniferous Forest (15%)
3. 18 acres of Oregon Oak Woodland (S3.3, 3%)
4. 552 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

East Fork Mountain Potential Wilderness Area

Shasta Trinity National Forest

Size = 10,075 acres

Minimum Elevation = 1,450 ft

Maximum Elevation = 4,357 ft

Elevation Range = 2,907 ft

Mean Elevation = 2,470 ft

East Fork Mountain PWA has the tenth lowest mean elevation of the PWAs. East Fork Mountain PWA has 4,693 acres of late seral forest or 47% of the total area. The Natural Diversity Database has identified 1 occurrence of California State or globally ranked rare species, consisting of 1 animal species. East Fork Mountain PWA 1 rare Holland community type. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 3,507 acres of Black Oak Forest (8%)
2. 391 acres of Montane Manzanita Chaparral (11%)
3. 1,958 acres of Shin Oak Brush (S3.3, 16%)
4. 4,207 acres of Sierran Mixed Coniferous Forest (9%)

Fox Ridge Potential Wilderness Area

Six Rivers National Forest

Size = 5,311 acres

Minimum Elevation = 837 ft

Maximum Elevation = 4,078 ft

Elevation Range = 3,241 ft

Mean Elevation = 2,476 ft

Fox Ridge PWA has 1,064 acres of late seral forest or 20% of the total area. There are 1,459 acres of Port Orford cedar with 246 acres being infected with the root rot disease. Fox Ridge PWA has the sixth largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 6 miles of the streams. In Fox Ridge PWA there are 4,420 acres of serpentine or 83%. 5,311 acres of Fox Ridge PWA are located in a designated Northwest Forest Plan Key Watershed, or 100% of the total area. Fox Ridge PWA contains 1 threatened rare Holland community type. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 2,840 acres of Coast Range Mixed Coniferous Forest (15%)
2. 717 acres of Mixed Evergreen Forest (15%)
3. 298 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
4. 1,455 acres of Ultramafic Mixed Coniferous Forest (16%)

Girard Ridge Potential Wilderness Area

Shasta Trinity National Forest

Size = 42,218 acres

Minimum Elevation = 1,188 ft

Maximum Elevation = 5,574 ft

Elevation Range = 4,386 ft

Mean Elevation = 3,330 ft

Girard Ridge PWA is the seventh largest of the PWAs. Girard Ridge PWA has 16,149 acres of late seral forest or 38% of the total area, the fifth largest late seral forest acreage of the PWAs. The Natural Diversity Database has identified 10 occurrences of California

State or globally ranked rare species. They consist of 7 animal species and 1 plant species. Girard Ridge PWA contains 1 non-ranked Holland community types. It also contains 6 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 4,160 acres of Black Oak Forest (8%)
2. 2,704 acres of Canyon Live Oak Forest (22%)
3. 1,552 acres of Interior Live Oak Forest (4%)
4. 2,019 acres of Montane Ceanothus Chaparral (NR, 14%)
5. 3,692 acres of Montane Manzanita Chaparral (11%)
6. 28,048 acres of Sierran Mixed Coniferous Forest (9%)

Grindstone Potential Wilderness Area

Mendocino National Forest

Size = 51,585 acres

Minimum Elevation = 761 ft

Maximum Elevation = 5,387 ft

Elevation Range = 4,626 ft

Mean Elevation = 2,988 ft

Grindstone PWA is the fifth largest of the PWAs. Grindstone PWA has 10,491 acres of late seral forest or 20% of the total area, the ninth largest late seral forest acreage of the PWAs. In Grindstone PWA there are 272 acres of serpentine or 1%. 18 acres of Grindstone PWA are located in a designated Northwest Forest Plan Key. The Natural Diversity Database has identified 4 occurrences of California State or globally ranked rare species. They consist of 4 animal species. Grindstone PWA contains 1 threatened rare and 2 rare Holland community types. It also contains 9 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 8,655 acres of Black Oak Forest (8%)
2. 20,151 acres of Black Oak Woodland (S3.2, 5%)
3. 431 acres of Chamise Chaparral (22%)
4. 793 acres of Coast Range Mixed Coniferous Forest (15%)
5. 4,896 acres of Foothill Pine-Oak Woodland (3%)
6. 12,259 acres of Knobcone Pine Forest (3%)
7. 599 acres of Montane Manzanita Chaparral (11%)
8. 2,204 acres of Oregon Oak Woodland (S3.3, 3%)
9. 1,542 acres of Shin Oak Brush (S3.3, 16%)

Horse Mountain Potential Wilderness Area

Shasta-Trinity National Forest

Size = 12,737 acres

Minimum Elevation = 1,066 ft

Maximum Elevation = 4,334 ft

Elevation Range = 3,268 ft

Mean Elevation = 2,092 ft

Horse Mountain PWA has the fifth lowest mean elevation of the PWAs. Horse Mountain PWA has 3,154 acres of late seral forest or 25% of the total area and 61 acres of Permanently flooded Lacustrine Habitat. The Natural Diversity Database has identified 8 occurrences of California State or globally ranked rare species. They consist of 2 invertebrate species, 2 plant species, and 4 aquatic species. Horse Mountain PWA contains 1 very threatened endangered and 1 rare Holland community types. It also contains 7 types with less than 25% and 1 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 1,432 acres of Black Oak Forest (8%)
2. 817 acres of Blue Oak Woodland (5%)
3. 208 acres of Mesic North Slope Chaparral (29%)
4. 4,181 acres of Montane Manzanita Chaparral (11%)
5. 5,370 acres of Non Serpentine Foothill Pine Woodland (8%)
6. 1,602 acres of Shin Oak Brush (S3.3, 16%)
7. 3,761 acres of Sierran Mixed Coniferous Forest (9%)
8. 291 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Kalmiopsis Potential Wilderness Area

Six Rivers National Forest

Size = 1,107 acres

Minimum Elevation = 876 ft

Maximum Elevation = 2,608 ft

Elevation Range = 1,732 ft

Mean Elevation = 1,670 ft

Kalmiopsis PWA has the third lowest mean elevation of the PWAs. Kalmiopsis PWA has 20 acres of late seral forest or 2% of the total area. There are 493 acres of Port Orford cedar with 65 acres being infected with the root rot disease. Kalmiopsis PWA has the ninth largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 1 mile of the streams. In Kalmiopsis PWA there are 1,092 acres of serpentine or 99%. 1,107 acres of Kalmiopsis PWA are located in a designated Northwest Forest Plan Key Watershed or 100% of the total area. The Natural Diversity Database has identified 1 occurrence of a California State or globally ranked rare species, consisting of 1 plant species (this seems really low – this is serpentine habitat – lots of endemics). Kalmiopsis PWA contains 1 threatened rare Holland community types. It also contains 2 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 197 acres of Coast Range Mixed Coniferous Forest (15%)
2. 902 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)

Kelly Peak Potential Wilderness Area

Six Rivers National Forest

Size = 5,636 acres

Minimum Elevation = 653 ft

Maximum Elevation = 3,845 ft

Elevation Range = 3,192 ft

Mean Elevation = 2,134 ft

Kelly Peak PWA has the sixth lowest mean elevation of the PWAs. Kelly Peak PWA has 1,005 acres of late seral forest, or 18% of the total area. There are 3,618 acres of Port Orford cedar with 11 acres being infected with the root rot disease. Kelly Peak PWA has the third largest acreage of non-diseased Port Orford Cedars of the PWAs. In Kelly Peak PWA there are 4,951 acres of serpentine or 88%. 5,636 acres of Kelly Peak PWA are located in a designated Northwest Forest Plan Key Watershed or 100% of the total area. The Natural Diversity Database has identified 3 occurrences of California State or globally ranked rare species. They consist of 1 animal species and 2 plant species. Kelly Peak PWA contains 1 threatened rare Holland community type. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 3,455 acres of Coast Range Mixed Coniferous Forest (15%)
2. 683 acres of Mixed Evergreen Forest (15%)
3. 365 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
4. 1,130 acres of Ultramafic Mixed Coniferous Forest (16%)

Mad River Buttes Potential Wilderness Area

Six Rivers National Forest

Size = 6,511 acres

Minimum Elevation = 2,215 ft

Maximum Elevation = 5,269 ft

Elevation Range = 3,054 ft

Mean Elevation = 4,183 ft

Mad River Buttes PWA has 2,316 acres of late seral forest, or 36% of the total area. 43 acres of Mad River Buttes PWA are located in a designated Northwest Forest Plan Key Watershed or 1% of the total area. The Natural Diversity Database has identified 2 occurrences of California State or globally ranked rare species. They consist of 2 animal species. Mad River Buttes PWA contains 3 Holland community types with less than 25% and of its distribution represented in a protected area in California. They are listed below.

1. 1,904 acres of Black Oak Forest (8%)
2. 3,050 acres of Coast Range Mixed Coniferous Forest (15%)
3. 1,558 acres of Mixed Evergreen Forest (15%)

Marble Mountain Potential Wilderness Area

Klamath National Forest

Size = 135,562 acres

Minimum Elevation = 640 ft

Maximum Elevation = 7,520 ft

Elevation Range = 6,880 ft

Mean Elevation = 3,747 ft

Marble Mountain PWA is important in supplying connectivity between Marble Mountain Wilderness and Trinity Alps and Russian Wilderness areas. Marble Mountain PWA is

the second largest and has the third greatest elevation range of the PWAs. Marble Mountain PWA has 35,889 acres of late seral forest, or 26% of the total area, the second largest late seral forest acreage of the PWAs. Salmonid species use a total of 38 miles of the streams, the third greatest amount of occupied salmonid habitat of the PWAs. In Marble Mountain PWA there are 8,284 acres of serpentine or 6%. Marble Mountain PWA has the fourth most serpentine of the PWAs. 84,012 acres of Marble Mountain PWA are located in a designated Northwest Forest Plan Key Watershed or 62% of the total area. This PWA contains the third largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 44 occurrences of California State or globally ranked rare species, the fourth most occurrences of all the PWAs.. They consist of 35 animal species, 5 plant species, 3 aquatic species, and 1 aquatic community. Marble Mountain PWA contains 2 threatened extremely endangered, 2 very threatened endangered, 2 rare, and 2 non-ranked Holland community types. It also contains 11 types with less than 25% and 5 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 3,021 acres of Black Oak Forest (8%)
2. 92,051 acres of Coast Range Mixed Coniferous Forest (15%)
3. 951 acres of Coast Range Ponderosa Pine Forest (NR, 23%)
4. 501 acres of Eastside Ponderosa Pine Forest (S2.1, 3%)
5. 52 acres of Huckleberry Oak Chaparral (S3.3, 38%)
6. 2,987 acres of Jeffrey Pine-Fir Forest (30%)
7. 5,896 acres of Mixed Evergreen Forest(15%)
8. 374 acres of Mixed Montane Chaparral (26%)
9. 1,129 acres of Montane Ceanothus Chaparral (NR, 14%)
10. 115 acres of Montane Manzanita Chaparral (11%)
11. 731 acres of Oregon Oak Woodland (S3.3, 3%)
12. 8,142 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
13. 8,047 acres of Sierran Mixed Coniferous Forest (9%)
14. 3,258 acres of Siskyou Enriched Coniferous Forest (S1.2, 44)
15. 395 acres of Tan Oak Forest (7%)
16. 5,215 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Mount Eddy Potential Wilderness Area

Shasta Trinity National Forest

Size = 18,224 acres

Minimum Elevation = 5,220 ft

Maximum Elevation = 8,999 ft

Elevation Range = 3,780 ft

Mean Elevation = 6,906 ft

Mount Eddy PWA has 444 acres of late seral forest or 2% of the total area. In Mount Eddy PWA there are 15,689 acres of serpentine or 86%. Mount Eddy PWA has the third most serpentine of the PWAs. The Natural Diversity Database has identified 48 occurrences of California State or globally ranked rare species, the second most occurrences of all the PWAs. They consist of 1 animal species, 33 plant species, and 11

aquatic species. Mount Eddy PWA contains 1 threatened extremely endangered, 1 very threatened endangered, and 1 rare Holland community types. It also contains 3 types with less than 25% and 5 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 11 acres of Black Oak Forest (8%)
2. 1,052 acres of Huckleberry Oak Chaparral (S3.3, 38%)
3. 4,043 acres of Jeffrey Pine-Fir Forest (30%)
4. 260 acres of Mixed Montane Chaparral (26%)
5. 1,119 acres of Red Fir Forest (48%)
6. 8,414 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
7. 89 acres of Sierran Mixed Coniferous Forest (9%)
8. 1,348 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Mount Shasta Potential Wilderness Area

Shasta Trinity National Forest

Size = 6,152 acres

Minimum Elevation = 4,150 ft

Maximum Elevation = 11,982 ft

Elevation Range = 7,831 ft

Mean Elevation = 6,892 ft

Mount Shasta PWA has the greatest elevation range of the PWAs. Mount Shasta PWA has 278 acres of late seral forest or 5% of the total area. In Mount Shasta PWA there are N/A acres of serpentine. The Natural Diversity Database has identified 3 occurrences of California State or globally ranked rare species. They consist of 3 plant species. Mount Shasta PWA contains 2 very threatened endangered and 1 non-ranked Holland community types. It also contains 5 types with less than 25% and 2 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 132 acres of Cercocarpus ledifolius Woodland (NR, 15%)
2. 245 acres of Eastside Ponderosa Pine Forest (S2.1, 3%)
3. 172 acres of Great Basin Woodlands (11%)
4. 2,009 acres of Red Fir Forest (48%)
5. 193 acres of Sierran Mixed Coniferous Forest (9%)
6. 1,785 acres of Westside Ponderosa Pine Forest (S2.1, 14%)
7. 190 acres of Whitebark Pine Forest (61%)

Mt. Lassic Potential Wilderness Area

Six Rivers National Forest

Size = 10,487 acres

Minimum Elevation = 2,736 ft

Maximum Elevation = 5,883 ft

Elevation Range = 3,146 ft

Mean Elevation = 4,330 ft

Mt. Lassic PWA has 5,142 acres of late seral forest, or 49% of the total area. Salmonid species use a total of 5 miles of the streams. In Mt. Lassic PWA there are 2,179 acres of serpentine or 21%. The Natural Diversity Database has identified 4 occurrences of California State or globally ranked rare species. They consist of 1 animal species and 3 plant species. Mt. Lassic PWA contains 1 very threatened endangered, 2 threatened rare, and 1 rare Holland community types. It also contains 7 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 486 acres of Black Oak Forest (8%)
2. 2,351 acres of Black Oak Woodland (S3.2, 5%)
3. 2,440 acres of Coast Range Mixed Coniferous Forest (15%)
4. 927 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
5. 46 acres of Oregon Oak Woodland (S3.3, 3%)
6. 1,723 acres of Sierran White Fir Forest (23%)
7. 2,445 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

North Fork Eel Potential Wilderness Area

Bureau of Land Management and Six Rivers National Forest

Size = 20,979 acres

Minimum Elevation = 1,358 ft

Maximum Elevation = 4,531 ft

Elevation Range = 3,173 ft

Mean Elevation = 2,661 ft

North Fork Eel PWA has 3,898 acres of late seral forest or 19% of the total area. Salmonid species use a total of 14 miles of the streams. In North Fork Eel PWA there are 20 acres of serpentine. 20,469 acres of North Fork Eel PWA are located in a designated Northwest Forest Plan Key Watershed or 98% of the total area. This PWA contains the tenth largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 3 occurrences of California State or globally ranked rare species. They consist of 3 animal species. North Fork Eel PWA contains 2 threatened rare and 1 rare Holland community types. It also contains 6 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 1,839 acres of Black Oak Forest (8%)
2. 600 acres of Black Oak Woodland (S3.2, 5%)
3. 12,069 acres of Coast Range Mixed Coniferous Forest (15%)
4. 1,274 acres of Mixed Evergreen Forest (15%)
5. 16 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
6. 778 acres of Oregon Oak Woodland (S3.3, 3%)

North Fork Smith Potential Wilderness Area

Six Rivers National Forest

Size = 38,189 acres

Minimum Elevation = 384 ft

Maximum Elevation = 3,743 ft

Elevation Range = 3,360 ft
Mean Elevation = 2,158 ft

North Fork Smith PWA is the tenth largest, and is the seventh lowest in mean elevation of the PWAs. North Fork Smith PWA has 1,223 acres of late seral forest or 3% of the total area. There are 15,014 acres of Port Orford cedar with 956 acres being infected with the root rot disease. North Fork Smith PWA has the second largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 26 miles of the streams, the seventh greatest amount of occupied salmonid habitat of the PWAs.. In North Fork Smith PWA there are 35,119 acres of serpentine or 92%. North Fork Smith PWA has the second most serpentine of the PWAs. 38,038 acres of North Fork Smith PWA are located in a designated Northwest Forest Plan Key Watershed or 100% of the total area. This PWA contains the fourth largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 40 occurrences of California State or globally ranked rare species, the fifth most occurrences of all the PWAs. They consist of 1 animal species, and 39 plant species. North Fork Smith PWA contains 1 very threatened rare and 2 threatened rare Holland community types. It also contains 7 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 722 acres of Black Oak Forest (8%)
2. 6,609 acres of Coast Range Mixed Coniferous Forest (15%)
3. 636 acres of Mixed Evergreen Forest (15%)
4. 1,437 acres of North Coast Riparian Scrub (S3.2, 4%)
5. 10,820 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
6. 14,477 acres of Ultramafic Mixed Coniferous Forest (16%)
7. 1,162 acres of Upland Douglas-Fir Forest (S3.1, 17%)

Panther Potential Wilderness Area

Shasta Trinity National Forest
Size = 13,405 acres
Minimum Elevation = 994 ft
Maximum Elevation = 5,210 ft
Elevation Range = 4,216 ft
Mean Elevation = 2,547 ft

Panther PWA has 4,054 acres of late seral forest, or 30% of the total area. The Natural Diversity Database has identified 7 occurrences of California State or globally ranked rare species. They consist of 7 animal species. Panther PWA contains 1 rare and 1 non-ranked Holland community types. It also contains 6 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 486 acres of Black Oak Forest (8%)
2. 8,279 acres of Coast Range Mixed Coniferous Forest (15%)
3. 906 acres of Montane Ceanothus Chaparral (NR, 14%)
4. 1,295 acres of Oregon Oak Woodland (S3.3, 3%)
5. 653 acres of Sierran Mixed Coniferous Forest (9%)

6. 1,782 acres of Tan Oak Forest (7%)

Pattison Potential Wilderness Area

Shasta Trinity National Forest

Size = 31,011 acres

Minimum Elevation = 1,260 ft

Maximum Elevation = 5,837 ft

Elevation Range = 4,577 ft

Mean Elevation = 3,096 ft

Pattison PWA has 11,344 acres of late seral forest, or 37% of the total area, the seventh largest late seral forest acreage of the PWAs. Salmonid species use a total of 31 miles of the streams, the fourth greatest amount of occupied salmonid habitat of the PWAs. In Pattison PWA there are 108 acres of serpentine. The Natural Diversity Database has identified 6 occurrences of California State or globally ranked rare species. They consist of 5 animal species and 1 plant species. Pattison PWA contains 1 very threatened endangered, 1 threatened rare, and 1 non-ranked Holland community types. It also contains 6 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 3,139 acres of Black Oak Forest (8%)
2. 17,477 acres of Coast Range Mixed Coniferous Forest (15%)
3. 12 acres of Mixed North Slope Cismontane Woodland (S3.2, 2%)
4. 10 acres of Montane Ceanothus Chaparral (NR, 14%)
5. 6,812 acres of Sierran Mixed Coniferous Forest (9%)
6. 3,509 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Red Buttes Potential Wilderness Area

Klamath and Rouge River National Forest

Size = 61,417 acres

Minimum Elevation = 1,266 ft

Maximum Elevation = 6,722 ft

Elevation Range = 5,456 ft

Mean Elevation = 3,787 ft

Red Buttes PWA supplies connectivity between the Marbled Mountain and Siskiyou Wilderness and the Siskiyou Crest. Red Buttes PWA is the fourth largest and has the ninth greatest elevation range of the PWAs. Red Buttes PWA has 11,300 acres of late seral forest, or 18% of the total area, the eighth largest late seral forest acreage of the PWAs. Salmonid species use a total of 28 miles of the streams, the fifth greatest amount of occupied salmonid habitat of the PWAs. In Red Buttes PWA there are 7,619 acres of serpentine or 12%. Red Buttes PWA has the seventh most serpentine of the PWAs. The Natural Diversity Database has identified 11 occurrences of California State or globally ranked rare species. They consist of 6 animal species, 4 plant species, and 1 aquatic species. Red Buttes PWA contains 1 threatened extremely endangered, 1 very threatened

endangered, 1 very threatened rare,, 1 threatened rare, and 1 rare Holland community types. It also contains 12 types with less than 25% and 5 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 1,744 acres of Black Oak Forest (8%)
2. 1,141 acres of Bush Chinquapin Chaparral (S3.3, 20%)
3. 703 acres of Canyon Live Oak Forest (22%)
4. 29,763 acres of Coast Range Mixed Coniferous Forest (15%)
5. 2,067 acres of Huckleberry Oak Chaparral (S3.3, 38%)
6. 66 acres of Jeffrey Pine-Fir Forest (30%)
7. 868 acres of Knobcone Pine Forest (3%)
8. 4,614 acres of Mixed Evergreen Forest (15%)
9. 2,736 acres of Mixed Montane Chaparral (26%)
10. 766 acres of Montane Manzanita Chaparral (11%)
11. 95 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
12. 1,951 acres of Red Fir Forest (48%)
13. 9,881 acres of Sierran Mixed Coniferous Forest (9%)
14. 1,390 acres of Sierran White Fir Forest (23%)
15. 2,593 acres of Siskyou Enriched Coniferous Forest (S1.2, 44)
16. 91 acres of Upland Douglas-Fir Forest (S3.1, 17%)
17. 121 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Rowdy Creek Potential Wilderness Area

Six Rivers National Forest

Size = 5,364 acres

Minimum Elevation = 331 ft

Maximum Elevation = 2,480 ft

Elevation Range = 2,149 ft

Mean Elevation = 1,415 ft

Rowdy Creek PWA has the second lowest mean elevation of the PWAs. Rowdy Creek PWA has 968 acres of late seral forest, or 18% of the total area. There are 1,052 acres of Port Orford cedar with 0 acres being infected with the root rot disease. Rowdy Creek PWA has the seventh largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 2 miles of the streams. In Rowdy Creek PWA there are 1,816 acres of serpentine or 34%. 33 acres of Rowdy Creek PWA are located in a designated Northwest Forest Plan Key Watershed or 1% of the total area. The Natural Diversity Database has identified 5 occurrences of California State or globally ranked rare species. They consist of 1 animal species and 4 plant species. Rowdy Creek PWA contains 1 endangered, 1 threatened rare and 1 non-ranked Holland community types. It also contains 5 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 237 acres of Alluvial Redwood Forest (NR, 5%)
2. 2,906 acres of Coast Range Mixed Coniferous Forest (15%)
3. 1,529 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
4. 319 acres of Ultramafic Mixed Coniferous Forest (16%)
5. 338 acres of Upland Redwood Forest (S2.3, 13%)

Russian Potential Wilderness Area

Klamath National Forest

Size = 33,041 acres

Minimum Elevation = 2,418 ft

Maximum Elevation = 7,936 ft

Elevation Range = 5,518 ft

Mean Elevation = 5,248 ft

Russian PWA is important in supplying connectivity between Russian Wilderness and Marble Mountain and Trinity Alps Wilderness areas. It is also known for having the highest diversity of conifers in the world. Russian PWA has the seventh greatest elevation range of the PWAs. Russian PWA has 10,355 acres of late seral forest, or 31% of the total area, the tenth largest late seral forest acreage of the PWAs. Salmonid species use a total of 5 miles of the streams. 24,876 acres of Russian PWA are located in a designated Northwest Forest Plan Key Watershed, or 75% of the total area. This PWA contains the seventh largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 13 occurrences of California State or globally ranked rare species, the ninth most occurrences of all the PWAs. They consist of 10 animal species, 2 plant species, and 1 aquatic community. Russian PWA contains 1 threatened extremely endangered, 1 very threatened endangered, 1 threatened rare, and 1 rare Holland community types. It also contains 6 types with less than 25% and 4 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 356 acres of Black Oak Forest (8%)
2. 7,302 acres of Coast Range Mixed Coniferous Forest (15%)
3. 3,873 acres of Huckleberry Oak Chaparral (S3.3, 38%)
4. 69 acres of Jeffrey Pine Forest (22%)
5. 1,884 acres of Jeffrey Pine-Fir Forest (30%)
6. 129 acres of Mixed Montane Chaparral (26%)
7. 277 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
8. 10,853 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
9. 3,841 acres of Sierran Mixed Coniferous Forest (9%)
10. 922 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Sanhedrin Mountain Potential Wilderness Area

Mendocino National Forest

Size = 10,943 acres

Minimum Elevation = 1,647 ft

Maximum Elevation = 6,125 ft

Elevation Range = 4,478 ft

Mean Elevation = 3,889 ft

Sanhedrin Mountain PWA has 1,892 acres of late seral forest, or 17% of the total area. In Sanhedrin Mountain PWA there are 3 acres of serpentine. The Natural Diversity Database has identified 5 occurrences of California State or globally ranked rare species.

They consist of 2 animal species and 3 plant species. Sanhedrin Mountain PWA contains 2 threatened rare and 1 rare Holland community types. It also contains 11 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 20 acres of Black Oak Forest (8%)
2. 1,115 acres of Canyon Live Oak Forest (22%)
3. 738 acres of Chamise Chaparral (22%)
4. 5,163 acres of Coast Range Mixed Coniferous Forest (15%)
5. 18 acres of Mixed Evergreen Forest (15%)
6. 11 acres of Mixed North Slope Cismontane Woodland (S3.2, 2%)
7. 80 acres of Montane Manzanita Chaparral (11%)
8. 22 acres of Open Foothill Pine Woodland (11%)
9. 104 acres of Oregon Oak Woodland (S3.3, 3%)
10. 26 acres of Serpentine Foothill Pine-Chaparral Woodland (S3.2, 3%)
11. 61 acres of Sierran Mixed Coniferous Forest (9%)

Shelly Creek Potential Wilderness Area

Siskiyou and Six Rivers National Forest

Size = 8,675 acres

Minimum Elevation = 1,194 ft

Maximum Elevation = 3,842 ft

Elevation Range = 2,648 ft

Mean Elevation = 2,453 ft

Shelly Creek PWA has the ninth lowest mean elevation of the PWAs. Shelly Creek PWA has 2,475 acres of late seral forest, or 29% of the total area. There are 1,193 acres of Port Orford cedar with 359 acres being infected with the root rot disease. Shelly Creek PWA has the eighth largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 2 miles of the streams. In Shelly Creek PWA there are 382 acres of serpentine, or 4%. 6,922 acres of Shelly Creek PWA are located in a designated Northwest Forest Plan Key Watershed, or 80% of the total area. The Natural Diversity Database has identified 6 occurrences of California State or globally ranked rare species. They consist of 2 animal species, 3 plant species, and 1 aquatic species. Shelly Creek PWA contains 1 threatened rare Holland community types. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 1,806 acres of Coast Range Mixed Coniferous Forest (15%)
2. 671 acres of Mixed Evergreen Forest (15%)
3. 405 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
4. 5,793 acres of Tan Oak Forest (7%)

Ship Mountain Potential Wilderness Area

Six rivers National Forest

Size = 9,642 acres

Minimum Elevation = 1,073 ft

Maximum Elevation = 5,305 ft
Elevation Range = 4,232 ft
Mean Elevation = 3,202 ft

Ship Mountain PWA has 1,521 acres of late seral forest, or 16% of the total area. There are 2,264 acres of Port Orford cedar with 0 acres infected with the root rot disease. Ship Mountain PWA has the fourth largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 4 miles of the streams. In Ship Mountain PWA there are 8,067 acres of serpentine, or 84%. Ship Mountain PWA has the sixth most serpentine of the PWAs. 9,642 acres of Ship Mountain PWA are located in a designated Northwest Forest Plan Key Watershed, or 100% of the total area. The Natural Diversity Database has identified 3 occurrences of California State or globally ranked rare species. They consist of 1 plant species and 2 aquatic species. Ship Mountain PWA contains 1 threatened rare Holland community types. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 5,996 acres of Coast Range Mixed Coniferous Forest (15%)
2. 589 acres of Mixed Evergreen Forest (15%)
3. 648 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
4. 2,402 acres of Ultramafic Mixed Coniferous Forest (16%)

Siskiyou Potential Wilderness Area

Klamath, Kiskiyou, and Six Rivers National Forest
Size = 135,162 acres
Minimum Elevation = 430 ft
Maximum Elevation = 6,270 ft
Elevation Range = 5,840 ft
Mean Elevation = 3,269 ft

Siskiyou PWA is the third largest and has the fourth greatest elevation range of the PWAs. Siskiyou PWA has 30,311 acres of late seral forest, or 22% of the total area, the third largest late seral forest acreage of the PWAs. There are 17,357 acres of Port Orford cedar with 46 acres being infected with the root rot disease. Siskiyou PWA has the largest acreage of non-diseased Port Orford Cedars of the PWAs. Salmonid species use a total of 46 miles of the streams, the second greatest amount of occupied salmonid habitat of the PWAs. In Siskiyou PWA there are 37,015 acres of serpentine, or 27%. Siskiyou PWA has the most serpentine of the PWAs. 105,836 acres of Siskiyou PWA are located in a designated Northwest Forest Plan Key Watershed, or 78% of the total area. This PWA contains the second largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 48 occurrences of California State or globally ranked rare species, the third most occurrences of all the PWAs. They consist of 27 animal species, 15 plant species, 4 aquatic species, and 2 terrestrial communities. Siskiyou PWA contains 2 threatened extremely endangered, 2 very threatened endangered, 1 very threatened rare, 2 threatened rare, 1 non-ranked Holland community types. It also contains 15 types with less than 25% and 6 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 4,130 acres of Black Oak Forest (8%)
2. 2,031 acres of Black Oak Woodland (S3.2, 5%)
3. 253 acres of Blue Oak Woodland (S3.2, 4%)
4. 86,677 acres of Coast Range Mixed Coniferous Forest (15%)
5. 224 acres of Coast Range Ponderosa Pine Forest (NR, 23%)
6. 770 acres of Jeffrey Pine-Fir Forest (30%)
7. 467 acres of Knobcone Pine Forest (3%)
8. 1,449 acres of Mixed Evergreen Forest (15%)
9. 106 acres of Mixed Montane Chaparral (26%)
10. 14 acres of Montane Manzanita Chaparral (11%)
11. 3,354 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
12. 175 acres of Port Orford Cedar Forest (S2.1, 88%)
13. 686 acres of Red Fir Forest (48%)
14. 121 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
15. 1,617 acres of Sierran Mixed Coniferous Forest (9%)
16. 6,745 acres of Sierran White Fir Forest (23%)
17. 3,472 acres of Siskyou Enriched Coniferous Forest (S1.2, 44%)
18. 14,179 acres of Tan Oak Forest (7%)
19. 2,897 acres of Ultramafic Mixed Coniferous Forest (16%)
20. 156 acres of Upland Douglas-Fir Forest (S3.1, 17%)
21. 5,510 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

Snow Mountain Potential Wilderness Area

Mendocino National Forest

Size = 38,608 acres

Minimum Elevation = 1,257 ft

Maximum Elevation = 6,765 ft

Elevation Range = 5,509 ft

Mean Elevation = 3,308 ft

Snow Mountain PWA is the ninth largest and has the eighth greatest elevation range of the PWAs. Snow Mountain PWA has 9,165 acres of late seral forest, or 24 % of the total area. Salmonid species use a total of 7 miles of the streams. In Snow Mountain PWA there are 1,609 acres of serpentine, or 4 %. 16,287 acres of Snow Mountain PWA are located in a designated Northwest Forest Plan Key Watershed, or 42 % of the total area. The Natural Diversity Database has identified 2 occurrences of California State or globally ranked rare species consisting of 2 animal species. Snow Mountain PWA contains 1 very threatened endangered and 1 threatened rare Holland community types. It also contains 15 types with less than 25% and 2 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 16,397 acres of Coast Range Mixed Coniferous Forest (15%)
2. 5,985 acres of Sierran Mixed Coniferous Forest (9%)
3. 5,210 acres of Black Oak Forest (8%)
4. 4,772 acres of Jeffrey Pine-Fir Forest (30%)
5. 4,094 acres of Black Oak Woodland (S3.2, 5%)
6. 3,356 acres of Blue Oak Woodland (S3.2, 4%)

7. 3,172 acres of Non Serpentine Foothill Pine Woodland (8%)
8. 1,576 acres of Chamise Chaparral (22%)
9. 821 acres of Canyon Live Oak Forest (22%)
10. 728 acres of Serpentine Foothill Pine-Chaparral Woodland (S3.2, 3%)
11. 728 acres of Buck Brush Chaparral (17%)
12. 504 acres of Mixed Serpentine Chaparral (1%)
13. 443 acres of Knobcone Pine Forest (3%)
14. 413 acres of Red Fir Forest (48%)
15. 353 acres of Open Foothill Pine Woodland (11%)
16. 329 acres of Westside Ponderosa Pine Forest (S2.1, 14%)
17. 23 acres of Interior Live Oak Forest (4%)

Soda Mountain Potential Wilderness Area

Bureau of Land Management

Size = 10,709 acres

Minimum Elevation = 2,359 ft

Maximum Elevation = 4,600 ft

Elevation Range = 2,241 ft

Mean Elevation = 3,375 ft

Soda Mountain PWA is important for supplying connectivity to the Cascade-Siskiyou national monument and as a travel corridor to migration of the largest wintering herd of deer in southwest Oregon. Soda Mountain PWA has 173 acres of late seral forest, or 2 % of the total area. The Natural Diversity Database has identified two occurrences of California State or globally ranked rare species. They consist of one animal species and one plant species. Soda Mountain PWA contains 1 very threatened endangered and 1 rare Holland community types. It also contains 4 types with less than 25% of its distribution represented in a protected area in California. Oak woodlands and Oak grasslands are poorly represented in protected areas, particularly these which are valued because of the large size of the oaks and intact grasslands present in some of the areas that haven't been intensively grazed. The Holland community types are listed below.

1. 1,572 acres of Buck Brush Chaparral (17%)
3. 7,047 acres of Great Basin Woodlands (11%)
4. 94 acres of Oregon Oak Woodland (S3.3, 3%)
5. 1,910 acres of Westside Ponderosa Pine Forest (S2.1, 14%)

South Fork Trinity Potential Wilderness Area

Shasta Trinity National Forest

Size = 22,671 acres

Minimum Elevation = 1,417 ft

Maximum Elevation = 5,171 ft

Elevation Range = 3,753 ft

Mean Elevation = 3,036 ft

South Fork Trinity PWA has 7,058 acres of late seral forest, or 31 % of the total area. Salmonid species use a total of 26 miles of the streams, the sixth greatest amount of

occupied salmonid habitat of the PWAs. In South Fork Trinity PWA there are 344 acres of serpentine. 22,671 acres of South Fork Trinity PWA are located in a designated Northwest Forest Plan Key Watershed, or 100 % of the total area. This PWA contains the ninth largest Key Watershed acreage of the PWAs. South Fork Trinity PWA along with Chinquapin PWA is important in supplying connectivity between Yolla Bolly Middle Eel PWA and the mainstem of the Trinity River. The Natural Diversity Database has identified 7 occurrences of California State or globally ranked rare species. They consist of 4 animal species and one plant species. South Fork Trinity PWA contains 1 very threatened endangered Holland community type. It also contains 6 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 7,117 acres of Coast Range Mixed Coniferous Forest (15%)
2. 3,916 acres of Tan Oak Forest (7%)
3. 1,793 acres of Sierran White Fir Forest (23%)
4. 732 acres of Black Oak Forest (8%)
5. 332 acres of Westside Ponderosa Pine Forest (S2.1, 14%)
6. 180 acres of Mixed Evergreen Forest (15%)

Thomes Creek Potential Wilderness Area

Mendocino National Forest

Size = 20,117 acres

Minimum Elevation = 1,050 ft

Maximum Elevation = 5,157 ft

Elevation Range = 4,108 ft

Mean Elevation = 3,021 ft

Thomes Creek PWA has 4,472 acres of late seral forest, or 22 % of the total area. In Thomes Creek PWA there are 2,851 acres of serpentine, or 14 % of the total area. The Natural Diversity Database has identified 4 occurrences of California State or globally ranked rare species. They consist of 3 animal species and one plant species. Thomes Creek PWA contains 1 very threatened rare, 1 threatened rare, and 1 non-ranked Holland community types. It also contains 7 types with less than 25% and 2 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 7,117 acres of Coast Range Mixed Coniferous Forest (15%)
2. 5,447 acres of Black Oak Forest (8%)
3. 2,924 acres of Montane Manzanita Chaparral (11%)
4. 1,153 acres of Upland Douglas-Fir Forest (S3.1, 17%)
5. 990 acres of Mixed Montane Chaparral (26%)
6. 810 acres of Blue Oak Woodland (S3.2, 4%)
7. 718 acres of Jeffrey Pine Forest (22%)
8. 332 acres of Mesic North Slope Chaparral (29%)
9. 255 acres of Coast Range Ponderosa Pine Forest (NR, 23%)

Tom Martin Potential Wilderness Area

Klamath National Forest

Size = 16,611 acres

Minimum Elevation = 1,437 ft

Maximum Elevation = 6,991 ft

Elevation Range = 5,554 ft

Mean Elevation = 3,683 ft

Tom Martin PWA has the sixth greatest elevation range of the PWAs. Tom Martin PWA has 4,801 acres of late seral forest, or 29 % of the total area. Salmonid species use a total of one mile of the streams. In Tom Martin PWA there are 8,267 acres of serpentine, or 50% of the total area. Tom Martin PWA has the fifth most serpentine of the PWAs. The Natural Diversity Database has identified 4 occurrences of California State or globally ranked rare species. They consist of 3 animal species and one plant species. Tom Martin PWA contains 2 threatened extremely endangered, 1 very threatened endangered, 1 threatened rare, and 1 non-ranked Holland community types. It also contains 7 types with less than 25% and 3 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 6,199 acres of Coast Range Mixed Coniferous Forest (15%)
2. 3,317 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
3. 1,700 acres of Jeffrey Pine-Fir Forest (30%)
4. 1,459 acres of Sierran Mixed Coniferous Forest (9%)
5. 1,326 acres of Black Oak Forest (8%)
6. 550 acres of Siskyou Enriched Coniferous Forest (S1.2, 44%)
7. 537 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
8. 326 acres of Coast Range Ponderosa Pine Forest (NR, 23%)
9. 306 acres of Westside Ponderosa Pine Forest (S2.1, 14%)
10. 275 acres of Mixed Evergreen Forest (15%)

Trinity Alps Potential Wilderness Area

Klamath, Shasta-Trinity, Six Rivers National Forests and Bureau of Land Management

Size = 170,055 acres

Minimum Elevation = 479 ft

Maximum Elevation = 7,451 ft

Elevation Range = 6,972 ft

Mean Elevation = 3,341 ft

Trinity Alps PWA is important in supplying connectivity between Trinity Alps Wilderness and Marble Mountain and Russian Wilderness areas. Trinity Alps PWA is the largest and has the second greatest elevation range of the PWAs. Trinity Alps PWA has 52,906 acres of late seral forest, or 31 % of the total area, the largest late seral forest acreage of the PWAs. Salmonid species use a total of 63 miles of the streams, the greatest amount of occupied salmonid habitat of the PWAs. In Trinity Alps PWA there are 1,539 acres of serpentine, or 1% of the total area. 131,947 acres of Trinity Alps PWA

are located in a designated Northwest Forest Plan Key Watershed, or 78 % of the total area. This PWA contains the largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 66 occurrences of California State or globally ranked rare species, the most occurrences of all the PWAs. They consist of 53 animal species, 2 invertebrate species, 2 plant species, 6 aquatic species, and 3 aquatic communities. Trinity Alps PWA contains 1 threatened extremely endangered, 1 very threatened endangered, 2 threatened rare, 1 rare, and 2 non-ranked Holland community types. It also contains 17 types with less than 25% and 2 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 94,733 acres of Coast Range Mixed Coniferous Forest (15%)
2. 14,561 acres of Mixed Evergreen Forest (15%)
3. 12,269 acres of Tan Oak Forest (7%)
4. 6,471 acres of Sierran White Fir Forest (23%)
5. 5,945 acres of Westside Ponderosa Pine Forest (S2.1, 14%)
6. 5,771 acres of Black Oak Forest (8%)
7. 5,240 acres of Sierran Mixed Coniferous Forest (9%)
8. 4,719 acres of Red Fir Forest (48%)
9. 3,903 acres of Salmon-Scott Enriched Coniferous Forest (S1.2, 55%)
10. 3,475 acres of Canyon Live Oak Forest (22%)
11. 3,268 acres of Oregon Oak Woodland (S3.3, 3%)
12. 3,210 acres of Foothill Pine-Oak Woodland (3%)
13. 2,014 acres of Coast Range Ponderosa Pine Forest (NR, 23%)
14. 1,606 acres of Montane Ceanothus Chaparral (NR, 14%)
15. 812 acres of Non Serpentine Foothill Pine Woodland (8%)
16. 689 acres of Ultramafic Mixed Coniferous Forest (16%)
17. 590 acres of Open Foothill Pine Woodland (11%)
18. 318 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
19. 203 acres of Black Oak Woodland (S3.2, 5%)

Underwood Potential Wilderness Area

Six Rivers and Shasta Trinity National Forest

Size = 16,127 acres

Minimum Elevation = 656 ft

Maximum Elevation = 4,902 ft

Elevation Range = 4,245 ft

Mean Elevation = 2,690 ft

Underwood PWA has 5,618 acres of late seral forest, or 35 % of the total area. Salmonid species use a total of 8 miles of the streams. In Underwood PWA there are 755 acres of serpentine, or 5 %. 10,800 acres of Underwood PWA are located in a designated Northwest Forest Plan Key Watershed, or 67 % of the total area. The Natural Diversity Database has identified 10 occurrences of California State or globally ranked rare species consisting of 10 animal species. Underwood PWA contains 1 rare Holland community types. It also contains 6 types with less than 25% of its distribution represented in a protected area in California. They are listed below.

1. 1,098 acres of Canyon Live Oak Forest (22%)

2. 9,693 acres of Coast Range Mixed Coniferous Forest (15%)
3. 334 acres of Mixed Evergreen Forest (15%)
4. 4,592 acres of Oregon Oak Woodland (S3.3, 3%)
5. 207 acres of Sierran Mixed Coniferous Forest (9%)
6. 202 acres of Tan Oak Forest (7%)

Yolla Bolly Middle Eel Potential Wilderness Area

Mendocino, Shasta Trinity, Six Rivers National Forests and Bureau of Land Management

Size = 47,946 acres

Minimum Elevation = 1,555 ft

Maximum Elevation = 7,329 ft

Elevation Range = 5,774 ft

Mean Elevation = 4,453 ft

Yolla Bolly Middle Eel PWA is the sixth largest and has the fifth greatest elevation range of the PWAs. Yolla Bolly Middle Eel PWA has 19,475 acres of late seral forest, or 41 % of the total area, the fourth largest late seral forest acreage of the PWAs. Salmonid species use a total of 18 miles of the streams, the ninth greatest amount of occupied salmonid habitat of the PWAs. In Yolla Bolly Middle Eel PWA there are 71 acres of serpentine. 34,433 acres of Yolla Bolly Middle Eel PWA are located in a designated Northwest Forest Plan Key Watershed, or 72 % of the total area. This PWA contains the fifth largest Key Watershed acreage of the PWAs. The Natural Diversity Database has identified 24 occurrences of California State or globally ranked rare species, the sixth most occurrences of all the PWAs. They consist of 13 animal species, 6 plant species, 4 aquatic species, and 1 aquatic community. Yolla Bolly Middle Eel PWA contains 3 threatened rare and 1 rare Holland community types. It also contains 9 types with less than 25% and 1 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 7,390 acres of Black Oak Forest (8%)
2. 2,381 acres of Black Oak Woodland (S3.2, 5%)
3. 13,968 acres of Coast Range Mixed Coniferous Forest (15%)
4. 1,607 acres of Foothill Pine-Oak Woodland (3%)
5. 22 acres of Jeffrey Pine Forest (22%)
6. 6,024 acres of Mixed North Slope Cismontane Woodland (S3.2, 2%)
7. 6,101 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
8. 1,685 acres of Oregon Oak Woodland (S3.3, 3%)
9. 17 acres of Red Fir Forest (48%)
10. 10,4413 acres of Sierran Mixed Coniferous Forest (9%)

Yuki Potential Wilderness Area

Mendocino National Forest and Bureau of Land Management

Size = 38,608 acres

Minimum Elevation = 1,378 ft

Maximum Elevation = 6,529 ft

Elevation Range = 5,151 ft

Mean Elevation = 3,793 ft

Yuki PWA is the eighth largest and has the tenth greatest elevation range of the PWAs. Yuki PWA has 9,165 acres of late seral forest, or 24 % of the total area. Salmonid species use a total of 7 miles of the streams. In Yuki PWA there are 1,609 acres of serpentine, or 4 %. 16,287 acres of Yuki PWA are located in a designated Northwest Forest Plan Key Watershed, or 42 % of the total area. The Natural Diversity Database has identified 2 occurrences of California State or globally ranked rare species consisting of 2 animal species. Yuki PWA contains 2 threatened rare and 1 rare Holland community types. It also contains 11 types with less than 25% and 4 with less than 50% of its distribution represented in a protected area in California. They are listed below.

1. 1,129 acres of Black Oak Forest (8%)
2. 1,439 acres of Chamise Chaparral (22%)
3. 3,142 acres of Coast Range Mixed Coniferous Forest (15%)
4. 7,148 acres of Jeffrey Pine-Fir Forest (30%)
5. 699 acres of Mesic North Slope Chaparral (29%)
6. 790 acres of Mixed Evergreen Forest (15%)
7. 58 acres of Mixed Montane Chaparral (26%)
8. 866 acres of Mixed North Slope Cismontane Woodland (S3.2, 2%)
9. 1,689 acres of Montane Manzanita Chaparral (11%)
10. 490 acres of Northern Mixed Chaparral (8%)
11. 358 acres of Northern Ultramafic Jeffrey Pine Forest (S3.2, 24%)
12. 11,004 acres of Open Foothill Pine Woodland (11%)
13. 4,023 acres of Red Fir Forest (48%)
14. 1,096 acres of Shin Oak Brush (S3.3, 16%)
15. 2,722 acres of Sierran Mixed Coniferous Forest (9%)

Discussion

The results of this assessment show in detail how each PWA contributes the regional reserve system for the Klamath-Siskiyou. All the PWAs do not contain all the variables analyzed; therefore the results quantify the variables that exist within each PWA. The purpose of this assessment was to determine the contribution each PWA makes to the regional reserve system, not to compare one PWA to another. Caution must be advised when trying to compare and contrast results between different PWAs, as the variable in question may not naturally exist across the full range of the study area.

Including these PWAs into the wilderness legislation will add to the reserve system of the Klamath-Siskiyou in a positive manner, by protecting special elements, under-represented vegetation community types, and the ecological processes. In turn helping to preserve the biological diversity of the ecoregion.

Special Elements

Late-seral old growth forest (LSOG) is an important component of a reserve system in the Klamath-Siskiyou (Strittholt et al. 1999, DellaSala et al. 1999). These forests supply unique habitat to a host of obligate species some of which are rare, threatened, endangered, sensitive, or of special concern. Late-seral forests may even include many

soil microbes and microrihzal fungi that have not yet been discovered by science (Noss 2000). Such forests help supply cool water for salmonid species and other aquatic organisms, as well as for downstream users such as fish, agriculture, and urban populations. They also help to keep sediment from entering streams and rivers by inhibiting mass wasting and erosion, while also supplying large down woody debris for instream structure, a primary component of salmonid habitat. Late-seral forest stands are also more resistant to disturbances such as fire and insect infestations than younger forests and can recover from these stochastic events faster than younger forests (DellaSala et al. 1995, DellaSala and Frost 2001). The top 10 PWA for LSOG are:

- | | |
|---------------------------|---------------|
| 1. Trinity Alps | 6. Chinquapin |
| 2. Marble Mountain | 7. Pattison |
| 3. Siskiyou | 8. Red Buttes |
| 4. Yolla Bolly Middle Eel | 9. Grindstone |
| 5. Girard Ridge | 10. Russian |

Salmonid bearing streams are also a valuable resource to protect in the region as populations of most salmonid species in California are listed as threatened or endangered (National Marine Fisheries Service, 2002). As part of the 1994 Northwest Forest Plan Process, existing watersheds with high quality aquatic habitat were chosen to be "key watersheds." These watersheds were chosen to protect areas with intact aquatic ecosystems as refugia for salmonids and other aquatic species. PWAs in key watershed, being both roadless and important to aquatic species, are the best refugia for these species and are especially important in the roll of recovering salmonid species. The top 10 PWAs for salmon are:

- | | |
|--------------------|---------------------------|
| 1. Trinity Alps | 6. South Fork Trinity |
| 2. Siskiyou | 7. North Fork Smith |
| 3. Marble Mountain | 8. Chinquapin |
| 4. Pattison | 9. Yolla Bolly Middle Eel |
| 5. Red Buttes | 10. Beegum |

Port Orford cedar (POC) is another important component of a reserve system for the Klamath-Siskiyou (Strittholt et al. 1999, DellaSala et al. 1999). Due to a devastating outbreak of a water-born root rot fungus (*Phytophthora lateralis*), which attacks POC and threatens the functional importance of the species, it is important to protect as much non-infected POC as possible. This would be especially true for roadless areas, where POC is still somewhat insulated from the fungus spreading by way of humans and motor vehicles (Strittholt and DellaSala 2001). Mud from infected areas contains spores of the deadly fungus, which can be picked up and spread via motor vehicles, bike tires, and boots. Once spread to uninfected areas, the fungus travels down hill infecting other areas. This demonstrates the importance of closing roads up slope from existing non-infected POC stands, and including PWAs with these stands in the wilderness legislation. Inclusion of PWAs that contain POC in the legislation may help save this species from extirpation and eventual extinction. The top 9 PWAs for POC are:

- | | |
|-----------------------|-----------------|
| 1. Siskiyou | 6. Fox Ridge |
| 2. North Fork Smith | 7. Rowdy Creek |
| 3. Kelly Peak | 8. Shelly Creek |
| 4. Ship Mountain | 9. Kalmiopsis |
| 5. Cant Hook Mountain | |

Including PWAs, which contain habitat for species, which are rare, threatened, endangered, or of special concern is critical in designing a reserve system. This assessment used EOs from the CNDDDB to determine which PWAs contained locations of these species. These areas are known as biodiversity “hot spots” and are important for maintaining a full range of all native species in the Klamath-Siskiyou ecoregion. Although there were not many EOs found within the PWAs we believe this is more due to the lack of survey effort, than to the EOs not being there. A more inclusive analysis using finer scale and more complete information is needed to determine how the PWAs contribute to these species in terms of their habitat needs. The top 10 PWAs for rare species are:

- | | |
|---------------------|---------------------------|
| 1. Trinity Alps | 6. China Mountain |
| 2. Mount Eddy | 7. Yolla Bolly Middle Eel |
| 3. Siskiyou | 8. Devil's Rock |
| 4. Marble Mountain | 9. Russian |
| 5. North Fork Smith | 10. Condrey Mountain |

Another important element to the Klamath-Siskiyou is its serpentine geology. Soil developed from serpentine rock is high in heavy metals and creates a harsh growing environment for plants. Because of this many rare plant and community types have evolved to grow in serpentinic soils. Since finer scale data for rare plants does not exist for the entire study area, inclusion of PWAs with serpentine, in wilderness legislation, may help protect many rare plant and community types that are highly correlated with these soil types. DellaSala et al. (1999), for instance, document the importance of serpentine soils, particularly those on the Siskiyou National Forest, as “hot spots” for rare and endemic plants, including many that are listed as threatened or sensitive by state or federal agencies. The top 10 PWAs for serpentine are:

- | | |
|---------------------|-------------------|
| 1. Siskiyou | 6. Ship Mountain |
| 2. North Fork Smith | 7. Red Buttes |
| 3. Mount Eddy | 8. China Mountain |
| 4. Marble Mountain | 9. Beegum |
| 5. Tom Martin | 10. Deer Mountain |

Representation

The GAP has analyzed each Holland vegetation community type to determine its rarity and level of protection by calculating how much of the species is currently protected in a protected area. It is important to include in the wilderness legislation, PWAs which contain Holland types that are rare and or under-represented in the current

reserve system. This will help satisfy the conservation goal of representing all native species across their natural range.

When considering the goal of representation, it is also important to look at elevation. Because of the predominance of higher elevation areas in the current wilderness system, lower elevation community types are under represented and are therefore, important to include in a reserve network. Mean elevation gives an approximation of the elevation of the overall area, but does not describe the differences of elevation within the PWA. PWAs with greater elevation ranges may potentially have a greater number of vegetation community types. By including in the legislation, lower elevation PWAs and those with greater elevation ranges, the amount of vegetation types that are under-represented in current protected areas will decrease. The 10 PWAs with the lowest mean elevations are:

1. Cant Hook Mountain
2. Rowdy Creek
3. Kalmiopsis
4. Devil's Rock
5. Horse Mountain
6. Kelly Peak
7. North Fork Smith
8. Backbone Total
9. Shelly Creek
10. East Fork Mountain

Ecosystem Process

The size of a PWA is another important factor to consider when designing a reserve system. Larger protected areas are more capable than smaller protected areas in absorbing and maintaining ecological process (i.e. population regulation and fire -an important ecological process in the Klamath-Siskiyou). These larger PWAs are also important to area dependant species (such as large carnivores), which require large areas of high quality habitat. When evaluating size of a PWA it is important to take into consideration the location of the PWA in relation to other PWAs and existing wilderness areas. If the PWA is smaller but adjacent to or in close proximity to another PWA or wilderness area, it may supply as much conservation value (in terms of size) to the reserve system as a larger PWA, which is more isolated. Building from and connecting together existing wilderness areas is of primary importance when designing a reserve system. And would help to tie together the existing wilderness areas into a more connected and complete reserve system for the Klamath-Siskiyou. The 10 largest PWAs are:

1. Trinity Alps
2. Marble Mountain
3. Siskiyou
4. Red Buttes
5. Grindstone
6. Yolla Bolly Middle Eel
7. Girard Ridge
8. Snow Mountain
9. Yuki
10. North Fork Smith

Elevation gradients also play an important roll in maintaining intact ecosystem processes. This is important because elevation gradients allow for vegetation communities and individual plant species to adjust to global climatic change. Where a species would have to migrate hundreds of miles moving horizontally north and south to maintain the same climate, a large elevation gradient allows an opportunity for migration

only hundreds of feet vertically to achieve the same results. The 10 PWAs with the largest elevation gradients are:

1. Mount Shasta
2. Trinity Alps
3. Marble Mountain
4. Siskiyou
5. Yolla Bolly Middle Eel
6. Tom Martin
7. Russian
8. Snow Mountain
9. Red Buttes
10. Yuki

Conclusion

Including the Klamath-Siskiyou PWAs into the wilderness system will greatly contribute to the reserve system of the ecoregion as noted by the earlier work of researchers on reserve design (Strittholt et al. 1999, Noss et al. 1999, Strittholt and DellaSala 2001). Special elements such as late-seral forests, POC, serpentine geology, salmon, and other important species would be afforded increased protection. Rare and under-represented vegetation community types will gain representation in protected areas. Because the PWAs form land bridges and linkages between existing wilderness areas, natural processes such as fire, predation, pollination, and migration may remain functional thereby maintaining the biodiversity of the region. The amount of increased protection the region would receive if the PWAs were designated, as wilderness, is vital in protecting the biodiversity of the Klamath-Siskiyou ecoregion.

We identified a range of ecological attributes documenting the importance of each PWA. PWAs varied in importance regarding their importance in special element occurrences, salmon habitat, representation, and adjacency (i.e., connectivity) to existing wilderness areas. The protection of all 48 PWAs would complement the existing wilderness areas in a way that establishes a reserve network based on fundamental principles in reserve design and conservation biology.

Future Work

For a more complete picture of the contribution the PWAs have to a reserve system, a more thorough analysis is recommended. First, the data gaps in this assessment need to be identified (i.e. lack of detail species data for PWAs in the CNDDDB), and additional data layers gathered. Examples of additional data layers that may be available are: Condor areas, Bald and Golden eagle areas, Peregrine falcon areas, Goshawk nest and groves, Survey and manage species, Marbled Murrelet areas, Northern Spotted Owl (NSO) locations, critical plant habitat areas, threatened and endangered reptile habitat, Big Horn Sheep areas, Fisher predictability, NSO predictability, California Native Plant Society electronic database, special interest areas, National Recreation Area, wild and scenic rivers, archaeological areas, botanical areas, geological areas, historic areas, scenic areas, zoological areas, research natural areas, game refuge and preserves, and late seral reserves. Once the additional data layers are identified and gathered the PWAs can be analyzed using more specific information for species and variables of conservation interest. If a larger region other than the Klamath-Siskiyou is analyzed, care will have to

be taken when determining the extent of the data gaps to be consistent with the variables and their geographic ranges.

Literature Cited

DellaSala, D.A., D.M. Olson, S. Barth, S. Crane, and S. Primm. 1995. Forest health: getting beyond the rhetoric to restore healthy landscapes in the Inland Northwest. *Wildlife Soc. Bull.* 23(3): 346-356.

DellaSala, D.A., S.B. Reid, T.J. Frest, J.R. Strittholt, and D.M. Olson. 1999. A global perspective on the biodiversity of the Klamath-Siskiyou ecoregion. *Natural Areas Journal* 19:300-319.

DellaSala, D.A., and E. Frost. 2001. An ecologically based strategy for fire and fuels management in National Forest roadless areas. *Fire Management Today* 61(2): 12-23.

Keeler-Wolf, T. 1993. Conserving California's Rare Plant Communities. *Fremontia* 22:14-22.

National Marine Fisheries Northwest Regional Office. 2002. Summary of Salmon and Steelhead listings. Accessed 26 March 2002 at:
<http://www.nwr.noaa.gov/1salmon/salmesa/pubs/1pgr.pdf>

Noss, R.F., J.R. Strittholt, K. Vance-Borland, C. Carroll, and P. Frost. 1999. A conservation plan for the Klamath-Siskiyou ecoregion. *Natural Areas Journal* 19(4):392-411.

Noss, R.F. 2000. *The Redwood Forest: History, Ecology, and Conservation of the Coast Redwoods*. Island Press. Washington, D.C.

Strittholt, J.R., R.F. Noss, P.A. Frost, K. Vance-Borland, C. Carrol, and G. Heilman. 1999. A conservation assessment and science-based plan for the Klamath-Siskiyou ecoregion. Conservation Biology Institute, Corvallis, OR. 113 pp.

Strittholt, J.R., D.A. Dellasala. 2001. Importance of Roadless Area's in Biodiversity Conservation in Forested Ecosystems: Case Study of the Klamath-Siskiyou Ecoregion of the United States. *Conservation Biology* 15:1742-1754.

Trombulak, S.C., C.A. Frissell. 2000. Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities. *Conservation Biology* 14:18-30.

Appendix A. Geographic Information System data layers used in the ecological assessment.

THEME	SCALE	SOURCE
Potential Wilderness Area's	1:24,000	Legacy – The Landscape Connection, 2001
Heritage Elements	1:24,000	California Natural Diversity Database, California Department of Fish and Game, October 1, 2001.
Salmonid Presence	1:24,000	Klamath National Forest, 2000 Mendocino National Forest, 1997 Rogue River National Forest, Unknown Shasta-Trinity National Forest, 1997 Six Rivers National Forest, 1997
Serpentine Geology	Mostly 1:24,000 (varies from 4,000 – 250,000)	Klamath National Forest, 2001
Port-Orford-Cedar	Unknown	Six Rivers National Forest, Unknown
Late Seral Forests	30 meter	Klamath Bioregional Assessment Project, Humboldt State University, 1994
Key Watersheds	Unknown	Regional Ecosystem Office, 1994
Elevation – Digital Elevation Model	30 meter	U.S. Geological Survey
Holland Vegetation Types	1:100,000	California Gap Analysis Project, 1998

Appendix B. Holland community types with state rarity rankings status and current percent representation for California.

CNDDDB Community Type (Holland)	CNDDDB Rating	Status 1&2 (% in CA)	Status 1 (% in CA)	Status 2 (% in CA)	Status 3 (% in CA)	Status 4 (% in CA)
Alluvial Redwood Forest	NR	5	1	4	8	87
Black Oak Forest	S4	8	6	2	45	47
Black Oak Woodland	S3.2	5	3	2	37	59
Blue Oak Woodland	S3.2	4	2	2	10	86
Bush Chinquapin Chaparral	S3.3	20	19	1	56	24
Canyon Live Oak Forest	S4	22	18	4	42	36
Cercocarpus ledifolius Woodland *	--	15	12	3	76	9
Chamise Chaparral	S4	13	11	2	29	57
Coast Range Mixed Coniferous Forest	S4	15	12	3	48	37
Coast Range Ponderosa Pine Forest	NR	23	7	16	32	46
Eastside Ponderosa Pine Forest	S2.1	3	2	1	67	31
Foothill Pine-Oak Woodland	S4	3	1	2	13	83
Great Basin Mixed Scrub	S4	8	5	3	70	22
Great Basin Woodlands		11	9	2	64	25
Huckleberry Oak Chaparral	S3.3	38	38	0	41	21
Interior Live Oak Forest	S4	4	2	2	16	81
Jeffrey Pine Forest	S4	22	20	2	67	11
Jeffrey Pine-Fir Forest	S4	30	29	1	58	12
Klamath-Cascade Fell-field	S4	95	95	0	4	1
Knobcone Pine Forest	S4	3	2	1	60	36
Lodgepole Pine Forest	S4	70	69	1	26	5
Mesic North Slope Chaparral	--	29	25	4	42	28
Mixed Evergreen Forest	S4	15	9	6	21	65
Mixed Montane Chaparral	S4	26	24	2	52	22
Mixed North Slope Cismontane Woodland	S3.2	2	1	1	20	79
Mixed Serpentine Chaparral		1	0	1	34	66
Montane Ceanothus Chaparral	--	14	12	2	51	35
Montane Meadow	S3.2	27	26	1	30	44
Non-Native Grassland	S4	5	1	4	7	88
Non-Serpentine Foothill Pine Woodland	S4	8	5	3	32	60
North Coast Black Cottonwood Riparian Forest	S1.1	1	0	1	40	59
North Coast Riparian Scrub	S3.2	4	1	3	8	88
Northern Mixed Chaparral	S4	8	6	2	44	48
Northern Ultramafic Jeffrey Pine Forest	S3.2	24	24	0	52	24
Open Foothill Pine Woodland	S4	11	7	4	21	68
Oregon Oak Woodland	S3.3	3	2	1	32	66
Port Orford Cedar Forest	S2.1	88	88	0	11	1
Red Fir Forest	S4	48	47	1	42	10
Salmon-Scott Enriched Coniferous Forest	S1.2	55	55	0	32	13
Scrub Oak Chaparral	S3.3	24	23	1	50	27
Serpentine Foothill Pine-Chaparral Woodland	S3.2	3	1	2	41	56
Shin Oak Brush	S3.3	16	11	5	48	36
Sierran Mixed Coniferous Forest	S4	9	8	1	49	42
Sierran White Fir Forest	S4	23	22	1	52	25
Siskyou Enriched Coniferous Forest	S1.2	44	44	0	49	7
Tan-Oak Forest	S4	7	6	1	35	58

Ultramafic Mixed Coniferous Forest	S4	16	7	9	74	10
Upland Douglas-Fir Forest	S3.1	17	13	4	15	68
Upland Redwood Forest	S2.3	13	5	8	5	83
Westside Ponderosa Pine Forest	S2.1	14	13	1	46	40
Whitebark Pine Forest	S4	61	59	2	39	1

California state rarity rankings:

S1 = extremely endangered: < 6 viable EO's or < 1,000 individuals, or < 2,000 acres of occupied habitat.

S2 = endangered: about 6-20 EO's, or 1,00 - 3,000 individual, or 2,000-10,000 acres of occupied habitat.

S3 = restricted range, rare: about 21 - 100 EO's, or 3,000 - 10,000 individuals, or 10,000 - 50,000 acres.

S4 = apparently secure: some factor exists to cause some concern such as narrow habitat or continuing threats.

S5 = demonstrably secure: commonly found throughout its historic range.

Threat ranks:

0.1 = Very threatened

0.2 = Threatened

0.3 = No current threats known