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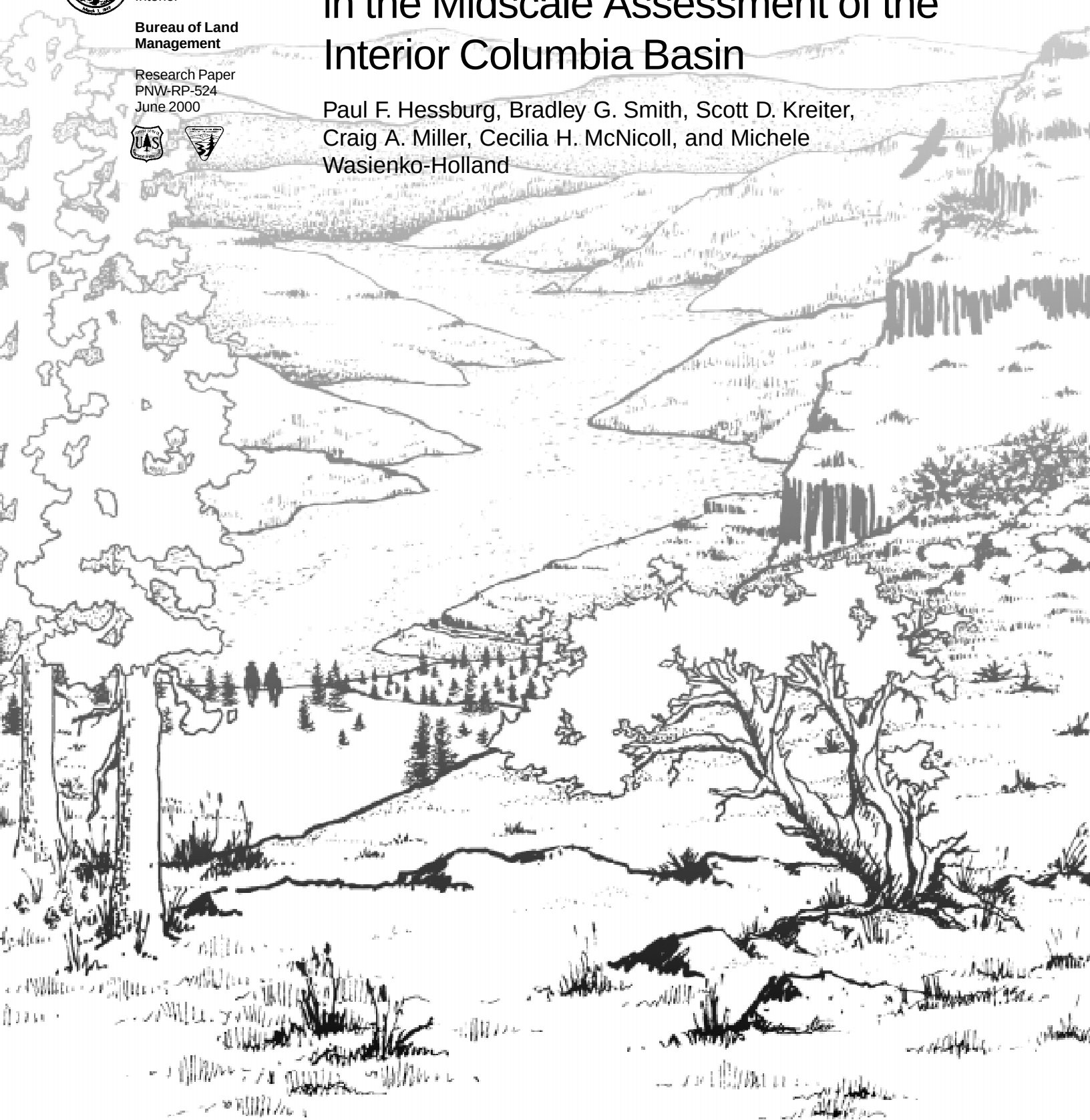
Classifying Plant Series-Level Forest Potential Vegetation Types: Methods for Subbasins Sampled in the Midscale Assessment of the Interior Columbia Basin

Paul F. Hessburg, Bradley G. Smith, Scott D. Kreiter, Craig A. Miller, Cecilia H. McNicoll, and Michele Wasienko-Holland



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Interior Columbia Basin Ecosystem Management Project: Scientific Assessment

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Abstract

Hessburg, Paul F. ; Smith, Bradley G.; Kreiter, Scott D.; Miller, Craig A.; McNicoll, Cecilia H.; Wasienko-Holland, Michele. 2000. Classifying plant series-level forest potential vegetation types: methods for subbasins sampled in the midscale assessment of the interior Columbia basin. Res. Pap. PNW-RP-524. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 59 p. (Quigley, Thomas, M., ed.; Interior Columbia Basin Ecosystem Management Project: scientific assessment).

In the interior Columbia River basin midscale ecological assessment, we mapped and characterized historical and current vegetation composition and structure of 337 randomly sampled subwatersheds (9500 ha average size) in 43 subbasins (404 000 ha average size). We compared landscape patterns, vegetation structure and composition, and landscape vulnerability to wildfires and 21 major forest insect and pathogen disturbances of historical and current forest vegetation coverages. We report on methods used to classify and map potential vegetation of individual patches of sampled subwatersheds at the plant level.

Keywords: Ecological assessment, interior Columbia River basin, potential natural vegetation, ecological site, site potential, potential vegetation type.

Summary

We mapped and characterized historical and current vegetation composition and structure of 337 randomly sampled subwatersheds (9500 hectares average size) in 43 of 164 total subbasins (404 000 hectares average size) within the interior Columbia River basin and portions of the Klamath and Great Basins. We compared landscape patterns, vegetation structure and composition, and landscape vulnerability to wildfires and 21 major forest insect and pathogen disturbances of sampled historical and current forest vegetation. Forest vegetation composition, structure, and patterns were derived from attributes interpreted and mapped from aerial photographs taken from 1932 to 1966 (historical) and from 1981 to 1993 (current). Areas with homogeneous vegetation composition and structure were delineated as patches to a minimum size of 4 hectares. Results of change analyses were reported for province-scale ecological reporting units. In this paper, we report on methods used to classify and map potential vegetation of individual patches of sampled subwatersheds at the plant-series level.

We mapped forest potential vegetation to frame our discussion of vegetation change by providing a basis to compare changes occurring in similar environmental settings in diverse geographic locations, to contrast differences in direction and magnitude of change as a function of site potential, and to estimate the influence of site potential on patch and landscape vulnerability to insect and pathogen disturbances. The dominant climatic or edaphic “climax” coniferous species of each forest patch was differentiated by using photointerpreted historical and current overstory and understory species composition attributes and elevation, slope, and aspect coverages generated from 90-meter digital elevation models of the sampled subbasins. Potential vegetation analysis was done separately for each subbasin containing sampled subwatersheds.

Preface

The Interior Columbia Basin Ecosystem Management Project (ICBEMP) was initiated by the Forest Service and the Bureau of Land Management to respond to several critical issues including, but not limited to, forest and rangeland health, anadromous fish concerns, terrestrial species viability concerns, and the recent decline in traditional commodity flows. The charter given to the project was to develop a scientifically sound, ecosystem-based strategy for managing the lands of the interior Columbia River basin administered by the Forest Service and the Bureau of Land Management. The Science Integration Team was organized to develop a framework for ecosystem management, a broad-scale assessment of the socioeconomic and biophysical systems in the basin, and an evaluation of alternative management strategies. The broad-scale assessment of the biophysical systems consisted of two parts: (1) a multiscale characterization of biophysical environments of the basin, and (2) a broad-scale landscape assessment of change in vegetation patterns and disturbance regimes of the basin. In addition to the broad-scale landscape assessment, a midscale landscape assessment was conducted to validate the results of the broad-scale landscape assessment at a scale appropriate to observing the vegetation pattern-disturbance process interactions. This paper is one in a series of four papers documenting the results of that midscale assessment.

The Science Integration Team, although organized functionally, worked hard at integrating the research approaches, analyses, and conclusions. It was the collective effort of the team that provided depth and understanding to the work of the project. The Science Integration Team leadership included deputy team leaders Russel Graham and Sylvia Arbelbide; landscape ecology—Wendel Hann, Paul Hessburg, and Mark Jensen; aquatic—Jim Sedell, Kris Lee, Danny Lee, Jack Williams, and Lynn Decker; economic—Richard Haynes, Amy Horne, and Nick Reyna; social science—Jim Burchfield, Steve McCool, and Jon Bumstead; terrestrial—Bruce Marcot, Kurt Nelson, John Lehmkuhl, Richard Holthausen, and Randy Hickenbottom; and broad-scale spatial analysis—Becky Gravenmier, John Steffenson, and Andy Wilson.

Thomas M. Quigley
Editor

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Interior Columbia Basin Ecosystem Management Project

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Introduction

In this paper, we describe methods used in the midscale (1:24,000) ecological assessment of the interior Columbia River basin to classify the environmental setting of individual patches of sampled subwatersheds. In the assessment (Hessburg et al. 1999a), we characterize recent historical and current vegetation composition and structure of 337 randomly sampled subwatersheds (9500 hectares average size), in 43 of 164 total subbasins (404 000 hectares average size), selected by two-stage stratified random draw on all ownerships within the interior Columbia River basin and portions of the Klamath and Great Basins. We compared landscape patterns, vegetation structure and composition, and landscape vulnerability to wildfire, insect, and pathogen disturbances of historical and current vegetation coverages.

For each selected subwatershed, we constructed historical and current vegetation maps from interpretations of 1932-66 and 1981-93 aerial photos (1:12,000), respectively. Areas with homogeneous vegetation attributes were delineated as patches to a minimum size of 4 hectares. We then attributed cover types (composition), structural classes (structure), and series-level potential vegetation types (site potential) to individual patches within subwatersheds by modeling procedures. We characterized change in vegetation spatial patterns by using a suite of class and landscape pattern metrics, and a spatial pattern analysis program. Finally, we translated change in vegetation patterns to change in landscape vulnerability to wildfires[1] and forest pathogen and insect disturbances (Hessburg et al. 1999b). Results of change analyses were reported for province-scale ecological reporting units (ERUs).

Environments similar in their climate, landforms, and geomorphic processes display a similar distribution of vegetation in the absence of disturbance (Arno et al. 1985, Steele and Geier-Hayes 1989). We termed this unique vegetation class the potential vegetation type (PVT). During the interior Columbia River basin midscale assessment, we classified and mapped forest PVTs to frame our discussion of vegetation change by providing a basis to compare changes occurring in similar environmental settings in diverse geographic locations, to contrast differences in direction and magnitude of change as a function of site potential, and to estimate the influence of site potential on patch and landscape vulnerability to insect and pathogen disturbances (Hessburg et al. 1999b). Here we present methods used to classify forest PVTs in sampled subbasins. This paper is a companion to Hessburg et al. 1999a and 1999b.

Methods

Forest PVTs were modeled at approximately the series level as that level is described in habitat type and plant association classifications throughout the Western United States (for example, see Lillybridge et al. 1995). As used here, a series is a conceptual grouping of related plant associations having the same predicted dominant “climax” conifer species in the absence of disturbance. The dominant climatic or edaphic climax coniferous species of each forest patch was estimated by using photointerpreted historical and current overstory and understory species composition attributes, and elevation, slope, and aspect coverages generated from 90-meter digital elevation models (DEMs) of the sampled subbasins.

In a geographical information system (GIS), we created a complex coverage for each sampled subwatershed from the intersection of a topographic theme, the photointerpreted current vegetation coverage, and the historical vegetation coverage. The topographic theme included elevation and aspect coverages constructed from 90-meters DEMs. Elevation ranging from 0 to 3962.4 meters was classified into 13 classes at 304.8-meter intervals. Aspect was grouped into five classes—N, E, S, W, and flat—corresponding to aspect values of 351-80°, 81-170°, 171-260°, 261-350° true, and no aspect where slope was <1 percent (flat), respectively. Each polygon in the complex coverage was attributed to elevation class, aspect class,

[1] Ottmar, R.D.; Alvarado, E; Hessburg, P.F. [and others]. In prep. Historical and current forest and range landscapes in the interior Columbia River basin and portions of the Klamath and Great Basins.

modal slope, and each of the current and historical photointerpreted attributes. Data were exported to a relational database for analysis.

Potential vegetation analysis was done separately for each subbasin containing sampled subwatersheds; it involved three modeling steps and a final map review step. First, attribute combinations were used to provisionally assign a likely PVT. Assignments generally were based on overstory and understory species identities (historical and current), but other attributes, such as elevation, slope, aspect, presence and type of visible logging, and riparian or wetland status, also were used occasionally. These rules were effective for determining the forest PVT of patches located in dry, moist, or cold forest environmental settings. They were not immediately useful in classifying PVTs of forest polygons with vegetation dominated by early seral species. For example, the presence of mountain hemlock (*Tsuga mertensiana* (Bong.) Carr.) as a dominant cover species in either pure or mixed compositions, in either the overstory or understory (current or historical, or both), was sufficient to assign a polygon to the mountain hemlock PVT. But polygons with Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco) as the principal cover species were not assigned a PVT at this step because Douglas-fir can be early to late seral depending on the biophysical setting. These patches were addressed in subsequent steps.

In a second step, probability rules were developed from PVT assignments made in the first step for all possible elevation and aspect class combinations. We tallied the area of all assigned polygons by PVT within combined elevation and aspect classes and then calculated the proportion of the total assigned area within a subbasin composed of each PVT-elevation-aspect class combination. Unassigned polygons then were assigned a probable PVT based on elevation, aspect, occasionally an early seral species identity, and the result of a uniform random number generator. Potential vegetation type labels for this step differed from those assigned in the first step such that assignments in either step could be revisited. For example, in a particular subbasin, the combination of elevation class = 609.7-914.4 meters and aspect class = N, the western hemlock (*T. heterophylla* (Raf.) Sarg.)/western redcedar (*Thuja plicata* Donn ex D. Don.) PVT occupied 50 percent of the assignable subbasin area in the first step, the Pacific silver fir (*Abies amabilis* Dougl. ex Forbes) PVT occupied 30 percent of the assignable area, and the Douglas-fir/grand fir (*A. grandis* Dougl. ex D. Don. Lindl.) PVT occupied 20 percent of the assignable area. These PVTs were assigned ranges of 1-50, 51-80, and 81-100, respectively. A random draw of 33 assigned an unassigned polygon of the same elevation-aspect class identity to the western hemlock/western redcedar PVT in the second step.

The Douglas-fir/grand fir, western hemlock/western redcedar, and subalpine fir (*A. lasiocarpa* (Hook.) Nutt.)/Engelmann spruce (*Picea engelmannii* Parry ex Engelm.) PVTs were defined at a series-group level, because photointerpretation could not discriminate Douglas-fir from grand fir, western hemlock from western redcedar, or subalpine fir from Engelmann spruce in the understory. In a third step, these series-groups were further split into cool-moist and warm-dry subgroups by using elevation and aspect rules based on published species distributions and local plant association and habitat type manuals. A cold-dry-harsh subgroup also was erected for the subalpine fir/Engelmann spruce PVT in the most harsh elevation and aspect conditions.

Once these three steps were completed, an initial PVT map of the subbasin was made in a GIS. This map was inspected visually for reasonable pattern, location, and setting of PVTs. The second step, above, occasionally would result in odd polygon assignments that were obvious when displayed on a map. These were manually converted to the type of the surrounding matrix. Some polygons were small slivers resulting from the initial series of map intersections used to create the complex topographic theme. A smoothing algorithm was applied in ARC/INFO (ESRI 1995) to merge these slivers into larger adjacent units. Polygon boundaries were dissolved to homogeneous PVT areas, and this became the final PVT map for the

subbasin. Forest potential vegetation types of midscale subbasins were ponderosa pine (*Pinus ponderosa* Dougl. ex Laws.), warm-dry and cool-moist variants of the Douglas-fir/grand fir (or Douglas-fir/white fir (*A. concolor* (Gord. & Glend.) Lindl. ex Hildebr.) PVT, warm-dry and cool-moist variants of the western hemlock/western redcedar PVT, Pacific silver fir, mountain hemlock, warm-dry, cool-moist, and cold-dry-harsh variants of the subalpine fir/Engelmann spruce PVT, whitebark pine (*P. albicaulis* Engelm.)/subalpine larch (*Larix lyalli* Parl.), Shasta red fir (*A. magnifica* A. Murr.), western juniper (*Juniperus occidentalis* Hook.)/Rocky Mountain juniper (*J. scopulorum* Sarg.), quaking aspen (*Populus tremuloides* Michx.), Oregon white oak (*Quercus garryana* Dougl. ex Hook), and edaphic lodgepole pine (*P. contorta* var. *latifolia* Dougl. ex Loud.). Time and resources did not allow for field verification of forest PVTs of each subbasin, but photointerpreted overstory and understory species composition values from the current vegetation coverage were checked and rectified as needed for all polygons where forest inventory and timber stand exam plot data were available. Ongoing comparisons between the photointerpreted raw vegetation attributes and inventory plot data enabled training and supervision of the remote sensing.

Complete classification rule sets for modeling forest potential vegetation types are provided below for each of 43 sampled subbasins. Attribute-based rules (hereafter, attribute rules) follow standard mathematical interpretations using the logical arguments **and** and **or**. For example, a rule stated for "*x* **and** *y*" means that both *x* and *y* have to be true for the rule to be true; a rule stated for "*x* **or** *y*" indicates that either *x* or *y* must be true for the rule to be true. Probability-based rules (hereafter, probability rules) are presented as integers between 0 and 100 (inclusive) in a table for each potential vegetation type (PVT) by elevation-aspect class combination. These numbers were used with a uniform random number generator[2] that produced a random value between 1 and 100 (inclusive) for each polygon. The aspect-elevation class for each polygon was then used to index the proper set of PVT probabilities. Subgroup rules for PVTs complete the rule set for each subbasin. Separate tables are supplied for each PVT.

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[2] Uniform random number generation and table processing were accomplished by using the LU_GEN program, which is available on request from the second author. Table values are supplied as Paradox tables; PVT assignments from the program are written to another Paradox table. (The use of trade or firm names in this publication is for reader information and does not imply endorsement by the U.S. Department of Agriculture of any product or service.)

Classification Rules

Big Wood Subbasin (BWD)

Table 1--Ordered attribute rules for potential vegetation type assignment in the Big Wood subbasin

Step	Potential vegetation type	Attribute rules
1	Aspen	Spp_os[1] = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 82 **and** spp_us_H = 0 or 28 or 29 or 82
2	Cottonwood	Spp_os = 0 or 61 or 62 **and** spp_os_H = 0 or 61 or 62 **and** spp_us_H = 0 or 28 or 29 or 82 or 83 **and** spp_us_H = 0 or 28 or 29 or 82 or 83
3	Lodgepole pine	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 **and** spp_us_H = 0 or 28 or 29 or 31
4	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 or 90 or 95 **or** spp_os_H = 7 or 19 or 51 or 72 or 90 or 95 **or** spp_us = 38 or 44 **or** spp_us_H = 38 or 44
5	Douglas-fir-grand fir	Spp_os = 0 or 4 or 61 or 78 **and** spp_os_H = 0 or 4 or 61 or 78 **and** spp_us = 0 or 22 or 28 or 29 or 82 **and** spp_us_H = 0 or 22 or 28 or 29 or 82

Table 2--Probability rules for potential vegetation type assignment in the Big Wood subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
6	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	11	55	21	15
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	90	83	69	63	59
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	--	92	83	67	80
	Douglas-fir-grand fir	--	100	100	100	100
10	Subalpine fir-Engelmann spruce	--	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

Table 3--Ordered subgroup rules by potential vegetation type in the Big Wood subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-Dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-Moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-Dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-Moist
Subalpine fir-Engelmann Spruce PVT		
1	All elevation and aspect combinations	Warm-Dry
1	Aspect = -1 and elevation = 7 and above	Cool-Moist
1	Aspect = 1 and elevation = 9 and above	Cool-Moist
1	Aspect = 2 and elevation = 10 and above	Cool-Moist
1	Spp_os = 95 **or** spp_os_H = 95	Harsh
1	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-Moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Bitterroot Subbasin (BTR)

Table 4--Ordered attribute rules for potential vegetation type assignment in the Bitterroot subbasin

Step	Potential vegetation type	Attribute rules
1	Ponderosa pine	Log_type[1] = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
2	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 or 86 **and** spp_us_H = 0 or 28 or 29 or 30 or 39 or 86
3	Lodgepole pine	Spp_os = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 or 86 **and** spp_os_H = 0 or 3 **and** spp_us_H = 0 or 28 or 29 or 30 or 31 or 86
4	Cottonwood	Spp_os = 0 or 60 or 61 or 62 or 80 **and** spp_os_H = 0 or 60 or 61 or 62 or 80 **and** spp_us = 0 or 28 or 29 or 30 or 82 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 82 or 83
5	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 71 or 72 or 90 or 92 or 95 **or** spp_os_H = 7 or 19 or 51 or 71 or 72 or 90 or 92 or 95 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44
6	Douglas-fir-grand fir	Spp_os = 1 or 17 or 70 **or** spp_os_H = 1 or 17 or 70 **or** spp_us = 20 or 32 or 33 **or** spp_us_H = 20 or 32 or 33

Table 5--Probability rules for potential vegetation type assignment in the Bitterroot subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	20	23	8	23	29
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	47	51	17	26	36
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	91	73	72	91
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	97	93	93	95	96
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	--	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

Table 6--Ordered subgroup rules by potential vegetation type in the Bitterroot subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Elevation class = 8	Cool-moist
3	Aspect[1] = -1 or 1 or 4 **and** elevation = 7	Cool-moist
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann Spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Elevation class = 8 and above	Cool-moist
3	Aspect = -1 or 1 **and** elevation = 6 or 7	Cool-moist
4	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Blackfoot Subbasin (BFM)

Table 7--Ordered attribute rules for potential vegetation type assignment in the Blackfoot subbasin

Step	Potential vegetation type	Attribute rules
1	Ponderosa pine	Log_type[1] = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
2	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
3	Lodgepole pine	Spp_os = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 or 86 **and** spp_os_H = 0 or 3 **and** spp_us_H = 0 or 26 or 28 or 29 or 30 or 31 or 86
4	Mountain hemlock	Spp_os = 18 **or** spp_os_H = 18 **or** spp_us = 36 or 37 **or** spp_us_H = 36 or 37
5	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 or 86 **and** spp_us_H = 0 or 28 or 29 or 30 or 39 or 86
6	Aspen	Spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 28 or 29 or 30 or 82
7	Cottonwood	Spp_os = 0 or 62 **and** spp_os_H = 0 or 62 **and** spp_us = 0 or 28 or 29 or 30 or 81 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 81 or 83
8	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 or 95 **or** spp_os_H = 7 or 19 or 51 or 72 or 95 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44
9	Douglas-fir-grand fir	Spp_os = 1 or 17 or 70 **or** spp_os_H = 1 or 17 or 70 **or** spp_us = 20 or 32 or 33 **or** spp_us_H = 20 or 32 or 33

Table 8--Probability rules for *PIPO_log*-labeled polygons for potential vegetation type assignment in the Blackfoot subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Ponderosa pine	4	--	10	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
6	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
7	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
8	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100

Table 9--Probability rules for potential vegetation type assignment in the Blackfoot subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Douglas-fir-grand fir	92	100	99	98	100
	Subalpine fir-Engelmann spruce	100	--	100	100	--
5	Douglas-fir-grand fir	27	65	53	77	73
	Subalpine fir-Engelmann spruce	100	100	100	100	100
6	Douglas-fir-grand fir	4	28	37	61	34
	Subalpine fir-Engelmann spruce	100	100	100	100	100
7	Douglas-fir-grand fir	--	4	12	8	2
	Subalpine fir-Engelmann spruce	100	100	100	100	100
8	Douglas-fir-grand fir	--	1	--	--	--
	Subalpine fir-Engelmann spruce	100	100	100	100	100
9	Douglas-fir-grand fir	--	--	--	--	--
	Subalpine fir-Engelmann spruce	100	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 10--Ordered subgroup rules by potential vegetation type in the Blackfoot subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 7 and above	Cool-moist
3	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 or 1 or 4 **and** elevation = 7 and above	Cool-moist
3	Aspect class = 2 or 4 **and** elevation = 8 or higher	Cool-moist
4	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Spp_os = 76 **or** spp_os_H = 76	Warm-dry
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Boise-Mores Subbasin (BOM)

Table 11--Ordered attribute rules for potential vegetation type assignment in the Boise-Mores subbasin

Step	Potential vegetation type	Attribute rules
1	Aspen	Spp_os [1] = 0 or 61 **and** spp_os_H = 0 or 61
2	Cottonwood	Spp_os = 0 or 61 or 62 **and** spp_os_H = 0 or 61 or 62
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
4	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
5	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 26 or 28 or 29 or 30 or 31
6	Subalpine fir-Engelmann spruce	Spp_os = 7 or 72 or 90 **or** spp_os_H = 7 or 72 or 90 **or** spp_us = 25 **or** spp_us_H = 25
7	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 33 **or** spp_us_H = 20 or 33

Table 12--Probability rules for *PIPO_log*-labeled polygons for potential vegetation type assignment in the Boise-Mores subbasin

		Aspect class				
Elevation class[1]	Potential vegetation type	Flat	NE	SE	SW	NW
4	Douglas-fir-grand fir	50	82	44	44	74
	Ponderosa pine	100	100	100	100	100
5	Douglas-fir-grand fir	--	94	74	74	91
	Ponderosa pine	100	100	100	100	100
6	Douglas-fir-grand fir	--	97	92	86	96
	Ponderosa pine	100	100	100	100	100
7	Douglas-fir-grand fir	--	95	97	89	98
	Ponderosa pine	100	100	100	100	100
8	Douglas-fir-grand fir	--	100	100	99	92
	Ponderosa pine	--	--	--	100	100
9	Douglas-fir-grand fir	--	100	100	100	100
	Ponderosa pine	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] *PIPO_log* was used as a temporary label for polygons that would be assign to a PVT using probabilities below. These were polygons with ponderosa pine as an overstory cover species and indications of visible logging activity.

Table 13--Probability rules for potential vegetation type assignment in the Boise-Mores subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	--	6	4	6	6
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	--	51	42	25	38
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	--	74	80	43	56
	Douglas-fir-grand fir	--	100	100	100	100
9	Subalpine fir-Engelmann spruce	--	86	86	78	93
	Douglas-fir-grand fir	--	100	100	100	100

Table 14---0rdered subgroup rules by potential vegetation type in the Boise-Mores subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet [1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = 1 **and** elevation = 7 and above	Cool-moist
3	Aspect class = 2 or 4 **and** elevation = 8 and above	Cool-moist
4	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = 1 **and** elevation = 7 and above	Cool-moist
3	Aspect class = 2 or 4 **and** elevation = 8 or higher	Cool-moist
4	Aspect class = 3 **and** elevation = 9 or higher	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Burnt Subbasin (BUR)

Table 15--Ordered attribute rules for potential vegetation type assignment in the Burnt subbasin

Step	Potential vegetation type	Attribute rules
1	Hardwood	Spp_os [1] = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 **and** spp_us_H = 0 or 26 or 28 or 29
2	Juniper	Spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 27 or 28 or 29 **and** spp_us_H = 0 or 27 or 28 or 29
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29
4	Douglas-fir-white fir-grand fir	Spp_os = 1 or 4 or 17 or 54 or 78 **or** spp_os_H = 1 or 4 or 17 or 54 or 78 **or** spp_us = 20 or 22 or 32 or 33 or 43 **or** spp_us_H = 20 or 22 or 32 or 33 or 43

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 16--Probability rules for potential vegetation type assignment in the Burnt subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Douglas-fir-white fir-grand fir	90	94	87	92	95
	Ponderosa pine	100	100	100	100	100
5	Douglas-fir-white fir-grand fir	89	95	92	90	90
	Ponderosa pine	100	100	100	100	100
6	Douglas-fir-white fir-grand fir	100	99	98	96	97
	Ponderosa pine	--	100	100	100	100
7	Douglas-fir-white fir-grand fir	100	99	99	93	93
	Ponderosa pine	--	100	100	100	100

Table 17--Ordered subgroup rules by potential vegetation type in the Burnt subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet [1] = 1 **or** ripr_wet_H = 1	Cool-moist

Crooked Rattlesnake Subbasin (CRT)

The Crooked Rattlesnake subbasin did not contain any forested polygons for PVT modeling.

Donner und Blitzen Subbasin (DUB)

Table 18--Ordered attribute rules for potential vegetation type assignment in the Donner und Blitzen subbasin

Step	Potential vegetation type	Attribute rules
1	Cottonwood	Spp_os[1] = 62 **or** spp_os_H = 62
2	Aspen	Spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 28 or 29 or 30 or 82
3	Juniper	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27

Table 19--Ordered subgroup rules by potential vegetation type in the Donner und Blitzen subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist

Flint-Rock Subbasin (FLR)

Table 20--Ordered attribute rules for potential vegetation type assignment in the Flint-Rock subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 18 **or** spp_os_H = 18
2	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **and** spp_us_H = 0 or 28 or 29 or 30 or 39
3	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 or 76 or 90 or 95 **or** spp_os_H = 7 or 19 or 51 or 72 or 76 or 90 or 95 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
4	Limber pine	Spp_os = 0 or 55 **and** spp_os_H = 0 or 55 **and** spp_us = 0 or 29 **and** spp_us_H = 0 or 29
5	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 26 or 28 or 29 or 30 or 31
6	Douglas-fir-grand fir	Spp_os = 0 or 4 **and** spp_os_H = 0 or 4 **and** spp_us = 0 or 22 or 28 or 29 or 30 **and** spp_us_H = 0 or 22 or 28 or 29 or 30
7	Douglas-fir-grand fir	Spp_os = 70 **or** spp_os_H = 70
8	Whitebark pine-subalpine larch	Spp_os = 10 **or** spp_os_H = 10

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 21--Probability rules for potential vegetation type assignment in the Flint-Rock subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
6	Subalpine fir-Engelmann spruce	40	14	10	50	74
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	25	36	43	46	45
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	50	77	88	69	72
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	--	--	100	100	--
	Douglas-fir-grand fir	--	--	--	--	--

Table 22--Ordered subgroup rules by potential vegetation type in the Flint-Rock subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 7 or higher	Cool-moist
3	Aspect class = 1 **and** elevation = 8 or higher	Cool-moist
4	Aspect class = 2 **and** elevation = 9 or higher	Cool-moist
5	Spp_os = 10 or 76 or 95 **or** spp_os_H = 10 or 76 or 95 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Kettle and San Poil Subbasins (KET and SPO)

Table 23--Ordered attribute rules for potential vegetation type assignment in the Kettle and San Poil subbasins

Step	Potential vegetation type	Attribute rules
1	Western hemlock-western redcedar	Spp_os[1] = 8 **or** spp_us = 23 **or** spp_os_H = 8 **or** spp_us_H = 23
2	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 **or** spp_os_H = 7 or 19 or 51 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
4	Aspen	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **and** spp_us_H = 0 or 26 or 28 or 29 or 30
5	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 32 or 33 **or** spp_us_H = 20 or 32 or 33
6	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
7	Douglas-fir-grand fir	All remaining polygons in SPO subwatersheds 30A and 140A.

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] *PIPO_log* was used as a temporary placeholder for polygons that would be assign to PVT using probabilities below. These were polygons with ponderosa pine and indications of logging activity.

Table 24--Probability rules for *PIPO_log* group reassignment in the Kettle and San Poil subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	1	1	3	22	1
	Douglas-fir-grand fir	100	100	100	100	100
3	Ponderosa pine	1	1	2	8	8
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	1	1	6	9	2
	Douglas-fir-grand fir	100	100	100	100	100
5	Ponderosa pine	--	1	2	4	2
	Douglas-fir-grand fir	100	100	100	100	100
6	Ponderosa pine	--	--	2	1	--
	Douglas-fir-grand fir	100	100	100	100	100
7	Ponderosa pine	--	--	14	6	--
	Douglas-fir-grand fir	100	100	100	100	100

Table 25--Probability rules for potential vegetation type assignment in the KET50 subwatershed of the Kettle subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Western hemlock-western redcedar	--	1	2	5	--
	Subalpine fir-Engelmann spruce	3	5	4	10	1
	Douglas-fir-grand fir	100	100	100	100	100
3	Western hemlock-western redcedar	1	5	3	--	--
	Subalpine fir-Engelmann spruce	17	20	11	11	11
	Douglas-fir-grand fir	100	100	100	100	100
4	Western hemlock-western redcedar	3	9	7	6	5
	Subalpine fir-Engelmann spruce	42	31	20	18	27
	Douglas-fir-grand fir	100	100	100	100	100
5	Western hemlock-western redcedar	1	13	3	3	2
	Subalpine fir-Engelmann spruce	41	56	31	24	31
	Douglas-fir-grand fir	100	100	100	100	100
6	Western hemlock-western redcedar	--	3	1	--	--
	Subalpine fir-Engelmann spruce	85	66	48	53	75
	Douglas-fir-grand fir	100	100	100	100	100
7	Western hemlock-western redcedar	--	--	--	--	--
	Subalpine fir-Engelmann spruce	100	88	69	57	93
	Douglas-fir-grand fir	--	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 26--Probability rules for potential vegetation type assignment of remaining subwatersheds in the Kettle and San Poil subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	3	4	2	6	1
	Douglas-fir-grand fir	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	16	16	8	11	11
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	15	25	14	13	23
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	42	49	29	21	29
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	85	65	48	53	75
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	88	71	57	93
	Douglas-fir-grand fir	--	100	100	100	100

Table 27--Ordered subgroup rules by potential vegetation type in the Kettle and San Poil subbasins

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 2 **and** all elevations	Cool-moist
3	Aspect class = 3 or 4 **and** elevation = 6 or 7	Cool-moist
4	Aspect class = 4 **and** elevation = 5	Cool-moist
5	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 4 or 5 or 6 or 7	Cool-moist
3	Aspect class = 1 or 2 or 4 **and** elevation = 5 or 6 or 7	Cool-moist
4	Aspect class = 3 **and** elevation = 7	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 2 or 3	Warm-dry
3	Aspect class = 3 **and** elevation = 4 or 5	Warm-dry
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Lake Walcott Subbasin (LWC)

Table 28--Ordered attribute rules for potential vegetation type assignment in the Lake Walcott subbasin

Step	Potential vegetation type	Attribute rules
1	Juniper	Spp_os[1] = 0 or 13 or 64 **and** spp_os_H = 0 or 13 or 64 **and** spp_us = 0 or 27 or 28 or 29 **and** spp_us_H = 0 or 27 or 28 or 29
2	Aspen	Spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 **and** spp_us_H = 0 or 28 or 29
3	Cottonwood	Spp_os = 0 or 61 or 62 or 94 **and** spp_os_H = 0 or 61 or 62 or 94 **and** spp_us = 0 or 28 or 29 or 83 **and** spp_us_H = 0 or 28 or 29 or 83
4	Douglas-fir-grand fir	Spp_os = 4 or 13 **or** spp_os_H = 4 or 13 **or** spp_us = 22 **or** spp_us_H = 22

Table 29--Ordered subgroup rules by potential vegetation type in the Lake Walcott subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Lemhi Subbasin (LMH)

Table 30--Ordered attribute rules for potential vegetation type assignment in the Lemhi subbasin

Step	Potential vegetation type	Attribute rules
1	Lodgepole pine	Log_type[1] = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
2	Aspen	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 28 or 29 or 30 or 82
3	Cottonwood	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 16 or 62 **and** spp_os_H = 0 or 61 or 62 **and** spp_us = 0 or 28 or 29 or 30 or 81 or 82 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 81 or 82 or 83
4	Lodgepole pine	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
5	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 or 90 or 95 **or** spp_os_H =7 or 19 or 51 or 72 or 90 or 95 **or** spp_us = 25 or 38 or 39 or 44 **or** spp_us_H = 25 or 38 or 39 or 44
6	Douglas-fir-grand fir	Spp_os = 0 or 4 or 17 or 78 **and** spp_os_H = 0 or 4 or 17 or 78 **and** spp_us = 0 or 22 or 28 or 29 or 30 **and** spp_us_H = 0 or 22 or 28 or 29 or 30

Table 31--Probability rules for potential vegetation type assignment in subwatershed LMH1201 of the Lemhi subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
All	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 32--Probability rules for potential vegetation type assignment in remaining subwatersheds of the Lemhi subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
6	Subalpine fir-Engelmann spruce	--	--	--	--	50
	Douglas-fir-grand fir	--	--	--	100	100
7	Subalpine fir-Engelmann spruce	38	6	1	8	1
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	71	37	33	23	30
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	100	77	77	69	75
	Douglas-fir-grand fir	--	100	100	100	100
10	Subalpine fir-Engelmann spruce	100	99	98	98	99
	Douglas-fir-grand fir	--	100	100	100	100
11	Subalpine fir-Engelmann spruce	--	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

Table 33--Ordered subgroup rules by potential vegetation type in the Lemhi subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = 1 or 2 or 4 **and** elevation = 9 and above	Cool-moist
3	Aspect class = 3 **and** elevation = 10 and above	Cool-moist
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 or 1 or 2 or 4 **and** elevation = 9 and above	Cool-moist
3	Aspect class = 3 **and** elevation = 10 and above	Cool-moist
4	Spp_os = 95 **or** spp_os_H = 95 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Little Deschutes, Lower Crooked River, and Upper Deschutes Subbasins (LDS, LCR and UDS)

Table 34--Ordered attribute rules for potential vegetation type assignment in the Little Deschutes, Lower Crooked River, and Upper Deschutes subbasins

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 or 18 or 50 **or** spp_os_H = 9 or 18 or 50 **or** spp_us = 24 or 35 or 36 or 37 **or** spp_us_H = 24 or 35 or 36 or 37
2	Shasta red fir	Spp_os = 15 **or** spp_os_H = 15 **or** spp_us = 40 **or** spp_us_H = 40
3	Pacific silver fir	Spp_os = 6 **or** spp_os_H = 6
4	Juniper	Spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 27 or 28 or 29 or 30 **and** spp_us_H = 0 or 27 or 28 or 29 or 30
5	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 or 13 **and** spp_os_H = 0 or 1 or 13 **and** spp_us = 0 or 20 or 27 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 27 or 28 or 29 or 30
6	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 **and** spp_us_H = 0 or 28 or 29 or 30
7	Douglas-fir-white fir-grand fir	Spp_os = 13 or 17 **or** spp_os_H 13 or 17 **or** spp_us = 27 or 33 **or** spp_us_H = 27 or 33
8	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 **or** spp_os_H 7 or 19 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
9	Douglas-fir-white fir-grand fir	Spp_os = 1 or 16 or 17 (**not** 3 or 19 or 53) **or** spp_os_H = 1 or 16 or 17 (**not** 3 or 19 or 53) **or** spp_us = 20 or 33 (**not** 31 or 32 or 36 or 38) **or** spp_us_H = 20 or 33 (**not** 31 or 32 or 36 or 38)
10	Douglas-fir-white fir-grand fir	[Dry][2] spp_os = 4 or 5 **or** spp_os_H = 4 or 5 **or** spp_us = 33 or 34 **or** spp_us_H = 33 or 34
11	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
12	Lodgepole pine	Aspect class = -1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
13	Douglas-fir-white fir-grand fir	[Dry][2] spp_os = 2 or 53 **or** spp_os_H = 2 or 53 **or** spp_us = 21 **or** spp_us_H = 21
14	Douglas-fir-white fir-grand fir	[Wet][3] elevation class 4 and below
15	Douglas-fir-white fir-grand fir	[Wet][3] spp_os = 2 or 4 or 5 or 11 **or** spp_os_H = 2 or 4 or 5 or 11 **or** spp_us = 22 or 34 or 41 **or** spp_us_H = 22 or 34 or 41
16	*PICO*[4]	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] [Dry] Rule applies only to subwatersheds assigned to a “dry” group: LCR014, LCR016, LCR020, LCR021, LCR56, LDS45, LDS52, LDSD6, UDS43, and UDS47.

[3] [Wet] Rule applies only to subwatersheds assigned to a “wet” group: LDS32, LDS37, LDS38, UDS04, UDS05, UDS12, UDS13, UDS17, UDS18, UDS21, UDS30, and UDSM5.

[4] *PICO* was a temporary label for polygons containing pure lodgepole pine that were not assigned to classes using the above rules. These polygons were assigned using the probability table 36 above.

Table 35--Probability rules for potential vegetation type assignment of remaining polygons in subwatersheds LCR014, LCR016, LCR020, LCR021, LCR56, LDS45, LDS52, LDSD6, UDS43, and UDS47 in the Little Deschutes, Lower Crooked River, and Upper Deschutes subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
5	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Lodgepole pine	27	1	--	1	3
	Ponderosa pine	88	68	42	56	69
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Lodgepole pine	68	10	12	6	7
	Ponderosa pine	79	65	41	39	52
	Douglas-fir-white fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	64	15	38	--	8
	Lodgepole pine	--	24	40	13	9
	Ponderosa pine	--	28	44	32	15
	Douglas-fir-white fir-grand fir	100	100	100	100	100

Table 36--Probability rules for potential vegetation type assignment for polygons with the *PICO* label in the Little Deschutes, Lower Crooked River, and Upper Deschutes subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Shasta red fir	--	--	--	--	--
	Lodgepole pine	--	--	--	--	--
	Douglas-fir-white fir-grand fir	94	92	93	99	100
	Mountain hemlock	100	100	100	100	--
5	Shasta red fir	--	3	1	--	--
	Lodgepole pine	67	23	19	26	20
	Douglas-fir-white fir-grand fir	76	43	42	56	91
	Mountain hemlock	100	100	100	100	100
6	Shasta red fir	--	3	1	2	2
	Lodgepole pine	3	5	2	5	5
	Douglas-fir-white fir-grand fir	--	13	6	11	17
	Mountain hemlock	100	100	100	100	100
7	Shasta red fir	--	--	3	2	1
	Lodgepole pine	--	--	--	--	--
	Douglas-fir-white fir-grand fir	--	--	--	3	2
	Mountain hemlock	100	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 37--Probability rules for potential vegetation type assignment of remaining polygons in subwatersheds LDS32, LDS37, LDS38, UDS04, UDS05, UDS12, UDS13, UDS17, UDS18, UDS21, UDS30, and UDSM5 in the Little Deschutes, Lower Crooked River, and Upper Deschutes subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Lodgepole pine	--	--	--	--	--
	Ponderosa pine	88	48	62	80	54
	Douglas-fir-white fir-grand fir	100	100	100	100	100
5	Lodgepole pine	82	38	31	28	21
	Ponderosa pine	92	62	61	67	27
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Lodgepole pine	42	19	25	30	20
	Ponderosa pine	--	24	28	42	24
	Douglas-fir-white fir-grand fir	100	100	100	100	100
7	Lodgepole pine	--	17	38	19	--
	Ponderosa pine	48	100	51	41	3
	Douglas-fir-white fir-grand fir	100	--	100	100	100

Table 38--Ordered subgroup rules by potential vegetation type in the Little Deschutes, Lower Crooked River, and Upper Deschutes subbasins

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 2 or 3 or 4 **and** elevation = 3	Warm-dry
3	Aspect class = 3 or 4 **and** elevation = 4 or 5	Warm-dry
4	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27	Warm-dry
5	Spp_os = 5 **or** spp_os_H = 5 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Lochsa Subbasin (LOC)

Table 39--Ordered attribute rules for potential vegetation type assignment in the Lochsa subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 or 18 **or** spp_os_H = 9 or 18 **or** spp_us = 37 **or** spp_us_H = 37
2	Western hemlock-western redcedar	Spp_os = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
3	Whitebark pine-subalpine larch	Spp_os = 0 or 10 or 95 **and** spp_os_H = 0 or 10 or 95 **and** spp_us = 0 or 28 or 29 or 30 or 39 **and** spp_us_H = 0 or 28 or 29 or 30 or 39
4	Subalpine fir-Engelmann spruce	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95 **or** spp_us = 39 **or** spp_us_H = 39
5	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 67 or 71 or 72 **or** spp_os_H = 7 or 19 or 67 or 71 or 72 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
6	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 33 **or** spp_us_H = 33
7	Douglas-fir-grand fir	Spp_os = 0 or 4 or 5 or 54 or 65 or 66 or 73 or 74 or 75 or 78 or 93 **and** spp_os_H = 0 or 4 or 5 or 54 or 65 or 66 or 73 or 74 or 75 or 78 or 93 **and** spp_us = 0 or 22 or 28 or 29 or 31 or 34 or 43 or 85 **and** spp_us_H =0 or 22 or 28 or 29 or 31 or 34 or 43 or 85
8	Lodgepole pine	Aspect class = -1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 **and** spp_us_H = 0 or 28 or 29 or 31
9	Douglas-fir-grand fir	Spp_os = 0 or 4 or 5 or 75 (**not** 51 or 77 or 92) **or** spp_os_H = 0 or 4 or 5 or 75 (**not** 51 or 77 or 92) **or** spp_us = 0 or 22 or 34 (**not** 44) **or** spp_us_H = 0 or 22 or 34 (**not** 44)

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 40--Probability rules for potential vegetation type assignment in the Lochsa subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	53	1	7	3	3
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	41	35	17	28	10
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	97	91	88	67	72
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	98	91	81	89
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	100	91	69	97
	Douglas-fir-grand fir	--	--	100	100	100
9	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

Table 41--Ordered subgroup rules by potential vegetation type in the Lochsa subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 **and** elevation = 2 and above	Cool-moist
3	Aspect class = 1 or 4 **and** elevation = 4 and above	Cool-moist
4	Aspect class = 2 or 3 **and** elevation = 5 and above	Cool-moist
5	Spp_os = 5 or 66 or 74 or 75 or 93 **or** spp_os_H = 5 or 66 or 74 or 75 or 93 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1	Cool-moist
3	Aspect class = 1 or 2 or 4 **and** elevation = 6 and above	Cool-moist
4	Aspect class = 3 **and** elevation = 7 and above	Cool-moist
5	Aspect class = 1 or 2 or 4 **and** elevation = 6 and above	Cool-moist
6	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
7	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 or 1 or 4 **and** elevation = 3 and above	Cool-moist
3	Aspect class = 2 or 3 **and** elevation = 4 and above	Cool-moist
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Lost Subbasin (LST)

Table 42--Ordered attribute rules for potential vegetation type assignment in the Lost subbasin

Step	Potential vegetation type	Attribute rules
1	Juniper	Spp_os[1] = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 26 or 27 or 28 or 29 **and** spp_us_H = 0 or 26 or 27 or 28 or 29
2	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 or 13 **and** spp_os_H = 0 or 1 or 13 **and** spp_us = 0 or 20 or 27 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 27 or 28 or 29 or 30
3	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or **1 and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
4	Douglas-fir-white fir-grand fir	Spp_os = 1 or 17 or 70 or 91 **or** spp_os_H = 1 or 17 or 70 or 91 **or** spp_us = 20 or 33 **or** spp_us_H =20 or 33

Table 43--Probability rules for potential vegetation type assignment for *PIPO_log*-labeled and other polygons in the Lost subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
5	Ponderosa pine	95	96	90	92	99
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Ponderosa pine	77	74	64	75	77
	Douglas-fir-white fir-grand fir	100	100	100	100	100
7	Ponderosa pine	29	29	58	61	23
	Douglas-fir-white fir-grand fir	100	100	100	100	100
8	Ponderosa pine	--	--	--	--	--
	Douglas-fir-white fir-grand fir	100	100	100	100	100

Table 44--Ordered subgroup rules by potential vegetation type in the Lost subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 4 **or** elevation = 6 and above	Cool-moist
3	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27	Warm-dry
4	Spp_os = 5 or 91 **or** spp_os_H = 5 or 91 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] *PIPO_log* is a temporary class that is resolved with a probability rule set below. These polygons had ponderosa pine or pine mixed with juniper but with some visible logging activity.

Lower Crooked River Subbasin (LCR)

The Lower Crooked River Subbasin was treated with the Little Deschutes and Upper Deschutes Subbasins above.

Lower Flathead Subbasin (LFH)

Table 45--Ordered attribute rules for potential vegetation type assignment in the Lower Flathead subbasin

Step	Potential vegetation type	Attribute rules
1	Western hemlock-western redcedar	Spp_us[1] = 23 **or** spp_us_H = 23
2	Rocky Mountain juniper	Spp_os = 0 or 139 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 27 or 28 or 29 or 30 **or** spp_us_H = 0 or 27 or 28 or 29 or 30
3	Cottonwood	Spp_os = 0 or 62 **and** spp_os_H = 0 or 62 **and** spp_us = 0 or 28 or 29 or 30 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 83
4	Ponderosa pine	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1
5	Lodgepole pine	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1
6	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **or** spp_us_H = 0 or 28 or 29 or 30 or 39
7	Subalpine fir-Engelmann spruce	Spp_os = 7 or 10 or 19 or 51 or 72 or 90 or 95 **or** spp_os_H = 7 or 10 or 19 or 51 or 72 or 90 or 95 **or** spp_us = 25 or 38 or 39 or 44 **or** spp_us_H = 25 or 38 or 39 or 44
8	Douglas-fir-grand fir	Spp_os = 1 or 17 or 70 **or** spp_os_H = 1 or 17 or 70 **or** spp_us = 20 or 32 or 33 **or** spp_us_H =20 or 32 or 33
9	Douglas-fir-grand fir	Spp_os = 0 or 4 **and** spp_os_H = 0 or 4 **and** spp_us = 0 or 22 or 28 or 29 or 30 **and** spp_us_H = 0 or 22 or 38 or 29 or 30

Table 46--Probability rules for potential vegetation type assignment in subwatersheds LFH1202, LFH1203, LFH1501, LFH1601, LFH1702, LFH2102, and LFH2203 of the Lower Flathead subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Douglas-fir-grand fir	97	82	56	35	90
	Ponderosa pine	100	100	100	100	100
4	Douglas-fir-grand fir	99	93	98	99	99
	Ponderosa pine	100	100	100	100	100
5	Douglas-fir-grand fir	--	--	--	--	--
	Ponderosa pine	100	100	100	100	100

Table 47--Probability rules for potential vegetation type assignment in subwatersheds LFH0701, LFH0801, LFH0803, LFH0901, LFH0902, and LFH1302 of the Lower Flathead subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Subalpine fir-Engelmann spruce	4	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	100	60	11	31	38
	Douglas-fir-grand fir	--	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	93	68	61	77
	Douglas-fir-grand fir	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	97	95	87	95
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	97	98	92	98
	Douglas-fir-grand fir	--	100	100	100	100
9	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 48--Ordered subgroup rules by potential vegetation type in the Lower Flathead subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 **and** elevation = 4 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 5 and above	Cool-moist
4	Spp_os = 75 **or** spp_os_H = 75	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 or 1 or 2 or 4 **and** elevation = 7 and above	Cool-moist
3	Aspect class = 3 **and** elevation = 9 and above	Cool-moist
4	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist

Lower Grande Ronde, Upper Grande Ronde, Wallow Subbasins (LGR, UGR and WAL)

Table 49--Ordered attribute rules for potential vegetation type assignment in the Lower Grande Ronde, Upper Grande Ronde, and Wallowa subbasins

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock[1]	Spp_os[2] = 9 or 18 or 50 **or** spp_os_H = 9 or 18 or 50 **or** spp_us = 24 or 35 or 37 **or** spp_us_H = 24 or 35 or 37
2	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 **or** spp_os_H =7 or 19 or 51 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
3	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **and** spp_us_H = 0 or 28 or 29 or 30 or 39
4	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 26 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 26 or 28 or 29 or 30
5	Douglas-fir-grand-fir	Spp_os = 1 or 17 or 70 or 91 **or** spp_os_H = 1 or 17 or 70 or 91 **or** spp_us = 20 **or** spp_us_H = 20
6	Lodgepole pine	Aspect class = -1 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 31 or 28 or 29 or 30 **and** spp_us_H = 0 or 31 or 28 or 29 or 30
7	Douglas-fir-grand-fir	Spp_os = 1 **or** spp_os_H = 1 **or** spp_us = 20 **or** spp_us_H = 20
8	*PIPO_log*[3]	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 26 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 26 or 28 or 29 or 30

[1] These polygons all occur in areas other than known locations for mountain hemlock in these subbasins. We retained them as identified in the database as their area was small.

[2] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[3] *PIPO_log* was a temporary place holder for polygons that were assigned special probability processing. These were polygons with ponderosa pine and visible logging activity. They could reside within ponderosa pine, or Douglas-fir-grand fir PVTs.

Table 50--Probability rules for *PIPO_log*-labeled polygon potential vegetation type assignment in the Lower Grande Ronde, Upper Grande Ronde, and Wallowa subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	100	20	--	--	--
	Douglas-fir-grand fir	--	100	100	100	100
3	Ponderosa pine	9	9	9	7	5
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	1	5	5	8	7
	Douglas-fir-grand fir	100	100	100	100	100
5	Ponderosa pine	1	6	7	8	7
	Douglas-fir-grand fir	100	100	100	100	100
6	Ponderosa pine	6	3	4	4	1
	Douglas-fir-grand fir	100	100	100	100	100
7	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
8	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100

Table 51--Probability rules for potential vegetation type assignment in the Lower Grande Ronde, Upper Grande Ronde, and Wallowa subbasins

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-white fir-grand fir	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	4	1	--	2	1
	Douglas-fir-white fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	4	3	2	2	2
	Douglas-fir-white fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	8	11	6	7	7
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	72	70	60	55	59
	Douglas-fir-white fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	97	98	98	95	97
	Douglas-fir-white fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	100	100	98	99
	Douglas-fir-white fir-grand fir	--	--	--	100	100
9	Subalpine fir-Engelmann spruce	100	100	100	99	99
	Douglas-fir-white fir-grand fir	--	--	--	100	100
10	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-white fir-grand fir	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 52--Ordered subgroup rules by potential vegetation type in the Lower Grande Ronde, Upper Grande Ronde and Wallowa subbasins

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 2 or 4 **and** elevation 3 and above	Cool-moist
3	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27	Warm-dry
4	Spp_os = 5 **or** spp_os_H = 5 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 or 1 or 2 or 4 **and** elevation 6 or 7	Cool-moist
3	Elevation = 8 and above	Cool-moist
4	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Lower Henry's Subbasin (LHE)

Table 53--Ordered attribute rules for potential vegetation type assignment in the Lower Henry's subbasin

Step	Potential vegetation type	Attribute rules
1	Aspen	Spp_os[1] = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 82 **and** spp_us_H = 0 or 28 or 29 or 82
2	Rocky Mountain juniper	Spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 28 **and** spp_us_H = 0 or 28
3	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 **and** spp_us_H = 0 or 28 or 29 or 31
4	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 **or** spp_os_H =7 or 19 or 51 or 72 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44
5	Douglas-fir-grand fir	Spp_os = 0 or 4 or 78 **and** spp_os_H = 0 or 4 or 78 **and** spp_us = 0 or 22 or 28 or 29 **and** spp_us_H = 0 or 22 or 28 or 29

Table 54--Probability rules for potential vegetation type assignment in the Lower Henry's subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
6	Subalpine fir-Engelmann spruce	3	--	1	13	--
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	57	85	46	69	91
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	100	100	78	100
	Douglas-fir-grand fir	--	--	--	100	--
9	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 55--Ordered subgroup rules by potential vegetation type in the Lower Henry's subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Lower John Day Subbasin (LJD)

Table 56--Ordered attribute rules for potential vegetation type assignment in the Lower John Day subbasin

Step	Potential vegetation type	Attribute rules
1	Juniper	Spp_os[1] = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 27 or 28 or 29 or 30 **and** spp_us_H = 0 or 27 or 28 or 29 or 30
2	Cottonwood	Spp_os = 0 or 62 **and** spp_os_H = 0 or 62 **and** spp_us = 0 or 28 or 29 or 30 **and** spp_us_H = 0 or 28 or 29 or 30
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 or 13 **and** spp_os_H = 0 or 1 or 13 **and** spp_us = 0 or 20 or 27 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 27 or 28 or 29 or 30
4	Lodgepole pine	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
5	Douglas-fir-white fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H 1 or 17 **or** spp_us = 20 or 32 or 33 **or** spp_us_H =20 or 32 or 33

Table 57--Probability rules for potential vegetation type assignment for polygons in the Lower John Day subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Douglas-fir-white fir-grand fir	--	--	--	3	--
	Ponderosa pine	100	100	100	100	100
3	Douglas-fir-white fir-grand fir	19	10	30	14	10
	Ponderosa pine	100	100	100	100	100
4	Douglas-fir-white fir-grand fir	68	71	73	64	71
	Ponderosa pine	100	100	100	100	100
5	Douglas-fir-white fir-grand fir	78	90	81	80	85
	Ponderosa pine	100	100	100	100	100
6	Douglas-fir-white fir-grand fir	100	95	98	100	99
	Ponderosa pine	--	100	100	--	100
7	Douglas-fir-white fir-grand fir	100	100	100	100	100
	Ponderosa pine	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 58--Ordered subgroup rules by potential vegetation type in the Lower John Day subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 **or** elevation = 6 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 7 and above	Cool-moist
4	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27	Warm-dry
5	Spp_os = 5 or 74 or 75 **or** spp_os_H = 5 or 74 or 75	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Lower Yakima Subbasin (LYK)

Table 59--Ordered attribute rules for potential vegetation type assignment in the Lower Yakima subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 24 or 35 or 36 or 37 **or** spp_us_H = 24 or 35 or 36 or 37
2	Pacific silver fir	Spp_os =6 **or** spp_os_H = 6
3	Ponderosa pine	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1
4	*PIPO_log*[2]	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30 **and** (log_type = 2 **or** log_type_H = 2)
5	Subalpine fir-Engelmann spruce	Spp_os = 7 **or** spp_os_H = 7 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
6	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 33 **or** spp_us_H =20 or 33
7	Douglas-fir-grand fir	Spp_os = 4 or 5 **or** spp_os_H = 4 or 5 **or** spp_us = 22 **or** spp_us_H =22
8	Aspen	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30 **and** ripr_wet = 2 **and** ripr_wet_H = 2
9	Cottonwood	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30 **and** ripr_wet = 1 **or** ripr_wet_H = 1

Table 60--Probability rules for potential vegetation type assignment for unassigned polygons and *PIPO_log*-labeled polygons in the Lower Yakima subbasin

		Aspect class				
Elevation class[1]	Potential vegetation type	Flat	NE	SE	SW	NW
4	Douglas-fir-grand fir	--	82	--	--	--
	Pacific silver fir	--	--	--	--	--
	Mountain hemlock	--	--	--	--	--
	Subalpine fir-Engelmann spruce	--	100	--	--	--
5	Douglas-fir-grand fir	52	36	52	--	13
	Pacific silver fir	--	--	--	--	--
	Mountain hemlock	--	37	61	--	16
	Subalpine fir-Engelmann spruce	100	100	100	--	100
6	Douglas-fir-grand fir	--	20	16	--	--
	Pacific silver fir	--	25	25	--	--
	Mountain hemlock	--	26	--	--	--
	Subalpine fir-Engelmann spruce	--	100	100	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] Polygons labeled *PIPO_log* were comprised of pure ponderosa pine cover with evidence of visible logging. This label was a temporary assignment resolved in table 60.

Table 61--Ordered subgroup rules by potential vegetation type in the Lower Yakima subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 3	Warm-dry
3	Elevation = 2 or 3	Warm-dry
4	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 3 **and** elevation < 8	Warm-dry
3	Aspect class = 2 or 4 **and** elevation = 3 or 4	Warm-dry
4	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Medicine Lodge Subbasin (MDL)

Table 62--Ordered attribute rules for potential vegetation type assignment in the Medicine Lodge subbasin

Step	Potential vegetation type	Attribute rules
1	Subalpine fir-Engelmann spruce	Spp_os[1] = 90 **or** spp_os_H = 90
2	Juniper	Spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 27 or 28 or 29 **and** spp_us_H = 0 or 27 or 28 or 29
3	Douglas-fir-grand fir	Spp_os = 4 or 63 **or** spp_os_H = 4 or 63 **or** spp_us = 22 or 84 **or** spp_us_H = 22 or 84

Table 63--Ordered subgroup rules by potential vegetation type in the Medicine Lodge subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = 1 **and** elevation 9 and above	Cool-moist
3	Spp_os = 90 **or** spp_os_H = 90	Warm-dry
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspec combinations	Warm-dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Methow Subbasin (MET)

Table 64--Ordered attribute rules for potential vegetation type assignment in the Methow subbasin excluding subwatersheds MET12, MET36, MET38, MET49, MET50, and MET55.

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 24 **or** spp_us_H = 24
2	Western hemlock-western redcedar	Spp_us = 23 **or** spp_us_H = 23
3	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **or** spp_us_H = 0 or 28 or 29 or 30 or 39
4	Subalpine fir-Engelmann spruce	Spp_os = 7 or 10 or 51 **or** spp_os_H = 7 or 10 or 51 **or** spp_us = 25 or 38 or 39 or 44 **or** spp_us_H = 25 or 38 or 39 or 44
5	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
6	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 **and** spp_us_H = 0 or 20 or 28 or 29
7	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 32 or 33 **or** spp_us_H =20 or 32 or 33
8	Aspen	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30 **and** ripr_wet = 2 **or** ripr_wet_H = 2
9	Cottonwood	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30 **and** ripr_wet = 1 **and** ripr_wet_H = 1

Table 65--Probability rules for potential vegetation type assignment for polygons in the *PIPO_log* group in the Methow subbasin excluding subwatersheds MET12, MET36, MET38, MET49, MET50, and MET55.

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	10	5	60	95	
	Douglas-fir-grand fir	100	100	100	100	100
3	Ponderosa pine	6	5	10	32	15
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	1	1	11	18	6
	Douglas-fir-grand fir	100	100	100	100	100
5	Ponderosa pine	--	1	9	11	4
	Douglas-fir-grand fir	100	100	100	100	100
6	Ponderosa pine	--	--	4	4	4
	Douglas-fir-grand fir	100	100	100	100	100
7	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] Polygons labeled *PIPO_log* were comprised of pure ponderosa pine cover with evidence of visible logging. This label was a temporary assignment resolved in table 65.

Table 66--Probability rules for potential vegetation type assignment of remaining polygons in the Methow subbasin excluding subwatersheds MET12, MET36, MET38, MET49, MET50, and MET55.

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	3	15	35	50	16
	Douglas-fir-grand fir	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	16	25	8	14	11
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	5	17	13	17	11
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	23	52	30	37	41
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	90	86	82	88
	Douglas-fir-grand fir	--	100	100	100	100

Table 67--Ordered subgroup rules by potential vegetation type in the Methow subbasin excluding subwatersheds MET12, MET36, MET38, MET49, MET50, and MET55.

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 4 **and** elevation = 3 and above	Cool-moist
3	Aspect class = 2 **and** elevation = 4 and above	Cool-moist
4	Spp_os = 5 **or** spp_os_H = 5 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 3 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 **and** elevation = 4 and above	Cool-moist
4	Aspect class = 3 **and** elevation = 7 and above	Cool-moist
5	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist

Table 68--Ordered attribute rules for potential vegetation type assignment in the MET12, MET36, MET38, MET49, MET50, and MET55 subwatersheds of the Methow subbasin

Step	Potential vegetation type	Attribute rules
1	Whitebark pine-subalpine larch	Spp_os[1] = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **or** spp_us_H = 0 or 28 or 29 or 30 or 39
2	Mountain hemlock	Spp_us = 37 **or** spp_us_H = 37
3	Pacific silver fir	Spp_os =6 **or** spp_os_H = 6
4	Subalpine fir-Engelmann spruce	Spp_os = 7 or 10 or 19 or 51 **or** spp_os_H = 7 or 10 or 19 or 51 **or** spp_us = 25 or 38 or 39 or 44 **or** spp_us_H = 25 or 38 or 39 or 44
5	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 33 **or** spp_us_H =20 or 33

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 69--Probability rules for potential vegetation type assignment of remaining polygons in the MET49 and MET55 subwatersheds of the Methow subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Pacific silver fir	--	100	100	100	100
	Subalpine fir-Engelmann spruce	--	--	--	--	--
5	Pacific silver fir	--	94	97	99	95
	Subalpine fir-Engelmann spruce	--	100	100	100	100
6	Pacific silver fir	100	96	88	90	95
	Subalpine fir-Engelmann spruce	--	100	100	100	100
7	Pacific silver fir	100	78	94	97	72
	Subalpine fir-Engelmann spruce	--	100	100	100	100
8	Pacific silver fir	--	88	89	100	100
	Subalpine fir-Engelmann spruce	--	100	100	--	--

Table 70--Probability rules for potential vegetation type assignment of remaining polygons in subwatersheds MET12, MET36, MET38, and MET50 in the Methow subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	--	49	20	17	18
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	83	64	35	55
	Douglas-fir-grand fir	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	99	78	49	72
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	--	100	100	40	100
	Douglas-fir-grand fir	--	--	--	100	--

Table 71--Ordered subgroup rules by potential vegetation type in the MET12, MET36, MET38, MET49, MET50, and MET55 subwatersheds of the Methow subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 4 **and** elevation = 3 and above	Cool-moist
3	Aspect class = 2 **and** elevation = 4 and above	Cool-moist
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 3 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 **and** elevation = 4 and above	Cool-moist
4	Aspect class = 3 **and** elevation = 7 and above	Cool-moist
5	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Naches Subbasin (NAC)

Table 72--Ordered attribute rules for potential vegetation type assignment in the Naches subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 24 **or** spp_us_H = 24
2	Pacific silver fir	Spp_os =6 **or** spp_os_H = 6
3	Western hemlock-western redcedar	Spp_os = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
4	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **and** spp_us_H = 0 or 28 or 29 or 30 or 39
5	Ponderosa pine	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1
6	Douglas-fir-grand fir	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30 **and** (log_type = 2 **or** log_type_H = 2)
7	Subalpine fir-Engelmann spruce	Spp_os = 7 **or** spp_os_H = 7 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
8	Douglas-fir-grand fir	Spp_os = 4 or 5 **or** spp_os_H = 4 or 5 **or** spp_us = 22 **or** spp_us_H =22
9	Aspen	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30 **and** ripr_wet = 2 **and** ripr_wet_H = 2
10	Cottonwood	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30 **and** ripr_wet = 1 **or** ripr_wet_H = 1

Table 73--Probability rules for potential vegetation type assignment for unassigned polygons in the Naches subbasin (excluding subwatershed NAC07).

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Douglas-fir-grand fir	--	18	--	61	56
	Subalpine fir-Engelmann spruce	--	21	--	62	60
	Western hemlock-western redcedar	--	77	--	86	84
	Mountain hemlock	--	80	--	--	85
	Pacific silver fir	--	100	--	100	100
5	Douglas-fir-grand fir	--	43	39	42	36
	Subalpine fir-Engelmann spruce	--	49	52	56	46
	Western hemlock-western redcedar	--	64	62	65	66
	Mountain hemlock	--	70	68	70	71
	Pacific silver fir	--	100	100	100	100
6	Douglas-fir-grand fir	--	12	8	11	16
	Subalpine fir-Engelmann spruce	--	56	55	59	64
	Western hemlock-western redcedar	--	63	59	63	71
	Mountain hemlock	--	83	80	80	86
	Pacific silver fir	--	100	100	100	100
7	Douglas-fir-grand fir	--	1	1	1	--
	Subalpine fir-Engelmann spruce	--	77	90	73	74
	Western hemlock-western redcedar	--	87	91	74	57
	Mountain hemlock	--	91	96	97	92
	Pacific silver fir	--	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 74--Probability rules for potential vegetation type assignment of remaining polygons in the NAC07 subwatershed of the Naches subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
3	Ponderosa pine	1	--	14	25	--
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	--	--	--	--	100
5	Ponderosa pine	--	--	10	--	--
	Douglas-fir-grand fir	--	--	100	--	--

Table 75--Ordered subgroup rules by potential vegetation type in the Naches subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 3	Warm-dry
3	Elevation = 2 or 3	Warm-dry
4	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 3 **and** elevation < 8	Warm-dry
3	Aspect class = 2 or 4 **and** elevation = 3 or 4	Warm-dry
4	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Palisades Subbasin (PSD)

Table 76--Ordered attribute rules for potential vegetation type assignment in the Palisades subbasin

Step	Potential vegetation type	Attribute rules
1	Subalpine fir-Engelmann spruce	Spp_os[1] = 7 or 72 or 76 or 90 **or** spp_os_H = 7 or 72 or 76 or 90 **or** spp_us = 25 **or** spp_us_H = 25
2	Juniper	Spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 28 or 29 or 30 **and** spp_us_H = 0 or 28 or 29 or 30
3	Limber pine	Spp_os = 0 or 55 **and** spp_os_H = 0 or 55 **and** spp_us = 0 or 28 or 29 or 30 or 45 **and** spp_us_H = 0 or 28 or 29 or 30 or 45
4	Maple	Spp_os = 0 or 59 **and** spp_os_H = 0 or 59 **and** spp_us = 0 or 28 or 29 or 30 or 80 **and** spp_us_H = 0 or 28 or 29 or 30 or 80
5	Lodgepole pine	Aspect class = -1 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 or 61 or 79 **and** spp_os_H = 0 or 3 or 61 or 79 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
6	Aspen	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 28 or 29 or 30 or 82
7	Cottonwood-willow-aspen	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 62 **and** spp_os_H = 0 or 62 **and** spp_us = 0 or 28 or 29 or 30 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 83
8	Douglas-fir-grand fir	Spp_os = 13 or 55 or 59 or 63 **or** spp_os_H = 13 or 55 or 59 or 63 **or** spp_us = 27 or 45 or 80 **or** spp_us_H = 27 or 45 or 80
9	Douglas-fir-grand fir	Spp_os = 0 or 4 or 78 or 61 **and** spp_os_H = 0 or 4 or 78 or 61 **and** spp_us = 0 or 22 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 22 or 28 or 29 or 30 or 82

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 77--Probability rules for potential vegetation type assignment in the Palisades subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
6	Subalpine fir-Engelmann spruce	1	5	--	3	--
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	45	35	30	33	23
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	50	62	44	40	53
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	100	82	40	61	82
	Douglas-fir-grand fir	--	100	100	100	100
10	Subalpine fir-Engelmann spruce	100	97	88	75	93
	Douglas-fir-grand fir	--	100	100	100	100

Table 78--Ordered subgroup rules by potential vegetation type in the Palisades subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = 1 or 4 **and** elevation = 9 and higher	Cool-moist
3	Aspect class = 2 or 3 **and** elevation = 10	Cool-moist
4	Spp_os = 55 or 63 **or** spp_os_H = 55 or 63 **or** spp_us = 45 **or** spp_us_H = 45	Warm-dry
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = 1 or 4 **and** elevation = 9 and higher	Cool-moist
3	Aspect class = 2 or 3 **and** elevation = 10	Cool-moist
4	Spp_os = 55 or 63 or 76 **or** spp_os_H = 55 or 63 or 76 **or** spp_us = 45 **or** spp_us_H = 45	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Palouse Subbasin (PLS)

Table 79--Ordered attribute rules for potential vegetation type assignment in the Palouse subbasin

Step	Potential vegetation type	Attribute rules
1	Aspen	Ripr_wet[1] = 2 **and** ripr_wet_H = 2 **and** spp_os = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **and** spp_os_H = 0 or 12 **and** spp_us_H = 0 or 26 or 28 or 29 or 30
2	Cottonwood	Ripr_wet = 1 or 2 **and** ripr_wet_H = 1 or 2 **and** spp_os = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **and** spp_os_H = 0 or 12 **and** spp_us_H = 0 or 26 or 28 or 29 or 30
3	Western hemlock-western redcedar	Spp_os = 8 **or** spp_us = 23 **or** spp_os_H = 8 **or** spp_us_H = 23
4	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
5	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_os_H = 0 or 1 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
6	Lodgepole pine	Spp_os = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 **and** spp_os_H = 0 or 3 **and** spp_us_H = 0 or 28 or 29 or 30
7	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_us = 20 **or** spp_os_H = 1 or 17 **or** spp_us_H = 20
8	Douglas-fir-grand fir	Spp_os = 4 or 5 or 66 or 74 or 75 or 93 **and** spp_us = 22 **and** spp_os_H = 4 or 5 or 66 or 74 or 75 or 93 **and** spp_us_H = 22

Table 80--Probability rules for *PIPO_log* group reassignment in the Palouse subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	11	50	13	60	55
	Douglas-fir-grand fir	100	100	100	100	100
3	Ponderosa pine	50	53	47	--	38
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	--	--	--	--	3
	Douglas-fir-grand fir	--	100	100	100	100

Table 81--Probability rules for potential vegetation type assignment in the Palouse subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Douglas-fir-grand fir	100	100	100	100	100
	Western hemlock-western redcedar	--	--	--	--	--
3	Douglas-fir-grand fir	89	82	88	82	92
	Western hemlock-western redcedar	100	100	100	100	100
4	Douglas-fir-grand fir	36	23	48	51	29
	Western hemlock-western redcedar	100	100	100	100	100
5	Douglas-fir-grand fir	--	61	70	54	36
	Western hemlock-western redcedar	--	100	100	100	100
6	Douglas-fir-grand fir	--	100	100	100	100
	Western hemlock-western redcedar	--	--	--	--	--

Table 82--Ordered subgroup rules by potential vegetation type in the Palouse subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] Polygons labeled *PIPO_log* were comprised of pure ponderosa pine cover with evidence of visible logging. This label was a temporary assignment resolved in table 80.

Pend Oreille Subbasin (PEN)

Table 83--Ordered attribute rules for potential vegetation type assignment in the Pend Oreille subbasin

Step	Potential vegetation type	Attribute rules
1	Western hemlock-western redcedar	Spp_os[1] = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
2	Mountain hemlock	Spp_os = 9 **or** spp_os_H = 9 **or** spp_us = 24 or 36 **or** spp_us_H = 24 or 36
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
4	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
5	Subalpine fir-Engelmann spruce	Spp_os = 7 or 51 **or** spp_os_H =7 or 51 **or** spp_us = 25 **or** spp_us_H = 25
6	Douglas-fir-grand fir	Spp_os = 1 **or** spp_os_H = 1 **or** spp_us = 20 or 32 **or** spp_us_H =20 or 32
7	*PIMO*[2]	Spp_os = 11 **or** spp_os_H = 11

Table 84--Probability rules for *PIPO_log* group reassignment in the Pend Oreille subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--
3	Ponderosa pine	13	8	4	7	5
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	--	2	2	2	2
	Douglas-fir-grand fir	100	100	100	100	100
5	Ponderosa pine	--	--	--	1	--
	Douglas-fir-grand fir	100	100	100	100	100

Table 85--Probability rules for *PIMO* group reassignment in the Pend Oreille subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Western hemlock-western redcedar	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	--	2	3	10	6
	Western hemlock-western redcedar	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	23	8	9	10	11
	Western hemlock-western redcedar	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	71	25	33	35	28
	Western hemlock-western redcedar	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	69	77	78	67
	Western hemlock-western redcedar	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	92	92	96	94
	Western hemlock-western redcedar	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Western hemlock-western redcedar	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] *PIPO_log* and *PIMO* were temporary placeholders for polygons that were assigned to a PVT using special probability tables below. *PIPO_log* polygons were comprised of pure ponderosa pine cover but had visible logging entry signs. This label was a temporary assignment resolved in table 84. *PIMO* polygons were comprised of western white pine often with other early seral tree species. This label was also a temporary assignment resolved in table 85.

Table 86--Probability rules for potential vegetation type assignment in subwatersheds PEN13 and PEN17 in the Pend Oreille subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Subalpine fir-Engelmann spruce	--	--	--	1	--
	Douglas-fir-grand fir	62	72	78	74	77
	Western hemlock-western redcedar	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	--	1	6	6	3
	Douglas-fir-grand fir	16	42	67	69	55
	Western hemlock-western redcedar	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	33	2	51	39	15
	Douglas-fir-grand fir	--	14	72	68	43
	Western hemlock-western redcedar	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	95	95	92	75
	Douglas-fir-grand fir	--	98	98	96	89
	Western hemlock-western redcedar	--	100	100	100	100

Table 87--Probability rules for potential vegetation type assignment of all remaining polygons in the Pend Oreille subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	--	--	--	--	--
	Western hemlock-western redcedar	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	--	2	2	10	6
	Douglas-fir-grand fir	7	9	13	30	12
	Western hemlock-western redcedar	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	23	9	8	8	12
	Douglas-fir-grand fir	--	10	14	17	15
	Western hemlock-western redcedar	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	75	25	24	27	27
	Douglas-fir-grand fir	--	28	32	36	32
	Western hemlock-western redcedar	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	68	69	72	64
	Douglas-fir-grand fir	--	--	71	73	66
	Western hemlock-western redcedar	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	92	92	95	93
	Douglas-fir-grand fir	--	--	--	--	94
	Western hemlock-western redcedar	--	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 88--Ordered subgroup rules by potential vegetation type in the Pend Oreille subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 2 or 3 or 4 **and** elevation = 5	Warm-dry
3	Aspect class = 3 **and** elevation = 6	Warm-dry
4	Spp_os = 5 **or** spp_os_H = 5 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 2 or 3 or 4 **and** elevation = 3	Warm-dry
3	Aspect class = 3 or 4 **and** elevation = 4	Warm-dry
4	Aspect class = 3 **and** elevation = 5	Warm-dry
5	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 2	Warm-dry
3	Aspect class = 3 **and** elevation = 3 or 4 or 5	Warm-dry
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

San Poil Subbasin (SPO)

The San Poil subbasin was combined with the Kettle Subbasin for analysis and assignment of potential vegetation types.

Silvies Subbasin (SIL)

Table 89--Ordered attribute rules for potential vegetation type assignment in the Silvies subbasin

Step	Potential vegetation type	Attribute rules
1	Subalpine fir-Engelmann spruce	Spp_os[1] = 7 **or** spp_os_H =7 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
2	Lodgepole pine	Aspect class = -1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 **and** spp_us_H = 0 or 28 or 29 or 31
3	Juniper	Elevation = 5 or 6 **and** spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 26 or 27 or 28 or 29 **and** spp_us_H = 0 or 26 or 27 or 28 or 29
4	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 1 **and** spp_os_H = 1 **and** spp_us = 20 or 26 or 28 or 29 or 30 **and** spp_us_H = 20 or 26 or 28 or 29 or 30
5	Ponderosa pine	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27
6	Douglas-fir-white fir-grand-fir	Spp_os = 2 or 3 or 4 or 5 **or** spp_os_H = 2 or 3 or 4 or 5 **or** spp_us = 21 or 22 or 31 or 34 **or** spp_us_H = 21 or 22 or 31 or 34

Table 90--Probability rules for potential vegetation type assignment in the Silvies subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
5	Ponderosa pine	51	45	43	41	42
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Ponderosa pine	13	9	15	15	13
	Douglas-fir-white fir-grand fir	100	100	100	100	100
7	Ponderosa pine	3	1	4	2	1
	Douglas-fir-white fir-grand fir	100	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 91--Ordered subgroup rules by potential vegetation type in the Silvies subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	Aspect class[1] = 3 **or** elevation = 5	Warm-dry
2	Aspect class = -1 or 1 or 2 or 3 **and** elevation = 6 or 7	Cool-moist
3	Aspect class = 3 **and** elevation = 4	Warm-dry
4	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27	Warm-dry
5	Spp_os = 5 **or** spp_os_H = 5 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All	Warm-dry

Snake Headwaters Subbasin (SHW)

Table 92--Ordered attribute rules for potential vegetation type assignment in the Snake Headwaters subbasin

Step	Potential vegetation type	Attribute rules
1	Whitebark pine-subalpine larch	Spp_os[1] = 10 **and** spp_os_H = 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **and** spp_us_H = 0 or 28 or 29 or 30 or 39
2	Aspen	Spp_os = 61 **and** spp_os_H = 61 **and** spp_us = 0 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 28 or 29 or 30 or 82
3	Cottonwood	Spp_os = 62 **and** spp_os_H = 62 **and** spp_us = 0 or 28 or 29 or 30 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 83
4	Lodgepole pine	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31
5	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 or 95 **or** spp_os_H =7 or 19 or 51 or 72 or 95 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44
6	Douglas-fir-grand fir	Spp_os = 1 or 75 **or** spp_os_H = 1 or 75 **or** spp_us = 32 **or** spp_us_H = 32
7	Douglas-fir-grand fir	Spp_os = 4 **or** spp_os_H = 4 or 17 **or** spp_us = 22 **or** spp_us_H = 22

Table 93--Probability rules for potential vegetation type assignment in subwatersheds SHW0307, SHW0901, SHW0205, SHW1103, and SHW1202 of the Snake Headwaters subbasin

		Aspect class				
Elevation class[1]	Potential vegetation type	Flat	NE	SE	SW	NW
7	Subalpine fir-Engelmann spruce	59	78	67	79	79
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	84	91	86	86	84
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	100	100	100	99	100
	Douglas-fir-grand fir	--	--	--	100	--
10	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--
11	Subalpine fir-Engelmann spruce	--	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 94--Probability rules for potential vegetation type assignment in subwatersheds SHW0302, SHW0303, and SHW0304 of the Snake Headwaters subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
7	Subalpine fir-Engelmann spruce	100	94	92	87	84
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	97	92	95	83	91
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	67	93	92	60	96
	Douglas-fir-grand fir	100	100	100	100	100
10	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--
11	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

Table 95--Ordered subgroup rules by potential vegetation type in the Snake Headwaters subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 8 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 9 and above	Cool-moist
4	Spp_os = 63 **or** spp_os_H = 63	Warm-dry
5	Spp_us = 45 or 84 or spp_us_H = 45 or 84	Warm-dry
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 8 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 9 and above	Cool-moist
4	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95	Harsh
5	Spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

South Fork Clearwater Subbasin (SFC)

Table 96--Ordered attribute rules for potential vegetation type assignment in the South Fork Clearwater subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_us[1] = 35 **or** spp_us_H = 35
2	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 71 or 72 or 77 or 90 or 92 **or** spp_os_H =7 or 19 or 51 or 71 or 72 or 77 or 90 or 92 **or** spp_us = 25 or 38 or 44 or 86 **or** spp_us_H = 25 or 38 or 44 or 86
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 1 **and** spp_os_H = 1 **and** spp_us = 20 or 26 or 28 or 29 or 30 **and** spp_us_H = 20 or 26 or 28 or 29 or 30
4	Douglas-fir-grand-fir	Spp_os = 1 or 17 or 70 or 91 **or** spp_os_H = 1 or 17 or 70 or 91 **or** spp_us = 20 **or** spp_us_H = 20
5	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 3 or 61 or 79 **and** spp_os_H = 3 or 61 or 79 **and** spp_us = 31 or 26 or 28 or 29 or 30 **and** spp_us_H = 31 or 26 or 28 or 29 or 30
6	Douglas-fir-grand-fir	Spp_os = 1 **and** spp_os_H = 1 **and** spp_us = 20 or 26 or 28 or 29 or 30 **and** spp_us_H = 20 or 26 or 28 or 29 or 30
7	Douglas-fir-grand-fir	Spp_os = 5 or 74 or 75 or 93 **or** spp_os = 5 or 74 or 75 or 93 **or** spp_us = 34 **or** spp_us_H = 34

Table 97--Probability rules for potential vegetation type assignment in the South Fork Clearwater subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	--	1	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	14	21	14	9	11
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	47	30	24	20	20
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	65	66	65	51	65
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 98--Ordered subgroup rules by potential vegetation type in the South Fork Clearwater subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1	Cool-moist
3	Aspect class = 1 **and** elevation = 4 and above	Cool-moist
4	Aspect class = 2 or 3 or 4 **and** elevation = 5 and above	Cool-moist
5	Spp_os = 5 or 74 or 75 or 91 or 93 **or** spp_os_H = 5 or 74 or 75 or 91 or 93	Cool-moist
6	Spp_us = 34 **or** spp_us_H = 34	Cool-moist
7	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 5 and above	Cool-moist
3	Aspect class = 1 **and** elevation = 6 and above	Cool-moist
4	Aspect class = 2 or 3 or 4 **and** elevation = 7 and above	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

South Fork Salmon Subbasin (SFS)

Table 99--Ordered attribute rules for potential vegetation type assignment in the South Fork Salmon subbasin

Step	Potential vegetation type	Attribute rules
1	Ponderosa pine	Log_type[1] = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
2	Douglas-fir-grand-fir	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
3	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 26 or 28 or 29 or 30 or 31 or 86 **and** spp_us_H = 26 or 28 or 29 or 30 or 31 or 86
4	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 72 or 90 or 95 **or** spp_os_H =7 or 19 or 51 or 72 or 90 or 95 **or** spp_us = 25 or 38 or 44 or 86 **or** spp_us_H = 25 or 38 or 44 or 86
5	Douglas-fir- grand-fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 32 or 33 **or** spp_us_H = 20 or 32 or 33
6	Douglas-fir- grand-fir	Spp_os = 4 or 74 or 75 or 93 **or** spp_os_H = 4 or 74 or 75 or 93 **or** spp_us = 22 **or** spp_us_H = 22

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 100--Probability rules for potential vegetation type assignment in the South Fork Salmon subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	--	--	--	--	--
	Douglas-fir-grand fir	--	100	100	100	100
6	Subalpine fir-Engelmann spruce	91	79	84	87	66
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	99	96	95	91	93
	Douglas-fir-grand fir	100	100	100	100	100
8	Subalpine fir-Engelmann spruce	98	99	99	93	97
	Douglas-fir-grand fir	100	100	100	100	100
9	Subalpine fir-Engelmann spruce	100	97	97	97	97
	Douglas-fir-grand fir	--	100	100	100	100
10	Subalpine fir-Engelmann spruce	--	100	--	--	--
	Douglas-fir-grand fir	--	--	--	--	--

Table 101--Ordered subgroup rules by potential vegetation type in the South Fork Salmon subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 2 **and** elevation 6 and above	Cool-moist
3	Aspect class = 3 or 4 **and** elevation = 7 and above	Cool-moist
4	Spp_os = 74 or 75 **or** spp_os_H = 74 or 75	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Elevation = 5	Warm-dry
3	Spp_os = 95 **or** spp_os_H = 95	Harsh
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Swan Subbasin (SWN)

Table 102--Ordered attribute rules for potential vegetation type assignment in the Swan subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_us[1] = 36 **or** spp_us_H = 36
2	Western hemlock-western redcedar	Spp_os = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
3	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 71 or 72 or 90 or 95 **or** spp_os_H = 7 or 19 or 51 or 71 or 72 or 90 or 95 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44
4	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 3 **and** spp_os_H = 3 **and** spp_us = 28 or 29 or 31 or 86 **and** spp_us_H = 28 or 29 or 31 or 86
5	Douglas-fir-grand fir	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 1 or 17 or 70 or 91 **and** spp_os_H = 1 or 17 or 70 ro 91 **and** spp_us = 20 or 28 or 29 or 30 or 32 or 33 **or** spp_us_H = 20 or 28 or 29 or 30 or 32 or 33
6	Douglas-fir-grand fir	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 **and** spp_us_H = 0 or 20
7	Cottonwood	Spp_os = 0 or 61 or 62 **and** spp_os_H = 0 or 61 or 62 **and** spp_us = 0 or 28 or 29 or 30 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 83
8	Aspen	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 61 **or** spp_os_H = 61 **or** spp_us = 83 **or** spp_us_H = 83

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 103--Probability rules for potential vegetation type assignment in the Swan subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Subalpine fir-Engelmann spruce	92	87	98	87	51
	Douglas-fir-grand fir	100	100	99	100	100
	Western hemlock-western redcedar	--	--	100	--	--
5	Subalpine fir-Engelmann spruce	100	86	87	65	82
	Douglas-fir-grand fir	--	92	88	100	100
	Western hemlock-western redcedar	--	100	100	--	--
6	Subalpine fir-Engelmann spruce	100	96	99	87	97
	Douglas-fir-grand fir	--	--	100	100	100
	Western hemlock-western redcedar	--	100	--	--	--
7	Subalpine fir-Engelmann spruce	100	100	100	99	--
	Douglas-fir-grand fir	--	--	--	100	--
	Western hemlock-western redcedar	--	--	--	--	--
8	Subalpine fir-Engelmann spruce	--	--	100	100	--
	Douglas-fir-grand fir	--	--	--	--	--
	Western hemlock-western redcedar	--	--	--	--	--
9	Subalpine fir-Engelmann spruce	--	--	100	100	--
	Douglas-fir-grand fir	--	--	--	--	--
	Western hemlock-western redcedar	--	--	--	--	--

Table 104--Ordered subgroup rules by potential vegetation type in the Swan subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Spp_os = 5 or 74 or 75 or 91 **or** spp_os_H 5 or 74 or 75 or 91	Cool-moist
3	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Elevation = 6 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 5 and above	Cool-moist
4	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95	Harsh
5	Spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Upper Coeur D'Alene Subbasin (UCD)

Table 105--Ordered attribute rules for potential vegetation type assignment in the Upper Coeur D'Alene subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 24 or 35 or 37 **or** spp_us_H = 24 or 35 or 37
2	Western hemlock-western redcedar	Spp_os = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
3	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 **and** spp_us_H = 0 or 20 or 28 or 29
4	Lodgepole pine	Spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 **and** spp_us_H = 0 or 28 or 29 or 31
5	Whitebark pine-subalpine larch	Spp_os = 0 or 39 **and** spp_os_H = 0 or 39 **and** spp_us = 0 **or** spp_us_H = 0
6	Subalpine fir-Engelmann spruce	Spp_os = 7 or 67 or 72 or 76 or 77 or 90 or 92 **or** spp_os_H =7 or 67 or 72 or 76 or 77 or 90 or 92 **or** spp_us = 25 **or** spp_us_H = 25
7	Cottonwood-willow-aspen	Spp_os = 62 **and** spp_os_H = 62 **and** spp_us = 0 or 28 or 29 **and** spp_us_H = 0 or 28 or 29
8	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 32 or 33 **or** spp_us_H =20 or 32 or 33

Table 106--Probability rules for potential vegetation type assignment in the Upper Coeur D'Alene subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Subalpine fir-Engelmann spruce	15	1	3	13	3
	Douglas-fir-grand fir	17	3	14	19	7
	Western hemlock-western redcedar	100	100	100	100	100
	Mountain hemlock	--	--	--	--	--
4	Subalpine fir-Engelmann spruce	9	2	4	3	2
	Douglas-fir-grand fir	18	6	29	19	15
	Western hemlock-western redcedar	89	95	96	98	100
	Mountain hemlock	100	100	100	100	--
5	Subalpine fir-Engelmann spruce	9	19	36	19	17
	Douglas-fir-grand fir	54	25	55	59	42
	Western hemlock-western redcedar	100	83	90	96	92
	Mountain hemlock	--	100	100	100	100
6	Subalpine fir-Engelmann spruce	--	17	97	88	30
	Douglas-fir-grand fir	--	41	--	100	100
	Western hemlock-western redcedar	--	50	--	--	--
	Mountain hemlock	--	100	100	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 107--Ordered subgroup rules by potential vegetation type in the Upper Coeur D'Alene subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 2 or 3 or 4 **and** elevation = 3	Warm-dry
3	Aspect class = 3 **and** elevation = 4	Warm-dry
4	Spp_os = 5 or 66 or 74 or 75 or 93	Cool-moist
5	Spp_us = 34	Cool-moist
6	Spp_os_H = 5 or 66 or 74 or 75 or 93	Cool-moist
7	Spp_us_H = 34	Cool-moist
8	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 **and** elevation = 4 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 5 and above	Cool-moist
4	Spp_os = 76	Warm-dry
5	Spp_os_H = 76	Warm-dry
6	Spp_us = 39	Harsh
7	Spp_us_H = 39	Harsh
8	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 2 or 3 or 4 **and** elevation = 3	Warm-dry
3	Aspect class = 3 **and** elevation = 4	Warm-dry
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Upper Deschutes Subbasin (UDS)

The Upper Deschutes subbasin was combined the Little Deschutes and Lower Crooked River subbasins. See Little Deschutes Subbasin for rules.

Upper Grand Ronde Subbasin (UGR)

Upper Grande Ronde subbasin was combined with the Lower Grande Ronde and Wallowa subbasins for PVT modeling. See the entry under Lower Grande Ronde.

Upper John Day Subbasin (UJD)

Table 108--Ordered attribute rules for potential vegetation type assignment in the Upper John Day subbasin

Step	Potential vegetation type	Attribute rules
1	Juniper	Spp_os[1] = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 26 or 27 or 28 or 29 **and** spp_us_H = 0 or 26 or 27 or 28 or 29
2	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 or 13 **and** spp_os_H = 0 or 1 or 13 **and** spp_us = 0 or 20 or 26 or 27 or 28 or 29 **and** spp_us_H = 0 or 20 or 26 or 27 or 28 or 29
3	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 or 13 **and** spp_os_H = 0 or 1 or 13 **and** spp_us = 0 or 20 or 26 or 27 or 28 or 29 **and** spp_us_H = 0 or 20 or 26 or 27 or 28 or 29
4	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 30 or 31 or 86 **and** spp_us_H = 0 or 28 or 29 or 30 or 31 or 86
5	Cottonwood	Spp_os = 62 **and** spp_os_H = 62 **and** spp_us = 0 or 28 or 29 or 30 or 83 **and** spp_us_H = 0 or 28 or 29 or 30 or 83
6	Subalpine fir-Engelmann spruce	Spp_os = 7 or 72 or 92 **or** spp_os_H =7 or 72 or 92 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
7	Douglas-fir-white fir-grand fir	Spp_os = 1 or 17 or 70 or 91 **or** spp_os_H 1 or 17 or 70 or 91 **or** spp_us = 20 or 32 or 33 **or** spp_us_H =20 or 32 or 33

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] PIPO_log was a temporary placeholder for polygons that were assigned to a PVT using special probability tables below. PIPO_log polygons were comprised of pure ponderosa pine cover or pine mixed with juniper but had visible logging entry signs. This label was a temporary assignment resolved in table 109.

Table 109--Probability rules for potential vegetation type assignment of polygons in the *PIPO_log* group in the Upper John Day subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Ponderosa pine	13	10	73	42	15
	Douglas-fir-white fir-grand fir	100	100	100	100	100
5	Ponderosa pine	11	7	13	23	9
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Ponderosa pine	3	3	5	5	4
	Douglas-fir-white fir-grand fir	100	100	100	100	100

Table 110--Probability rules for potential vegetation type assignment of remaining polygons in the Upper John Day subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
4	Douglas-fir-white fir-grand fir	100	100	100	100	100
	Subalpine fir-Engelmann spruce	--	--	--	--	--
5	Douglas-fir-white fir-grand fir	100	100	100	98	99
	Subalpine fir-Engelmann spruce	--	--	--	100	100
6	Douglas-fir-white fir-grand fir	100	97	98	95	98
	Subalpine fir-Engelmann spruce	--	100	100	100	100
7	Douglas-fir-white fir-grand fir	100	29	63	75	43
	Subalpine fir-Engelmann spruce	--	100	100	100	100
8	Douglas-fir-white fir-grand fir	--	3	13	19	3
	Subalpine fir-Engelmann spruce	--	100	100	100	100

Table 111--Ordered subgroup rules by potential vegetation type in the Upper John Day subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 **or** elevation = 6 and above	Cool-moist
3	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 7 and above	Cool-moist
4	Spp_os = 13 **or** spp_os_H = 13 **or** spp_us = 27 **or** spp_us_H = 27	Warm-dry
5	Spp_os = 5 or 74 or 75 or 91 or 93 **or** spp_os_H = 5 or 74 or 75 or 91 or 93 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Upper Klamath Lake Subbasin (UKL)

Table 112--Ordered attribute rules for potential vegetation type assignment in the Upper Klamath Lake subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 or 50 **or** spp_os_H = 9 or 50 **or** spp_us = 24 or 35 or 36 or 37 **or** spp_us_H = 24 or 35 or 36 or 37
2	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **and** spp_us_H = 0 or 28 or 29 or 30 or 39
3	Shasta red fir	Spp_os = 15 **or** spp_os_H = 15 **or** spp_us = 40 **or** spp_us_H = 40
4	Douglas-fir-white fir-grand fir	Spp_os = 1 or 16 or 17 **or** spp_os_H 1 or 16 or 17 **or** spp_us = 20 or 32 **or** spp_us_H = 20 or 32
5	Lodgepole pine	Aspect class = -1 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 or 61 **and** spp_os_H = 0 or 3 or 61 **and** spp_us = 0 or 28 or 29 or 30 or 31 **and** spp_us_H = 0 or 28 or 29 or 30 or 31

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 113--Probability rules for potential vegetation type assignment for polygons in the *PIPO_log* group in the Upper Klamath Lake subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
5	Shasta red fir	4	25	4	9	76
	Douglas-fir-white fir-grand fir	100	100	100	100	100
6	Shasta red fir	100	81	71	88	93
	Douglas-fir-white fir-grand fir	--	100	100	100	100
7	Shasta red fir	100	99	100	100	100
	Douglas-fir-white fir-grand fir	--	100	--	--	--
8	Shasta red fir	--	100	100	100	100
	Douglas-fir-white fir-grand fir	--	--	--	--	--

Table 114--Ordered subgroup rules by potential vegetation type in the Upper Klamath Lake subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-white fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist

Upper Middle Fork Salmon Subbasin (UMS)

Table 115--Ordered attribute rules for potential vegetation type assignment in the Upper Middle Fork Salmon subbasin

Step	Potential vegetation type	Attribute rules
1	Ponderosa pine	Log_type[1] = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **or** spp_us_H = 0 or 20 or 28 or 29 or 30
2	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **or** spp_us_H = 0 or 28 or 29 or 30 or 39
3	Aspen	Spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 30 or 82 **and** spp_us_H = 0 or 28 or 29 or 30 or 82
4	Cottonwood	Spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 30 **and** spp_us_H = 0 or 28 or 29 or 30
5	Subalpine fir-Engelmann spruce	Spp_os = 7 or 10 or 19 or 51 or 72 or 77 or 90 or 92 or 95 **or** spp_os_H = 7 or 10 or 19 or 51 or 72 or 77 or 90 or 92 or 95 **or** spp_us = 25 or 38 or 39 or 44 **or** spp_us_H = 25 or 38 or 39 or 44
6	Lodgepole pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 or 86 **and** spp_us_H = 0 or 28 or 29 or 31 or 86
7	Douglas-fir-grand fir	Spp_os = 1 or 17 **and** spp_os_H = 1 or 17 **and** spp_us = 20 or 28 or 29 or 30 or 32 or 33 **or** spp_us_H = 20 or 28 or 29 or 30 or 32 or 33

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 116--Probability rules for potential vegetation type assignment in the Upper Middle Fork Salmon subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
5	Subalpine fir-Engelmann spruce	23	4	3	23	10
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	50	3	4	6	17
	Douglas-fir-grand fir	100	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	83	67	57	73
	Douglas-fir-grand fir	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	100	98	96	92	98
	Douglas-fir-grand fir	--	100	100	100	100
9	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--
9	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

Table 117--Ordered subgroup rules by potential vegetation type in the Upper Middle Fork Salmon subbasin

Step	Subgroup rules	Subgroup
Aspen PVT		
1	All elevation and aspect combinations	Warm-dry
2	Ripr_wet[1] = 1 **or** ripr_wet_H = 1	Cool-moist
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = -1 or or 3 or 4 **and** elevation = 5	Warm-dry
3	Spp_os = 13 **or** spp_os_H = 13	Warm-dry
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = -1 or 1 or 2 or 3 or 4 **and** elevation = 5 or 6	Warm-dry
3	Aspect class = 3 **and** elevation = 7 or 8	Warm-dry
4	Spp_os = 10 or 95 **or** spp_os_H = 10 or 95	Harsh
5	Spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

Upper Owyhee Subbasin (UOW)

Table 118--Ordered attribute rules for potential vegetation type assignment in the Upper Owyhee subbasin

Step	Potential vegetation type	Attribute rules
1	Juniper	Elevation[1] = 5 or 6 **and** spp_os = 0 or 13 **and** spp_os_H = 0 or 13 **and** spp_us = 0 or 26 or 27 or 28 or 29 **and** spp_us_H = 0 or 26 or 27 or 28 or 29
2	Aspen	Spp_os = 0 or 61 **and** spp_os_H = 0 or 61 **and** spp_us = 0 or 28 or 29 or 83 **and** spp_us_H = 0 or 28 or 29 or 83
3	Cottonwood	Spp_os = 0 or 62 **and** spp_os_H = 0 or 62 **and** spp_us = 0 or 28 or 29 or 82 **and** spp_us_H = 0 or 28 or 29 or 82
4	Hardwood	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 28 or 29 **and** spp_us_H = 0 or 28 or 29

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Upper Yakima Subbasin (UYK)

Table 119--Ordered attribute rules for potential vegetation type assignment in the Upper Yakima subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 24 **or** spp_us_H = 24
2	Pacific silver fir	Spp_os =6 **or** spp_oss_H = 6
3	Western hemlock-western redcedar	Spp_os = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
4	Whitebark pine-subalpine larch	Spp_os = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 **and** spp_us_H = 0 or 28 or 29 or 30
5	Ponderosa pine	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
6	*PIPO_log*[2]	Log_type = 2 **or** log_type_H = 2 **and** spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 or 30 **and** spp_us_H = 0 or 20 or 28 or 29 or 30
7	Subalpine fir-Engelmann spruce	Spp_os = 7 **or** spp_os_H = 7 **or** spp_us = 25 **or** spp_us_H = 25
8	Douglas-fir-grand fir	Spp_os = 1 or 17 **or** spp_os_H = 1 or 17 **or** spp_us = 20 or 32 or 33 **or** spp_us_H = 20 or 32 or 33
9	Douglas-fir-grand fir	Spp_os = 5 **or** spp_os_H = 5
10	Hardwood	Spp_os = 0 or 12 **and** spp_os_H = 0 or 12 **and** spp_us = 0 or 26 or 28 or 29 or 30 **or** spp_us_H = 0 or 26 or 28 or 29 or 30

Table 120--Probability rules for potential vegetation type assignment for unassigned polygons in the UYK32, UYK34, and UYK42 subwatersheds of the Upper Yakima subbasin (excluding subwatershed NAC07).

		Aspect class				
Elevation class[1]	Potential vegetation type	Flat	NE	SE	SW	NW
3	Douglas-fir-grand fir	--	--	3	19	7
	Subalpine fir-Engelmann spruce	--	6	6	28	20
	Mountain hemlock	--	8	--	29	25
	Western hemlock-western redcedar	--	64	60	61	72
	Pacific silver fir	100	100	100	100	100
4	Douglas-fir-grand fir	--	--	1	7	--
	Subalpine fir-Engelmann spruce	--	5	5	10	8
	Mountain hemlock	--	17	11	14	18
	Western hemlock-western redcedar	--	37	24	25	44
	Pacific silver fir	--	100	100	100	100
5	Douglas-fir-grand fir	--	--	--	4	1
	Subalpine fir-Engelmann spruce	--	14	16	18	13
	Mountain hemlock	--	21	20	26	29
	Western hemlock-western redcedar	--	27	23	27	35
	Pacific silver fir	--	100	100	100	100
6	Douglas-fir-grand fir	--	--	3	2	--
	Subalpine fir-Engelmann spruce	--	70	27	43	23
	Mountain hemlock	--	--	29	49	31
	Western hemlock-western redcedar	--	--	--	--	--
	Pacific silver fir	--	100	100	100	100
7	Douglas-fir-grand fir	--	1	--	--	--
	Subalpine fir-Engelmann spruce	--	77	97	92	74
	Mountain hemlock	--	87	--	--	--
	Western hemlock-western redcedar	--	91	--	--	--
	Pacific silver fir	--	100	100	100	100

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] *PIPO_log* was a temporary placeholder for polygons that were assigned to a PVT using special probability tables below. *PIPO_log* polygons were comprised of ponderosa pine cover but had visible logging entry signs. This label was a temporary assignment resolved in table 122.

Table 121--Probability rules for potential vegetation type assignment of remaining polygons in the UYK43 subwatershed of the Upper Yakima subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Douglas-fir-grand fir	--	100	100	100	100
	Subalpine fir-Engelmann spruce	--	--	--	--	--
4	Douglas-fir-grand fir	100	100	100	100	100
	Subalpine fir-Engelmann spruce	--	--	--	--	--
5	Douglas-fir-grand fir	--	100	100	99	94
	Subalpine fir-Engelmann spruce	--	--	--	100	100
6	Douglas-fir-grand fir	--	38	40	37	39
	Subalpine fir-Engelmann spruce	--	100	100	100	100
7	Douglas-fir-grand fir	--	--	--	3	5
	Subalpine fir-Engelmann spruce	--	100	100	100	100

Table 122--Probability rules for potential vegetation type assignment of remaining polygons in the UYK17 subwatershed of the Upper Yakima subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Ponderosa pine	--	9	38	42	15
	Douglas-fir-grand fir	--	100	100	100	100
4	Ponderosa pine	--	12	32	23	16
	Douglas-fir-grand fir	--	100	100	100	100
5	Ponderosa pine	--	--	--	2	3
	Douglas-fir-grand fir	--	100	100	100	100
6	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	--	100	100	100	100
7	Ponderosa pine	--	--	--	--	--
	Douglas-fir-grand fir	--	100	100	100	100

Table 123--Ordered subgroup rules by potential vegetation type in the Upper Yakima subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 3	Warm-dry
3	Elevation = 2 or 3	Warm-dry
4	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 3 **and** elevation < 8	Warm-dry
3	Aspect class = 2 or 4 **and** elevation = 3 or 4	Warm-dry
4	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Wallowa Subbasin (WAL)

Wallowa subbasin was combined with the Lower Grande Ronde and Upper Grande Ronde subbasins for PVT modeling. See the entry under Lower Grande Ronde.

Wenatchee Subbasin (WEN)

Table 124--Ordered attribute rules for potential vegetation type assignment in the Wenatchee subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 24 or 35 or 36 or 37 **or** spp_us_H = 24 or 35 or 36 or 37
2	Pacific silver fir	Spp_os =6 **or** spp_os_H = 6
3	Western hemlock-western redcedar	(Spp_os = 8 **and** spp_us = 23) **or** (spp_os_H = 8 **and** spp_us_H = 23)
4	*TSHE_mix_us*[2]	(Spp_os = 8 **and** spp_us = 22) **or** (spp_os_H = 8 **and** spp_us_H = 22)
5	Whitebark pine-subalpine larch	Spp_os = 0 or 2 or 10 **and** spp_os_H = 0 or 2 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **or** spp_us_H = 0 or 28 or 29 or 30 or 39
6	Subalpine fir-Engelmann spruce	[Dry][3] spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39
7	Pacific silver fir	[Wet][4] (spp_os = 10 **and** spp_us = 22) **or** (spp_os = 10 **and** spp_us_H = 22) **or** (spp_os_H = 10 **and** spp_us = 22)
8	Subalpine fir-Engelmann spruce	[Wet][4] spp_os = 10 **or** spp_us = 39 **or** spp_os_H = 10 **or** spp_us_H =39
9	Subalpine fir-Engelmann spruce	Spp_os = 7 **or** spp_os_H = 7 **or** spp_us = 25 or 38 **or** spp_us_H = 25 or 38
10	Ponderosa pine	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 **and** spp_us_H = 0 or 20 or 28 or 29 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1
11	Douglas-fir-grand fir	Spp_os = 1 **or** spp_os_H = 1 **or** spp_us = 20 **or** spp_us_H =20
12	*PIPO_log*[2]	Spp_os = 0 or 1 **and** spp_os_H = 0 or 1 **and** spp_us = 0 or 20 or 28 or 29 **and** spp_us_H = 0 or 20 or 28 or 29 **and** (log_type = 2 **or** log_type_H = 2)
13	Douglas-fir-grand fir	Spp_us = 34 **or** spp_us_H = 34

Table 125--Probability rules for potential vegetation type assignment for polygons in the *TSHE_mix_us* group in the Wenatchee subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Pacific silver fir	--	5	--	--	33
	Western hemlock-western redcedar	100	100	100	100	100
3	Pacific silver fir	7	7	--	--	22
	Western hemlock-western redcedar	100	100	100	100	100
4	Pacific silver fir	--	44	40	35	45
	Western hemlock-western redcedar	--	100	100	100	100
5	Pacific silver fir	--	76	84	35	67
	Western hemlock-western redcedar	--	100	100	100	100
6	Pacific silver fir	100	96	96	96	89
	Western hemlock-western redcedar	--	100	100	100	100
7	Pacific silver fir	100	100	100	100	100
	Western hemlock-western redcedar	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

[2] *TSHE_mix_us* were polygons with western hemlock overstory and Douglas-fir-Pacific silver fir-grand fir understory. This label was a temporary assignment resolved in table 125. *PIPO_log* were pure ponderosa pine polygons with evidence of visible logging. This label was a temporary assignment resolved in table 126.

[3] [Dry] indicates that this rule was applied only to a “dry” subset of subwatersheds: WEN19, WEN31, WEN33, and WEN35.

[4] [Wet] indicates that this rule was applied only to a “wet” subset of subwatersheds: WEN01, WEN03, WEN13, WEN16, and WEN18.

Table 126--Probability rules for potential vegetation type assignment of polygons in the *PIPO_log*-labeled group in the Wenatchee subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Ponderosa pine	1	6	17	28	17
	Douglas-fir-grand fir	100	100	100	100	100
3	Ponderosa pine	17	3	9	10	8
	Douglas-fir-grand fir	100	100	100	100	100
4	Ponderosa pine	1	1	4	6	4
	Douglas-fir-grand fir	100	100	100	100	100
5	Ponderosa pine	--	1	4	7	4
	Douglas-fir-grand fir	100	100	100	100	100

Table 127--Probability rules for potential vegetation type assignment of remaining polygons in the WEN19, WEN31, WEN33, and WEN35 subwatershed of the Wenatchee subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	--	--	1	2	--
	Douglas-fir-grand fir	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	1	3	3	--	2
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	--	15	12	1	20
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	50	61	60	15	63
	Douglas-fir-grand fir	100	100	100	100	100
6	Subalpine fir-Engelmann spruce	100	97	94	90	95
	Douglas-fir-grand fir	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--
8	Ponderosa pine	100	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 128--Probability rules for potential vegetation type assignment of remaining polygons in the WEN01, WEN03, WEN13, WEN16, and WEN18 subwatersheds of the Wenatchee subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
2	Subalpine fir-Engelmann spruce	--	2	--	1	1
	Pacific silver fir	--	--	--	--	--
	Douglas-fir-grand fir	60	66	81	68	88
	Western hemlock-western redcedar	100	100	100	100	100
3	Subalpine fir-Engelmann spruce	13	9	2	4	10
	Pacific silver fir	61	20	12	7	13
	Douglas-fir-grand fir	94	66	93	98	90
	Western hemlock-western redcedar	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	24	53	27	26	49
	Pacific silver fir	84	63	38	34	56
	Douglas-fir-grand fir	100	81	89	97	75
	Western hemlock-western redcedar	--	100	100	100	100
5	Subalpine fir-Engelmann spruce	75	66	57	49	73
	Pacific silver fir	100	93	91	93	92
	Douglas-fir-grand fir	--	95	98	97	--
	Western hemlock-western redcedar	--	100	100	100	100
6	Subalpine fir-Engelmann spruce	--	51	41	37	59
	Pacific silver fir	--	100	98	99	100
	Douglas-fir-grand fir	--	--	99	100	--
	Western hemlock-western redcedar	--	--	100	--	--
7	Subalpine fir-Engelmann spruce	--	19	25	21	26
	Pacific silver fir	--	100	100	100	100
	Douglas-fir-grand fir	--	--	--	--	--
	Western hemlock-western redcedar	--	--	--	--	--

Table 129--Ordered subgroup rules by potential vegetation type in the Wenatchee subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 1, 2, 3, or 4 **and** elevation = 2	Warm-dry
3	Aspect class = 2 or 3 **and** elevation = 3	Warm-dry
4	Aspect class = 3 **and** elevation = 4 or 5	Warm-dry
5	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 1, 2, or 3, or 4 **and** elevation = 2, 3 or 4	Warm-dry
3	Aspect class = 2 or 3 **and** elevation = 5 or 6	Warm-dry
4	Aspect class = 3 **and** elevation = 6	Warm-dry
5	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 130--Ordered attribute rules for potential vegetation type assignment in the WEN06 and WEN25 subwatersheds of the Wenatchee subbasin

Step	Potential vegetation type	Attribute rules
1	Whitebark pine-subalpine larch	Spp_os[1] = 0 or 10 **and** spp_os_H = 0 or 10 **and** spp_us = 0 or 28 or 29 or 30 or 39 **or** spp_us_H = 0 or 28 or 29 or 30 or 39
2	Mountain hemlock	Spp_os = 9 **or** spp_os_H = 9 **or** spp_us = 24 **or** spp_us_H = 24
3	Pacific silver fir	Spp_os =6 **or** spp_os_H = 6
4	Western hemlock-western redcedar	(Spp_os = 8 **and** spp_us = 23) **or** (spp_os_H = 8 **and** spp_us_H = 23)
5	Subalpine fir-Engelmann spruce	Spp_os = 0 or 7 or 10 **or** spp_os_H = 0 or 7 or 10 **or** spp_us = 0 or 25 or 28 or 29 or 30 **or** spp_us_H = 0 or 25 or 28 or 30

Table 131--Probability rules for potential vegetation type assignment of remaining polygons in the WEN06 and WEN25 subwatersheds of the Wenatchee subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Subalpine fir-Engelmann spruce	20	28	14	31	--
	Pacific silver fir	--	74	48	47	6
	Western hemlock-western redcedar	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	--	--	--	12	--
	Pacific silver fir	--	61	56	39	58
	Western hemlock-western redcedar	--	100	100	100	100
5	Subalpine fir-Engelmann spruce	--	6	9	12	10
	Pacific silver fir	--	80	85	76	92
	Western hemlock-western redcedar	--	100	100	100	100
6	Subalpine fir-Engelmann spruce	--	28	35	33	22
	Pacific silver fir	--	95	95	93	97
	Western hemlock-western redcedar	--	100	100	100	100
7	Subalpine fir-Engelmann spruce	--	67	66	78	66
	Pacific silver fir	--	96	78	98	99
	Western hemlock-western redcedar	--	100	100	100	100
8	Subalpine fir-Engelmann spruce	--	--	--	100	100
	Pacific silver fir	--	--	--	--	--
	Western hemlock-western redcedar	--	--	--	--	--

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 132--Ordered subgroup rules by potential vegetation type in the WEN06 and WEN25 subwatersheds of the Wenatchee subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class[1] = 1, 2, 3, or 4 **and** elevation = 2	Warm-dry
3	Aspect class = 2 or 3 **and** elevation = 3	Warm-dry
4	Aspect class = 3 **and** elevation = 4 or 5	Warm-dry
5	Spp_os = 5 **or** spp_os_H = 5	Cool-moist
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 1, 2, or 3, or 4 **and** elevation = 2, 3 or 4	Warm-dry
3	Aspect class = 2 or 3 **and** elevation = 5 or 6	Warm-dry
4	Aspect class = 3 **and** elevation = 6	Warm-dry
5	Spp_os = 10 **or** spp_os_H = 10 **or** spp_us = 39 **or** spp_us_H = 39	Harsh
6	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Cool-moist

Yaak Subbasin (YAA)

Table 133--Ordered attribute rules for potential vegetation type assignment in the Yaak subbasin

Step	Potential vegetation type	Attribute rules
1	Mountain hemlock	Spp_os[1] = 9 **or** spp_os_H = 9 **or** spp_us = 36 or 37 **or** spp_us_H = 36 or 37
2	Western hemlock-western redcedar	Spp_os = 8 **or** spp_os_H = 8 **or** spp_us = 23 **or** spp_us_H = 23
3	Aspen	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 61 **and** spp_os_H = 61 **and** spp_us = 0 or 28 or 29 or 82 **and** spp_us_H = 0 or 28 or 29 or 82
4	Cottonwood	Log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 62 **and** spp_os_H = 62 **and** spp_us = 0 or 28 or 29 **and** spp_us_H = 0 or 28 or 29
5	Lodgepole pine	Aspect class = -1 **and** log_type = 0 or 1 **and** log_type_H = 0 or 1 **and** spp_os = 0 or 3 **and** spp_os_H = 0 or 3 **and** spp_us = 0 or 28 or 29 or 31 **and** spp_us_H = 0 or 28 or 29 or 31
6	Douglas-fir-grand fir	Spp_os = 1 or 4 or 16 or 17 or 70 **and** spp_os_H = 1 or 4 or 16 or 17 or 70 **and** spp_us = 22 or 32 or 33 **and** spp_us_H = 22 or 32 or 33
7	Subalpine fir-Engelmann spruce	Spp_os = 7 or 19 or 51 or 67 or 71 or 72 or 77 or 90 **or** spp_os_H = 7 or 19 or 51 or 67 or 71 or 72 or 77 or 90 **or** spp_us = 25 or 38 or 44 **or** spp_us_H = 25 or 38 or 44

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 134--Probability rules for potential vegetation type assignment in the Yaak subbasin

Elevation class[1]	Potential vegetation type	Aspect class				
		Flat	NE	SE	SW	NW
3	Subalpine fir-Engelmann spruce	85	95	90	94	98
	Western hemlock-western redcedar	95	--	--	96	99
	Douglas-fir-grand fir	100	100	100	100	100
4	Subalpine fir-Engelmann spruce	51	65	57	84	90
	Western hemlock-western redcedar	97	96	96	97	98
	Douglas-fir-grand fir	100	100	100	100	100
5	Subalpine fir-Engelmann spruce	96	71	74	89	90
	Western hemlock-western redcedar	100	100	100	99	99
	Douglas-fir-grand fir	--	--	--	100	100
6	Subalpine fir-Engelmann spruce	100	83	81	93	96
	Western hemlock-western redcedar	--	99	100	100	100
	Douglas-fir-grand fir	--	100	--	--	--
7	Subalpine fir-Engelmann spruce	--	94	98	100	100
	Western hemlock-western redcedar	--	99	--	--	--
	Douglas-fir-grand fir	--	100	100	--	--

Table 135--Ordered subgroup rules by potential vegetation type in the Yaak subbasin

Step	Subgroup rules	Subgroup
Douglas-fir-grand fir PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class[1] = -1 or 1 or 4 **and** elevation = 4 and above	Cool-moist
3	Aspect class = 3 **and** elevation = 4	Cool-moist
4	Spp_os = 66 or 74 or 75 **or** spp_os_H = 66 or 74 or 75 **or** spp_us = 34 **or** spp_us_H = 34	Cool-moist
5	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Subalpine fir-Engelmann spruce PVT		
1	All elevation and aspect combinations	Cool-moist
2	Aspect class = 1 or 2 or 3 or 4 **and** elevation = 3	Warm-dry
3	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist
Western hemlock-western redcedar PVT		
1	All elevation and aspect combinations	Warm-dry
2	Aspect class = -1 or 1 or 2 **and** elevation = 3 and above	Cool-moist
3	Aspect class = 3 or 4 **and** elevation = 6 and above	Cool-moist
4	Ripr_wet = 1 **or** ripr_wet_H = 1	Cool-moist

[1] Abbreviations correspond with photointerpreted attributes: spp_os = forest overstory species-current vegetation coverage; spp_os_H = forest overstory species-historical vegetation coverage; spp_us = forest understory species-current vegetation coverage; spp_us_H = forest understory species-historical vegetation coverage; ripr_wet = riparian or wetland status-current vegetation coverage; ripr_wet_H = riparian or wetland status historical vegetation coverage; aspect = aspect class; elevation = elevation class; log_type = type of visible logging activity-current vegetation coverage; log_type_H = type of visible logging activity-historical vegetation coverage (see Hessburg et al. 1999a, for a complete listing and description of photointerpretation methods). Numerical codes associated with each attribute are translated in table 136.

Table 136--Numerical codes corresponding with photointerpreted attributes identified in tables 1-135 [1]

Ripr_wet:

1 = riparian or wetland area

2 = not a riparian or wetland area

Log_type:

1 = no logging apparent

2 = regenerated (clearcut, shelterwood, seedtree harvests)

3 = selectively harvested (selective harvest, partial removal, overstory removal, final removal)

4 = thinned (commercial, precommercial)

5 = patch clearcut (where clearcut patches are estimated to be less than 4 hectares)

Spp_os:

1 = PIPO	ponderosa pine
2 = LAOC	western larch
3 = PICO	lodgepole pine
4 = PSME	Douglas-fir
5 = ABGR-ABCO	grand fir-white fir
6 = ABAM	Pacific silver fir
7 = ABLA2-PIEN	subalpine fir-Engelmann spruce
8 = TSHE-THPL	western hemlock-western redcedar
9 = TSME	mountain hemlock
10 = PIAL-LALY	whitebark pine-subalpine larch
11 = PIMO-PILA	western white pine-sugar pine
12 = Hardwood	maple, birch, poplar, etc. (Oregon and Washington only)
13 = Juniper	Juniper species
14 = ABPR	noble fir
15 = ABMA	Shasta red fir
16 = PIPO-PIMO-PILA	ponderosa pine-western white pine-sugar pine
17 = PIPO-PSME	ponderosa pine-Douglas-fir
18 = PSME-TSME	Douglas-fir-mountain hemlock
19 = PICO-PIEN	lodgepole pine-Engelmann spruce
50 = TSME-ABCO	mountain hemlock-white fir
51 = PSME-PIEN	Douglas-fir-Engelmann spruce
52 = CADE	incense-cedar
53 = LAOC-PICO	western larch-lodgepole pine
54 = PSME-LAOC	Douglas-fir-western larch
55 = PIFL	limber pine
56 = PIPU	blue spruce
57 = PIMO2	singleleaf pinyon pine
58 = PIGL	white spruce
59 = Maple	maple
60 = Birch	birch
61 = Aspen	aspen
62 = Cottonwood	cottonwood

Table 136--Numerical codes corresponding with photointerpreted attributes identified in tables 1-135 [1](continued)

63 = PSME-PIFL	Douglas-fir-limber pine
64 = PIMO2-JUSC	singleleaf pinyon pine-Rocky Mountain juniper
65 = PSME-PIMO	Douglas-fir-western white pine
66 = ABGR-PIMO	grand fir-western white pine
67 = ABLA2-PIMO	subalpine fir-western white pine
68 = LAOC-PIMO	western larch-western white pine
69 = LAOC-PICO-PIMO	western larch-lodgepole pine-western white pine
70 = LAOC-PIPO	western larch-ponderosa pine
71 = LAOC-PIEN	western larch-Engelmann spruce
72 = PICO-ABLA2	lodgepole pine-subalpine fir
73 = PICO-PSME	lodgepole pine-Douglas-fir
74 = PICO-ABGR	lodgepole pine-grand fir
75 = PSME-ABGR	Douglas-fir-grand fir
76 = ABLA2-PIFL	subalpine fir-limber pine
77 = ABGR-PIEN	grand fir-Engelmann spruce
78 = PSME-Aspen	Douglas-fir-aspen
79 = PICO-Aspen	lodgepole pine-aspen
90 = ABLA2-PSME	subalpine fir-Douglas-fir
91 = ABGR-PIPO	grand fir-ponderosa pine
92 = ABGR-ABLA2	grand fir-subalpine fir
93 = ABGR-LAOC	grand fir-western larch
94 = Russian Olive	Russian olive
95 = ABLA2-PIAL	subalpine fir-whitebark pine

Spp_us:

20 = PIPO	ponderosa pine
21 = LAOC-PICO	western larch-lodgepole pine
22 = PSME-ABGR-ABCO-ABAM	Douglas-fir-grand fir-white fir-Pacific silver fir
23 = TSHE-THPL	western hemlock-western redcedar
24 = TSME	mountain hemlock
25 = ABLA2-PIEN	subalpine fir-Engelmann spruce
26 = Hardwood	hardwoods (Oregon and Washington only)
27 = Juniper	Juniper species
28 = Grass-forb	grass-forb
29 = Shrub	shrubs
30 = Bare ground	bare ground
31 = PICO	lodgepole pine
32 = PIPO-PICO	ponderosa pine-lodgepole pine
33 = PIPO-PSME	ponderosa pine-Douglas-fir
34 = ABGR-ABCO	grand fir-white fir
35 = TSME-ABCO	mountain hemlock-white fir
36 = TSME-PICO	mountain hemlock-lodgepole pine
37 = PSME-TSME	Douglas-fir-mountain hemlock
38 = PICO-PIEN	lodgepole pine-Engelmann spruce

Table 136--Numerical codes corresponding with photointerpreted attributes identified in tables 1-135 [1](continued)

39 = PIAL-LALY	whitebark pine-subalpine larch
40 = ABMA	Shasta red fir
41 = CADE	incense-cedar
42 = PIMO	western white pine
43 = PSME-LAOC	Douglas-fir-western larch
44 = PSME-PIEN	Douglas-fir-Engelmann spruce
45 = PIFL	limber pine
46 = PIPU	blue spruce
47 = PIMO2	singleleaf pinyon pine
48 = PIGL	white spruce
80 = Maple	maple
81 = Birch	birch
82 = Aspen	aspen
83 = Cottonwood	cottonwood
84 = PSME-PIFL	Douglas-fir-limber pine
85 = PICO-PSME	lodgepole pine-Douglas-fir
86 = XETE	beargrass
87 = ABAM	Pacific silver fir

Elevation class:

1 = 0-304.8 meters
2 = 304.9-609.6 m
3 = 609.7-914.4 m
4 = 914.5-1219.2 m
5 = 1219.3-1524.0 m
6 = 1524.1-1828.8 m
7 = 1828.9-2133.6 m
8 = 2133.7-2438.4 m
9 = 2438.5-2743.2 m
10 = 2743.3-3048.0 m
11 = 3048.1-3352.8 m
12 = 3352.9-3657.6 m
13 = 3657.7-3962.4 m
14 = 3962.5-4267.2 m
15 = 4267.3-4572.0 m

Aspect class:

-1 = no aspect (flat)
1 = 351° to 80° true
2 = 81° to 170° true
3 = 171° to 260° true
4 = 261° to 350° true

[1] Refer also to Hessburg et al. 1999a.

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