Appendix U

Inventory Strategy

Contents

List of Tables

List of Figures

U. INVENTORY STRATEGY

For landscape planning, MRC uses a suite of inventory databases, forest growth models, habitat models, and Geographical Information System (GIS) programs to analyze and present current and projected forest conditions. All of these components reflect actual *on-the-ground* conditions and constraints. They enable planners to assess and report the effects of a wide range of management activities at various levels: stands, watershed units, and ownership.

U.1 Stands

Stands are the smallest geographic units in landscape planning. The size and extent of a stand is based on vegetation, topography, and sensitivity attributes, as well as regulatory considerations. Critical information stored in the relational databases for each stand includes

- Stand identifier.
- Acres.
- Vegetation codes.
- Sensitivity (watercourse buffers, old growth stands, spotted owls, etc.).
- Site class.
- Harvest timing.

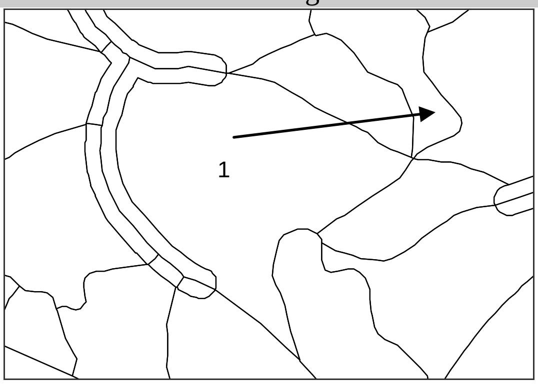
Riparian stands are a sub-set of all the stands across the plan area. By definition, some portion of a riparian stand is adjacent to a Class I, Large Class II, or Small Class II watercourse. In effect, riparian stands may contain Class I, Large Class II, and Small Class II AMZ.

U.1.1 Stand delineation and identification

MRC identifies stands using aerial photos, draws stand boundaries on a base map, assigns a unique identifier to each stand, and encodes the stand information in our inventory databases. Stands are manageable units, bounded by roads, ridges, or watercourse buffers. Our GIS contains stand boundaries, along with a stand identifier. This unique stand identifier allows tables with that same identifier within a relational database to be joined to the GIS stand coverage. Coverage is a geographic data set representing a specific feature on a map, e.g., vegetation coverage. Generally, the minimum size or mapping unit for a stand is 20 ac, unless the stand has a particular sensitivity (such as watercourses) or a sharp contrast in vegetation. Sensitivity constraints may reduce the minimum stand size to less than 1 ac, while a sharp contrast in vegetation could result in a minimum stand size of 10 ac or less.

Figure U-1 shows the relationship between stands in the GIS and stands in a relational database. The GIS image on the left displays a stand with a unique identifier of 1. A relational database stores information about the stand, such as number of acres and duration between harvests. In this example, the vegetation code, CH2D, is a combination of species code, size code, and density code; stand 1 consists of a conifer hardwood mix (CH), predominantly in size class 2 (8-16 in.), with 60-80% canopy cover (density class D).

GIS Image



Information in Relational Database

Stand	Acres	Vegetation	Sensitivity	Site Class	Harvest Timing (years)
1	25	CH2D	00010	III	10
2	14	RD3L	10001	III	5

Figure U-1 GIS and Relational Database

U.1.2 Stand acres

The GIS calculates the number of acres in a stand and exports this information to the relational database. Acres are gross acres (i.e., the total acres within the GIS polygon) and net acres (i.e., an adjustment in stand acreage due to roads and landings within the stand). In calculating net acres, MRC reduces the stand acreage by 3% for roads and landings since these features represent approximately 3% of all the ownership. We use net acres to extrapolate per acre estimates of volume, habitat, and other parameters to larger scale units such as watersheds and ownership.

U.1.3 Stand vegetation

Each stand has a vegetation label or *strata*. MRC assigns a vegetation label for each stand from aerial photos or field visits. We update vegetation labels when stands are harvested or at least every 20 years if a stand is not harvested. The vegetation label consists of a size code, a species code, and a density code. Figure U-2 shows vegetation labels assigned to various stands.

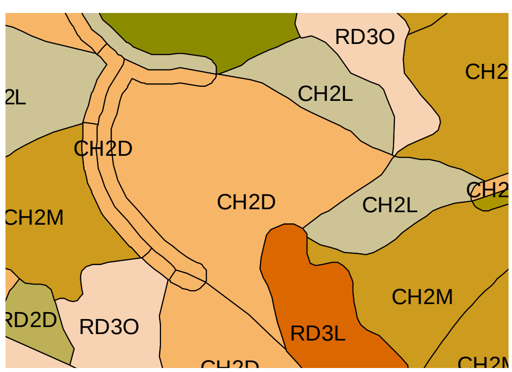


Figure U-2 Vegetation Labels in Stands

U.1.3.1 Size Code

Tree size is the first component of vegetation classification. We assign a dbh class to each of the GIS polygons representing a forested stand (Table U-1).

Table U-1 DBH Classes

Class	DBH (in.)
1	0- 8
2	8-16
3	16-24
4	24-32
5	>32

Figure U-3 shows a basic decision diagram to determine the dominant dbh in a stand.

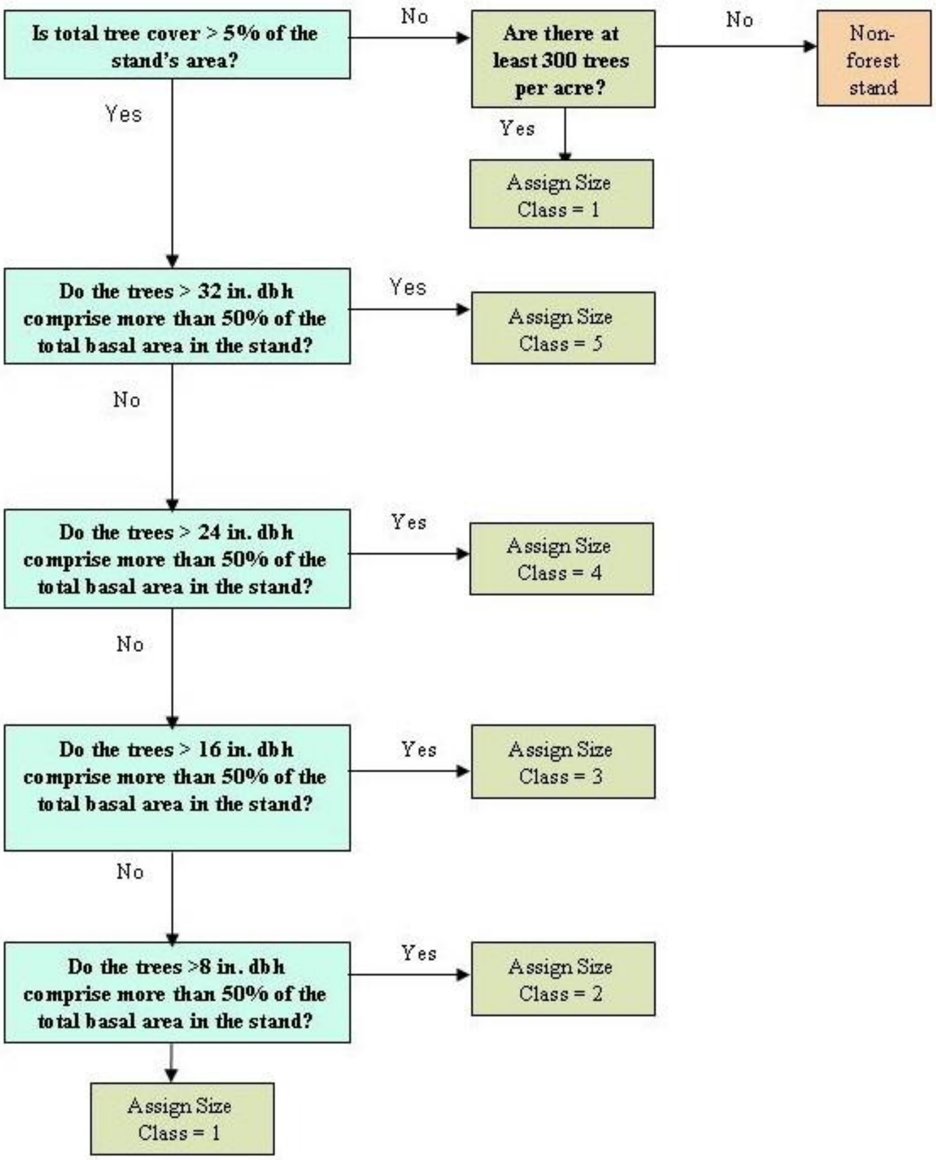


Figure U-3 Rules for Assigning DBH Classes to Stands

U.1.3.2 Species code

GIS vegetation polygons that have 5% or more of their area covered by tree crowns are classified as forest.

U.1.3.2.1 Forest polygons

MRC labels a forested polygon as conifer when 70% or more of the basal area in the dominant size class of the stand is conifer. Similarly, we label a forested polygon as hardwood when 70% or more of the basal area in the dominant size class in the stand is hardwood. If there is not a single species in the dominant size class that accounts for 70% or more of the basal area, we label the polygon as either mixed conifer species or mixed hardwood species, depending on whether conifers or hardwoods account for 70% or more of the basal area of the stand. Tables U-2 through U-5 lists the codes for conifer and hardwood species.

Table U-2 Conifer Codes

Code	Species
RW	Coast redwood
DF	Douglas-fir

Table U-3 Hardwood Codes

Code	Species
AL	Alder
TO	Tanoak
LO	Live oak
BO	Black oak
MO	Madrone

Table U-4 Multiple Conifer Codes

Code	Conifer Species
RD	Redwood/Douglas-fir
RE	Redwood/Eucalyptus
RM	Redwood/Monterey Pine

Table U-5 Multiple Hardwood Codes

Code	Hardwood Species
CH	Conifer/Hardwood mix
MH	Mixed Hardwood

U.1.3.2.2 Non-forest polygons

GIS vegetation polygons that do not have 5% or more of their area covered by tree crowns are classified as non-forest. Table U-6 lists the codes for non-forest vegetation.

Table U-6 Non-forest Vegetation

Code	Vegetation
BR	Brush
GR	Grass and meadows
BG	Bare ground, including rocks and watercourse beds
WA	Water
PG	Pygmy Forest
GX	Oak woodland
RK	Rocky Outcrop

U.1.3.3 Density code

Density classes are based on the canopy closure of all trees greater than 8 in. dbh, i.e., Size Class 2 and above. In stands that are Size Class 1, MRC estimates canopy closure based on all the trees in the stand. All canopy estimates of cruised inventory stands will use a vertical sight tube with protocols based on recommendations from Berbech et al (1999 and Robards et al (2000). Tables U-7 and U-8 list the density codes for overstory and understory.

Table U-7 Density Codes

Code	Coverage %	Description
Overstory		
O	0 – 20	Open
L	20 – 40	Low
M	40 - 60	Medium
D	60 – 80	Dense
E	80 – 100	Extremely Dense
Code	**Coverage %**	**Description**
Understory		
O	0-20	Open
L	20-40	Low
M	40-60	Medium
D	60-80	Dense
E	80-100	Extremely dense

U.2 Sampling Method

The MRC ownership is divided into sustainability units. Sustainability units are the basis for sampling and for confidence targets. MRC also uses them to assess timber sustainability. The size of a sustainability unit depends on the planning watershed boundaries that contain similar characteristics. Generally, sustainability units do not exceed 20,000 ac. Our sampling goal is to be within 10% of the net board foot volume within a sustainability unit at the 90% confidence interval. Figure U-4 shows the sustainability units within the plan area.

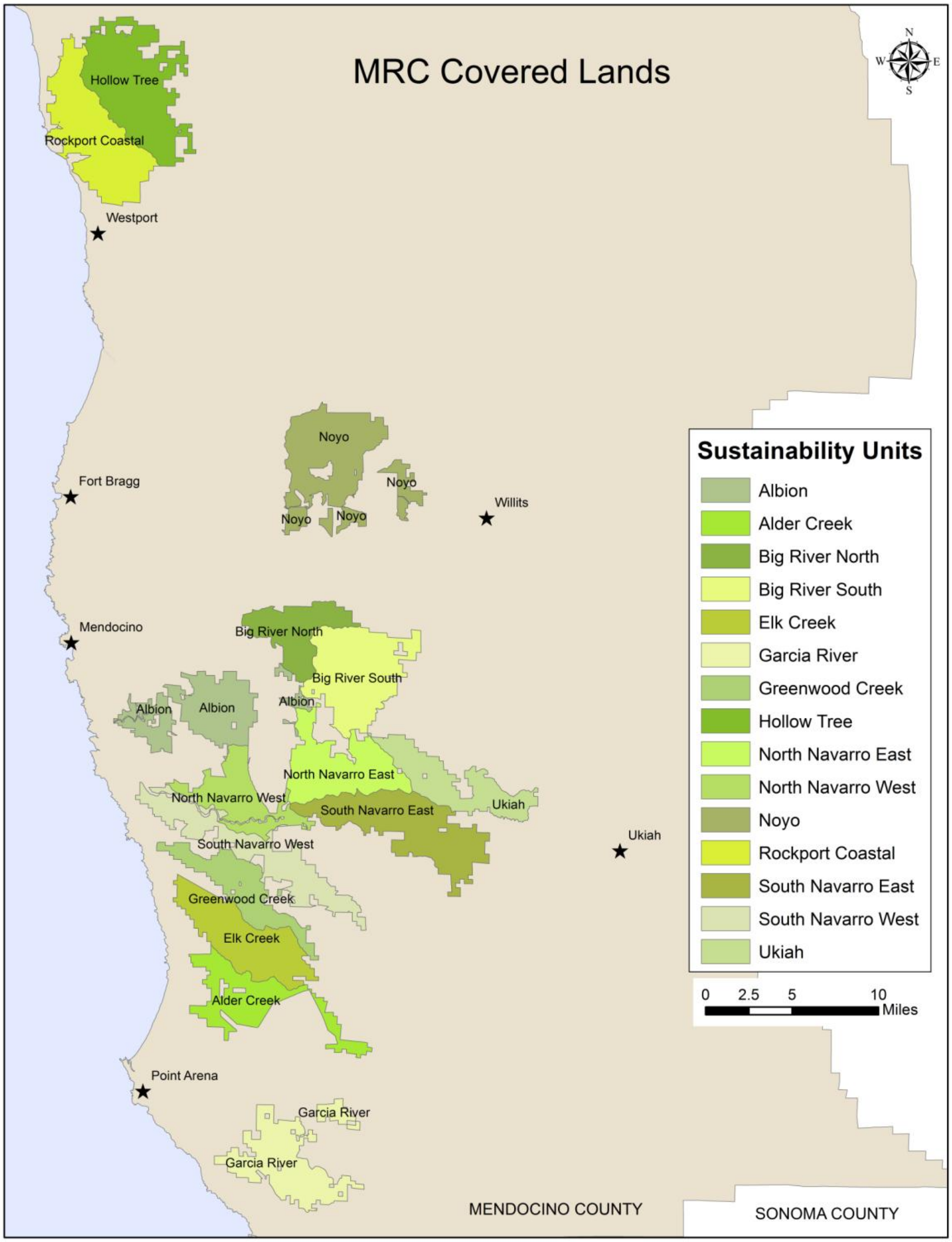


Figure U-4 MRC Sustainability Units

U.2.1 Stratified sampling

Vegetation labels are the basis for a stratified sampling system to acquire vegetation data. MRC samples more stands in strata types with higher expected volumes, since the principal goal of sampling is to derive confidence in volume estimates.

U.2.1.1 Selecting stands for sampling

MRC randomly selects stands for sampling across a sustainability unit or planning watershed. When sampling, we do not make any effort to separate sensitivity classes within a vegetation stratum.

U.2.1.2 Sampling procedure

MRC creates evenly distributed plot points on a stand map. Using this plotted stand map in the field, a forester determines the entry point to the first plot. The entry point is the anchor point for all cruise lines. A forester takes its GPS coordinates and writes directions to the first plot on flagging displayed at the entry point. Subsequent flagging will identify additional plot locations, giving the plot number and directions to the next plot.

U.2.1.3 Variable radius sampling

A definitive method of determining the basal area of an acre of forest would be to cut all the trees, leave stumps that were 4.5 ft high, and then measure, in square feet, the area covered by the flat stumps. Obviously, there needs to be a method for estimating basal area of a forest acre without cutting any trees. Among the available methods, MRC use variable radius sampling (Avery and Burkhart 1994, p. 217f).

Variable radius sampling selects trees for tally by size not by frequency. Using an angle gauge (i.e., a relascope, a prism, etc.) with a calibrated BAF (*basal area factor)*, a forester can estimate basal area in square feet per acre. The BAF might be, for example, 10, 20, or 40 for 10, 20, or 40 square feet. In our example, we will assume the BAF is 10. Also, for this simplified discussion, we can say that the sampling method focuses on 2 variables to determine what trees to count and what trees to ignore: (1) the diameter of the tree (dbh) and (2) the distance of the tree from the sampling point.

Inclusion or exclusion of a tree from the sampling count depends, for example, on how the tree appears to the forester when viewed through the selected BAF prism. If a forester, standing at the designated sampling point, looks at a tree through a BAF prism and sees the center portion of the tree trunk offset from the portion above and below, the tree is “out” or not counted (Figure U-5). On the other hand, if the forester sees that the center portion of the tree trunk overlaps the sections above and below it, tree is “in” and is counted in the sampling plot (Figure U-5).

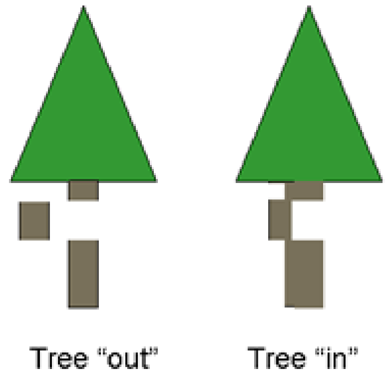


Figure U-5 Tallying Trees with BAF Prism

In the field, the forester actually stands at a sampling point and turns 360 degrees, all the while looking through the prism and counting the trees that are “in”. The number of trees counted multiplied by the BAF equals the estimated basal area in square feet.

In some cases, smaller trees closer to the sampling point will be excluded from the count, while larger trees at a greater distance from the sampling point will be included in the count.[1] In our example, if the distance of the tree from the sampling point is within 33 times its diameter,[2] the tree will be counted (Avery and Burkhart 1994, p. 219). Conceptually, all trees are encircled in imaginary zones that are 33 times the diameter of each tree stem. If a tree’s imaginary zone encompasses the sampling point, the tree will be counted. In Figure U-6, the trees in Zone A and Zone B will be counted. The tree in Zone C will not be counted.

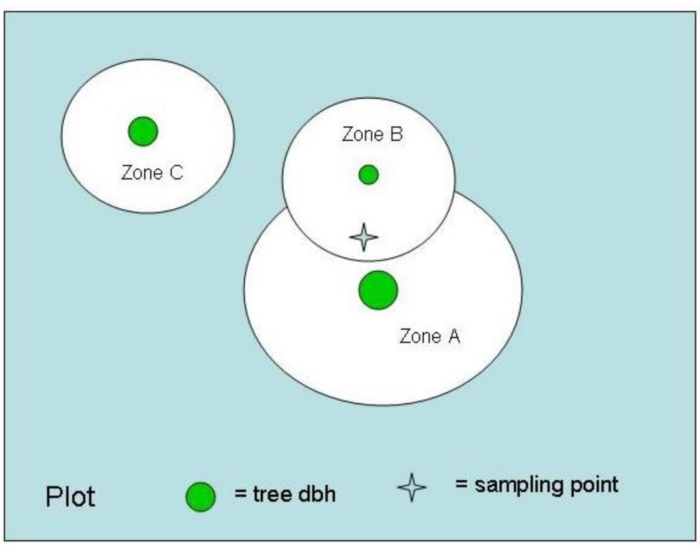


Figure U-6 Tally Zones

[1] According to Avery and Burkhart (1994), the probability of a tree being tallied is proportional to the basal area of its stem so that a stem with a 12 in. dbh has 4 times the probability of being counted as a stem with a 6 in. dbh (p. 220).
[2] For a BAF 10, the ratio of the tree diameter to the plot radius is 1:33.

U.2.1.4 Data collection at plots

Data collection is for inventory; evaluation of northern spotted owl habitat; effectiveness monitoring of riparian stand conditions; trend monitoring of snags, wildlife trees, and recruitment trees; and trend monitoring of downed wood. MRC tallies tree species and measures trees greater than 6 in. within a variable radius plot, moving in a clockwise direction beginning at a north line. The procedure for data collection at plots is as follows:

1. Measure dbh at 4.5 ft above the ground level (or root collar) on the uphill side of the tree. Accuracy is to the nearest inch. In the case of irregularities, such as swelling, bumps, depressions, and branches, the forester measures immediately above the irregularity where it ceases to affect the stem.
2. Measure total height on all trees in every third plot, starting with the first plot. If the angle from level to the point of measurement exceeds 45^0, the forester must increase the distance from the measured tree to reduce the angle. At least 30% of the total trees should have height measurements. Measured trees should represent a good distribution throughout the diameter classes.
3. Measure canopy cover using a vertical site tube with sampling guidelines from Berbech et al (1999) and Robards et al (2000).
4. Measure height-to-crown-base (HTCB) on every tree measured for height. This measurement, which provides an estimate of the total crown area, is taken from the base of the tree to the visually balanced base of the crown.
5. Enter a status code for each sampled tree, recording features such as live, snag, old growth, broken top, dead top, forked top, recruitment tree, and wildlife tree.
6. Measure downed logs on each plot in a fixed 0.10 acre plot (37.2 ft radius).
7. Ensure that sampled logs meet the following criteria:
   - A log must have an average diameter of at least 6 in. (the large end diameter + the small end diameter divided by 2).
   - A log must have a length of at least 10 ft, for average diameters less than 16 in., or a length of at least 6 ft, for average diameters greater than 15.9 in.

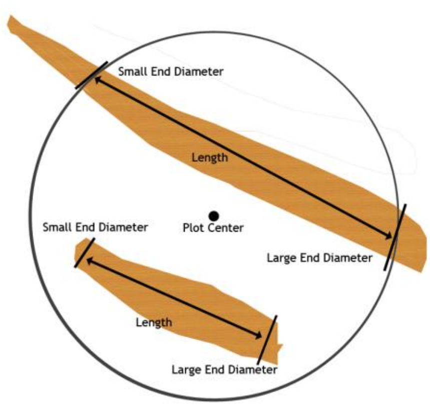


Figure U-7 Measuring Downed Logs on a Plot

8. Determine if downed logs are hard (i.e., no material gives way when kicked) or soft (material falls of when kicked). Hard logs generally have an intact top, bark, and sound wood. Soft logs usually have a broken top, sloughed bark, and decaying wood.

9. Measure trees less than 6 in. on every plot. The sample area measured for regeneration is a fixed 0.01 acre plot (11.8 ft radius). Record all conifers and hardwoods by species and tally seedlings and saplings in 2 size classes: 0-2.9 in. dbh and 3-5.9 in. dbh.
10. Measure shrubs. Shrubs are any plant species less than 10 ft tall with crown diameters at least 75% of the height. The measurement is based on an ocular estimate of the shrub cover within a 0.10 ac plot (37.2 ft radius). The dominant shrub species is recorded along with the density codes.
11. Note any further information about the cruised stand such as location of skid trails, springs, watercourses, historical artifacts, woodrat nests, bird nests, owls, raptors, mountain lions, and bears.
12. Calculate the basal area of a stand using at least 6 trees per plot.
13. Calculate the basal area of a stand using 5-10 trees per plot.

U.2.1.5 Site class sampling

The procedure for effectiveness monitoring of riparian stand conditions is as follows:

1. Select approximately 3-5 trees per stand as site trees. Selected site trees should represent conifer trees that display no deformities and are in a co-dominant position in the stand.
2. Measure the site trees for species, dbh, height, htcb, and age.
3. Extrapolate the estimated site class from the sampled trees to other stands within the planning watershed based on soil stratification.

U.2.1.6 Measuring tolerance standards

Table U-8 shows the tolerance standards MRC uses to evaluate the accuracy of field measurement.

Table U-8 Tolerance Standards

Measurement	Tolerance
Percent slope	±10%
Percent brush cover	±20%
Species identification	±1% of the total trees recorded
Diameter at breast height	±1.0 in.
Total tree height	±5 ft
Height to crown base	±10 ft
Breast height age	±5 yr

U.3 Estimates of trees and downed wood

U.3.1 Snags, wildlife trees, and recruitment trees

MRC records snags, wildlife trees, and recruitment trees as part of routine inventory using variable plot samples. The process that MRC also uses to monitor trends of snags, wildlife trees, and recruitment trees is the same for all 3 habitat elements.

To estimate the number of snags per acre, we use a 10 BAF and the dbh of all snags within the plot. With a 10 BAF, a 12 in. dbh snag would have a plot radius of 33 ft. The plot radius, in turn, determines the acreage of the plot (e.g., a 33 ft radius is a 0.0785 ac plot). If the plot, in this example, were expanded to an acre, there would be 12 snags per acre. We estimate the total number of snags in a stand by dividing the sum of the estimated number of snags per acre by the total plot count. So, again, in our example, we would estimate there were 1.2 snags in the stand (i.e., 12 snags/ac divided by 10 plots).

To estimate average snags per acre for the plan area [AS(pa)], we take the estimated number of snags/ac in each stand [ES(ac)] multiplied by the acreage of each stand [S(ac)] and sum the product for all stands in the plan area.

$$\sum S(ac.) \ \ X \ \ S(ac) = S(pa)$$

The sum of all the snags for the plan area [S(pa)] is then divided by the total acreage of the plan area (213,244 ac) to estimate average snags per acre [AS(ac)].

$$S(pa) \ / \ 213{,}244 \text{ ac} = AS(ac)$$

U.3.2 Downed wood

As part of routine inventory, MRC also records downed wood with the same process used to monitor downed wood. We measure downed logs on every plot. The sample area for downed logs is a fixed $1/10^{th}$ acre plot (37.2 ft radius). Initially, we compute the number of downed logs per ac [DL(ac)] for a stand by multiplying the number of downed logs per plot [DL(plot)] by 10 since the plot size is a $1/10^{th}$ ac.

$$DL \ (plot) \ \ X \ \ 10 \ = \ DL(ac)$$

To estimate average downed logs per acre for the plan area, we take the estimated number of downed logs/ac in each stand [DL(ac)] multiplied by the acreage of each stand [S(ac)] and sum the product for all stands in the plan area [DL(pa)].

$$\sum DL(ac) \ \ X \ \ S(ac) \ = DL(pa)$$

The sum of all the downed logs for the plan area [DL(pa)] is then divided by the total acreage of the plan area (213,244 ac) to estimate average downed logs per acre (ADL(ac)].

$$DL(pa) \ / \ 213{,}244 \text{ ac} = ADL(ac)$$

U.4 Inventory Updates

Estimates in the forest inventory change with time because of forest growth, harvesting events, and natural disturbances. MRC updates the inventory in December and January of each year and produces annual reports.

U.4.1 Method of updating inventory database

Growth

Using CRYPTOS, MRC "grows" all sampled plots 10 years of age or less on an annual basis and produces 5-year growth estimates. Any plot older than 10 years is removed from the pool of plots that is used to provide estimates for a given stratum. This is to minimize an over-reliance on the growth model for maintaining the inventory.

Harvested stands

We generally cruise a percentage of harvested stands to compare actual retention levels with desired retention levels. Our goal is to sample at least 30 plots in 3 different stands estimated to have at least 100 ft^2 of conifer basal area. For stands estimated to have less than 100 ft^2 of conifer basal area, the goal is 20 plots in 2 different stands. We sometimes cruise harvested stands after a harvest to compare actual retention levels with desired retention levels. This sample data becomes part of the stratum estimate.

Natural disturbances
A natural disturbance has a similar effect on a stand as a harvest. As a result, MRC treats natural disturbances similar to a harvest, making adjustments to strata assignments and applying the appropriate tree lists.

Creating tree lists
Using visual evidence from aerial photos, MRC initially places stands into 1 of more than 40 vegetation classes. In a given planning watershed, MRC samples a subset of stands in each vegetation class for tree data according to the data collection protocols in section U.2.1.3. We then enter the data from the sampled stands into a Microsoft Access database and create a tree list. Next we assign tree lists from sampled stands to un-sampled stands of the same vegetation class. For example, there are 20 RD3D (vegetation class) stands in a planning watershed. Of these, 3 are sampled stands and 17 are un-sampled stands. Applying a set of queries in the main inventory database extends the tree lists from the sampled stands to the un-sampled stands within the same vegetation class and the same planning watershed. The net effect of this process is that the un-sampled stands have a tree list which reflects the average of the sampled stands for a particular vegetation class within a planning watershed.

U.5 Growth and Yield Modeling

The growth model commonly used in the redwood region is called CRYPTOS. The growth and yield projections used in the HCP/NCCP are based on CRYPTOS. Projected inventory, harvest estimates, and growth estimates are output every 5 years.

U.6 Stand Sensitivity Attributes

MRC assigns each stand a code that indicates any special management considerations for the stand. With the code, we can generate maps that display the geographic extent of the sensitive areas. The codes associate the stands to silviculture strategies in growth and yield modeling that are consistent with management policies. Figure U-8 shows a set of stands with their respective sensitivity codes.

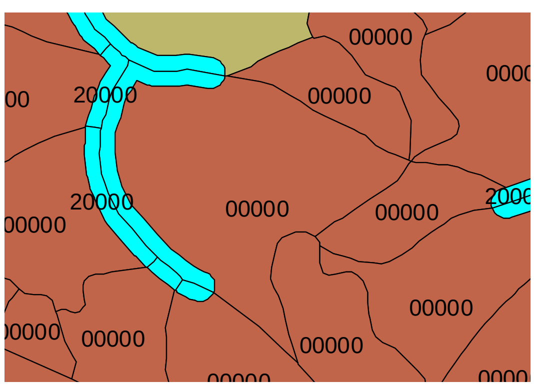


Figure U-8 Sensitivity Assignments

The sensitivity code consists of 5 digits. For example, a stand with a sensitivity code of 20000 has watercourse sensitivity (Large Class II) but no visual observations, special considerations, wildlife, or vegetation sensitivities. Table U-9 explains the key to the sensitivity codes.

Table U-9 Key to Sensitivity Codes

Key to Sensitivity Codes									
Watercourse		**Visual Observations**		**Special Considerations**		**Wildlife**		**Vegetation**	
0	No Concern	0	No Concern	0	No Concern	0	No Concern	0	No Concern
1	Class I	1	Special View shed	1	Special Treatment Area	1	Spotted Owl – High	1	Old Growth – Type I
2	Large Class II			2	Deeded Conservation Easement	2	Spotted Owl – Moderate	2	Pygmy Forest
3	Class I Floodplain			3	Non-deeded special conservation	3	Spotted Owl – Limited	3	Old Growth – Type II
4	Class II Floodplain			4	Carbon Management	4	Marbled Murrelet	4	Rock and Talus
5	Floodplain					5	Point Arena Mountain Beaver	5	Oak Woodland
6	Small Class II					6	Spotted Owl – High/Marbled Murrelet/Point Arena Mountain Beaver	6	Old Growth Buffer
						7	Spotted Owl – High/Marbled Murrelet		
						8	Marbled Murrelet Buffer		
						9	Spotted Owl – High/Point Arena Mountain Beaver		

U.7 Structure Classes and Habitat Inferences

MRC uses sampled data to make inferences about sampled stands and strata for each sustainability unit. The types of inferences include estimates of timber volume, basal area, tree density, and species composition. We use the sampled data to place stands in structural classes based on species composition, dominant dbh, and canopy closure. With these structural classes, we assess the quality and quantity of habitat conditions across our land.

After obtaining sampled data, MRC re-classifies stands and strata into structure classes using empirical evidence. We compile these structure classes from actual tree lists for each stand using data collected from the stand or using the recompilation process described above. With a crosswalk between structure classes and habitat types, we then assign habitat types for northern spotted owls (see Table 10-8).

Table U-10 lists the various structure classes.

Table U-10 Structure Classes

Structure Classes			
Structure Class	**Tree Type**	**Dominant Size Class**	**Min. Canopy**
0	Non-forested	0	0
1	Mixed Hardwoods	<8”	<40%
2	Mixed Hardwoods	>16”	<40%
3	Mixed Hardwoods	<16”	>40%

Structure Classes			
Structure Class	**Tree Type**	**Dominant Size Class**	**Min. Canopy**
4	Mixed Hardwoods	>16”	>40%
5	Mixed Hardwoods	<16”	>60%
6	Mixed Hardwoods	>16”	>60%
7	Mixed Conifers/Hardwoods	<16”	<40%
8	Mixed Conifers/Hardwoods	16-24”	<40%
9	Mixed Conifers/Hardwoods	<16”	>40%
10	Mixed Conifers/Hardwoods	> 8”	>40%
11	Mixed Conifers/Hardwoods	<8”	>60%
12	Mixed Conifers/Hardwoods	16-24”	>60%
13	Conifer	<8”	<40%
14	Conifer	16–24”	<20%
15	Conifer	24–32”	<40%
16	Conifer	>32”	<40%
17	Conifer	<16”	>40%
18	Conifer	16–24”	>40%
19	Conifer	24–32”	>40%
20	Conifer	>32”	>40%
21	Conifer	<16”	>60%
22	Conifer	16–24”	>60%
23	Conifer	24–32”	>60%
24	Conifer	>32”	>60%

U.8 Monitoring Riparian Stands

MRC samples riparian stands in the same manner as upslope stands but we categorize them separately in order to manage aquatic habitat. Many riparian stands currently have characteristics (basal area, canopy cover, species mix) similar to upslope stands due to legacy harvests. This will change as we promote distinct stand characteristics within AMZs.

MRC currently has samples for 65 separate riparian stands throughout the plan area. Table U-11 lists them by planning watershed and includes the stand ID.

Table U-11 Riparian Stands in the Plan Area

Riparian Stands in the Plan Area	
Planning Watershed	Stand ID
Middle Albion River	AM00059A
Middle Albion River	AM00090A
Middle Albion River	AM00033A
Upper Albion River	AU00021A
Upper Albion River	AU00022A
East Branch North Fork Big River	BE00005A
East Branch North Fork Big River	BE00059A
East Branch North Fork Big River	BE00025A
East Branch North Fork Big River	BE00003A
East Branch North Fork Big River	BE00041B
Lower North Fork Big River	BL00007B
Lower North Fork Big River	BL00005A

Riparian Stands in the Plan Area	
Planning Watershed	Stand ID
Lower North Fork Big River	BL00007A
Martin Creek	BI00056A
Martin Creek	BI00025A
Martin Creek	BG00001A
Mettick Creek	BM00070A
South Daugherty Creek	BS00059A
South Daugherty Creek	BS00254A
South Daugherty Creek	BS00145B
Dutch Henry Creek	ED00067A
Dutch Henry Creek	ED00135A
Dutch Henry Creek	ED00131A
Dutch Henry Creek	ED00144A
Dutch Henry Creek	ED00143A
Dutch Henry Creek	ED00062A
John Smith Creek	EJ00035A
Little North Fork Navarro River	EN00250A
Little North Fork Navarro River	EN00014A
Little North Fork Navarro River	EN00006A
Little North Fork Navarro River	EN00208A
Lower South Branch Navarro River	EL00085A
Middle South Branch Navarro River	EM00028A
Middle South Branch Navarro River	EM00144A
Middle South Branch Navarro River	EM00116A
Middle South Branch Navarro River	EM00135A
Middle South Branch Navarro River	EM00102A
Middle South Branch Navarro River	EM00045A
Middle South Branch Navarro River	EM00137A
Upper South Branch Navarro River	EU00060A
Hendy Woods	WH00015A
Hendy Woods	WH00042B
Hendy Woods	WH00042A
Hendy Woods	WH00023A
Hendy Woods	WH00025A
Hendy Woods	WH00012B
Lower Navarro River	WL00068A
Lower Navarro River	WL00081B
Lower Navarro River	WL00084A
Lower Navarro River	WL00126A
Middle Navarro River	WM00129A
Middle Navarro River	WM00052A
Middle Navarro River	WM00047A
Middle Navarro River	WM00056A
North Fork Navarro River	WN00058A
Hayworth Creek	NH00166A

Riparian Stands in the Plan Area	
Planning Watershed	Stand ID
McMullen Creek	NC00029A
McMullen Creek	NC00009A
Olds Creek	NO00056
Olds Creek	NO00012A
Cottaneva Creek	RC00002A
Lower Hollow Tree Creek	RL00001B
Upper Hollow Tree Creek	RU00130A
Lower Greenwood Creek	CG00075B
Upper Ackerman	UU00014