

1 **Board of Forestry and Fire Protection**

2 **Silviculture Amendments 2026**

3 **Title 14 of the California Code of Regulations**

4 **Division 1.5, Chapter 4**

5 **Subchapters 4, 5 and 6**

6
7 **§ 913.4. Special Prescriptions.**

8 The following special Harvesting Methods are appropriate under certain conditions:

9 *****

10 (d) Variable Retention. Variable retention is an approach to harvesting based on the
11 retention of structural elements or biological legacies (trees, Snags, logs, etc.) from the
12 pre-harvest stand for integration into the post-harvest stand to achieve various
13 ecological, social and geomorphic objectives. The major variables in the variable
14 retention harvest system are retention types, densities, and spatial arrangement of
15 retained structures; aggregated retention is the retention of structures or biological
16 legacies as intact forest patches within the harvest unit; dispersed retention is the
17 retention of structures or biological legacies in a dispersed or uniform pattern. Retained
18 trees may be intended to become part of future stands managed by the Selection
19 Regeneration Method. Retained trees are often designated as decadent tree or Snag
20 recruitment hence not ever intended for harvest. Regeneration after harvest outside of
21 aggregated retention patches may be obtained by direct seeding, planting, sprouting, or
22 by natural seedfall.

23 (1) In the Plan, the RPF shall describe in sufficient detail to provide for review
24 and evaluation: the trees and elements retained, the objectives intended to be

1 achieved by retention, the distribution and quantity of retained trees, the intended
2 time period of retention, and any potential future conditions or events the RPF
3 believes would allow harvest of retained trees. The RPF may explain and justify,
4 and the Director may approve a Plan which indicates up to 50% of retained trees
5 are intended for harvest during future Intermediate Treatments of the
6 regenerated portion of the Harvest Area where such harvest(s) are consistent
7 with stated Variable Retention objectives.

8 (2) The retention standards for Dispersed Retention shall be measured in
9 average Basal Area Per Acre. Where retention is aggregated in groups (greater
10 than or equal to one-tenth acre), percentage of harvest unit area shall be the
11 standard. Sum of all areas within groups divided by harvest unit acres will be
12 used to determine percentage of aggregated retention in the harvest unit. Area
13 and trees located within any standard width WLPZ will be excluded from
14 calculating retention.

15 (3) The following retention standards shall be met:

16 (A) Minimum dispersed Variable Retention standard is 20% of the
17 Resource Conservation Standards basal area levels stated in 14 CCR §
18 912.7(b)(2), 10% of Harvest Area in aggregated retention or combinations
19 thereof. Variable Retention harvests at the minimum retention level shall
20 be limited to 30 acres.

21 (B) Table 1 shall be used for Determining the Maximum Size Harvest Area
22 for Variable Retention. For areas with a combination of dispersed and
23 aggregated retention types for determination of permissible unit size, the
24 percentage of basal area in dispersed retention portions of the

combination area may be reduced proportionately to the area in aggregated retention indicated in Table 1.

Table 1

<i>Dispersed Retention</i>	<i>Aggregated Retention</i>
>20% of 912.7(b)(2)	>10% Area
>30% of 912.7(b)(2)	>15% Area
>35% of 912.7(b)(2)	>20% Area
>45% of 912.7(b)(2)	>25% Area
>55% of 912.7(b)(2)	>30% Area
>75% of 912.7(b)(2)	>40% Area

(C) Aggregated retention areas that conform to the definition of Late Succession Forest Stands under 14 CCR § 895.1, with the exception of the minimum 20 acre threshold size, may be counted as contributing 1.5 times the acres they actually occupy toward providing retention.

(D) Retention trees classified as Dunning's Class 3, 4, 5, or 7 which exceed the size standards of 14 CCR § 912.7 may be counted as contributing 1.5 times their actual basal area toward providing retention.

(E) Retention standards shall be met on each 20-acre maximum area(s) designated and mapped by the RPF in the Plan, within each harvest unit. Retention standards may be met by either dispersed, aggregated or a combination of the two types of retention.

(F) Unless explained and justified by the RPF in the Plan, and approved by the Director, no point within the Harvest Area ~~where retention~~

1 ~~standards are met by dispersed retention~~ shall be more than 300 feet from
2 a retention tree or aggregate retention area.

3 (G) With the exception of 14 CCR § 913.4(d)(3)(J) below, the average
4 height of dispersed retention trees shall be at least (the average height of
5 Dominants and Codominants of like Species in the pre-harvest stand.

6 (H) For areas where the Plan relies on natural seedfall to obtain
7 regeneration, dispersed retention trees shall meet the standards of 14
8 CCR § 913.1(c)(1). Where retention is aggregated, retained aggregates
9 shall meet the standards of Commercial Thinning required under 14 CCR
10 § 913.3(a) including (a)(1)(A) or (a)(1)(B).

11 (I) Where specific WHR habitat elements are insufficient to provide
12 Functional Wildlife Habitat, the RPF may explain and justify and the
13 Director may approve alternatives to the standards of subsections 14 CCR
14 § 913.4(d)(3)(G) and (H).

15 (J) Decadent and Deformed Trees of Value to Wildlife, and Snags which
16 meet the standards of 14 CCR § 912.7(b)(3)(A,B or C) and 14 CCR §
17 912.7(c) may be counted to meet up to 15 square feet of Basal Area Per
18 Acre of retention in excess of the minimum variable retention standards
19 (ref. 14 CCR § 913.4(d)(3)(A)).

20 (K) Trees shall be retained for at least 50 years unless a shorter period of
21 time is described in the Plan, explained and justified by the RPF, and
22 approved by the Director.

1 (4) Retention standards shall be met immediately after harvest and if retention
2 trees are to be used to meet Stocking, at the time the Stocking report is
3 approved.

4 (5) The Stocking standards of 14 CCR § 912.7(b)(1) within five years following
5 completion of operations.

6 (6) Retention trees shall be protected to the extent Feasible during Timber
7 Operations consistent with 14 CCR §§ 914.1; 914.2(e); 914.3; 915.2; 915.3 and
8 917.7.

9 (7) The Plan shall indicate the estimated average pre-harvest and post-harvest
10 basal area by species and Diameter class. Diameter class designations shall be
11 grouped in no greater than 6" classes.

12 (8) Where retention is aggregated in groups, the RPF shall provide in the Plan a
13 general description of group locations and/or a map showing the approximate
14 location of the groups. This information shall be provided for each logging unit.

15 (9) All trees to be harvested or all retention trees shall be marked by, or under
16 the supervision of, an RPF prior to felling operations. Where timber harvesting
17 does not occur within retained aggregates, the boundaries of retained
18 aggregates may be designated in lieu of Marking individual trees within retained
19 aggregates. A sample area must be marked prior to a pre-harvest inspection for
20 evaluation. The sample area shall include at least 10% of the Harvest Area for
21 each stand type represented in the range of conditions present in the area.

22 Where necessary to evaluate the proposed retention, the Director may require
23 additional Marking before Plan approval.

1 (10) To facilitate restocking, a regeneration Plan must be included in the Plan.

2 The regeneration Plan shall include Site Preparation, method of regeneration,
3 and other information appropriate to evaluate the Plan. Site Preparation activities
4 shall be designed to protect retention elements and maintain ground cover to the
5 extent practicable while at the same time result in seedling establishment on the
6 site and encourage long-term site occupancy of the regenerated trees.

7 (11) Another Variable Retention harvest may not be applied to the Variable
8 Retention Harvest Area for at least 50 years for Class I, 60 years for Class II or
9 III, or 80 years for Class IV and V site class lands after acceptance by the
10 Director of the completion report except as specified in: (i) a THP that has been
11 approved pursuant to 14 CCR § 913.11(a), (ii) an SYP, (iii) a PTEIR or, (iv) an
12 NTMP).

13 (12) Within ownership boundaries, no logical logging unit contiguous to a
14 previously harvested Variable Retention Harvest Area may be harvested by a
15 Variable Retention method unless the previously harvested Variable Retention
16 unit has an approved report of Stocking and the dominant and codominant trees,
17 not counting retention trees, average at least five years of age or average at least
18 five feet tall and three years of age from the time of establishment on the site
19 either by the planting or by natural regeneration. If these standards are to be met
20 with trees that were present at the time of the harvest, there shall be an interval
21 of not less than five years following the completion of operations before adjacent
22 Variable Retention management may occur.

23 (13) A Regeneration Method Used in Evenaged Management, other than
24 Shelterwood Preparatory Step, may not be applied to the Variable Retention

1 Harvest Area for at least 50 years for Class I, 60 years for Class II or III, or 80
2 years for Class IV and V site class lands after acceptance by the Director of the
3 completion report.

4 (14) Within an ownership, at least 10 years must pass after a Variable Retention
5 harvest that exceeds the size standards of 14 CCR § 913.1(a)(2) before a
6 Regeneration Method Used in Evenaged Management, other than Shelterwood
7 Preparatory Step, may occur in an adjacent logical Harvest Area.

8 (15) Within an ownership, the separation requirements and adjacency limitations
9 of 14 CCR § 913.1(a)(3, 6 and 7) shall apply equally to Variable Retention
10 Harvest Areas and evenaged regeneration units.

11 (16) Alternative Prescriptions proposed under 14 CCR § 913.6 may not reference
12 Variable Retention as the most nearly Feasible method (ref. 14 CCR §
13 913.6(b)(3) and (4)). Alternative Prescriptions which approach but do not fully
14 meet the minimum standards of Variable Retention shall be considered
15 Alternatives to a Regeneration Method Used in Evenaged Management.

16
17 Note: Authority cited: Sections 4551 and 4553, Public Resources Code. Reference:
18 Sections 4512, 4551.5, 4561, 4561.2, 4582 and 4582.5, Public Resources Code.

19
20 **§ 933.3. Intermediate Treatments.**

21 (a) Commercial Thinning. Commercial thinning is the removal of trees in a young-growth
22 stand to maintain or increase average stand Diameter of the residual crop trees,
23 promote timber growth, and/or improve forest health. The residual stand shall consist

1 primarily of healthy and vigorous dominant and codominant trees from the preharvest
2 stand.

3 (1) Post harvest stand Stocking levels shall be stated in the THP. The level of
4 residual Stocking shall be consistent with maximum sustained production of high
5 quality timber products. Generally, stands will develop stand structures with
6 considerably higher levels of basal area than provided in these minimum
7 standards as stand age increases. In no case shall Stocking be reduced below
8 the following standards:

9 (A) Where the preharvest dominant and codominant crown Canopy is
10 occupied primarily by trees greater than fourteen (14) inches d.b.h.:

11 1. On Site I mixed conifer lands at least one hundred twenty-five
12 (125) sq.ft. per acre of basal area shall be left, and on Site I lands
13 where greater than fifty (50) percent of the basal area is pine, at
14 least ~~one hundred (100)~~ seventy-five (75) sq.ft. per acre of basal
15 area shall be left.

16 2. On Site II mixed conifer lands at least one hundred (100) sq.ft.
17 per acre of basal area shall be left, and on Site II lands where
18 greater than fifty (50) percent of the basal area is pine, at least
19 seventy-five (75) sq.ft. per acre of basal area shall be left.

20 3. On Site III mixed conifer lands at least seventy-five (75) sq.ft. per
21 acre of basal area shall be left, and on Site III lands where greater
22 than fifty (50) percent of the basal area is pine, at least seventy-five
23 (75) sq. ft. per acre of basal area shall be left.

1 4. On Site IV and V mixed conifer lands, at least fifty (50) sq.ft. per
2 acre of basal area shall be left, and on Site IV and V lands where
3 greater than fifty (50) percent of the basal area is pine at least fifty
4 (50) sq.ft. per acre of basal area shall be left.

5 (B) Where the preharvest dominant and codominant crown Canopy is
6 occupied primarily by trees less than fourteen (14) inches d.b.h., a
7 minimum of sixty-five (65) trees per acre over four (4) inches d.b.h. shall
8 be retained.

9 (2) Exceptions to these Stocking Standards may be proposed by the RPF when
10 explained and justified in the Plan, but in no case will the standards be below
11 those specified in 14 CCR § 932.7(b)(2).

12 (3) For stands harvested in compliance with 14 CCR § 933.3(a)(1)(A), the trees
13 to be harvested or the trees to be retained shall be marked by or under the
14 supervision of an RPF prior to felling operations. For all thinning proposals, a
15 sample area must be marked prior to a preharvest inspection for evaluation. The
16 sample area shall include at least ten (10) percent of the thinning area up to a
17 maximum of twenty (20) acres per stand type which is representative of the
18 range of conditions present in the area. The Director may waive the Marking
19 requirements for the remainder of the THP area when explained and justified in
20 the THP.

21 (4) Within six months following completion of Timber Operations as described in
22 the Plan a report of Stocking shall be filed as stated in PRC § 4587.

23 (b) Sanitation-Salvage. Sanitation is the removal of insect-attacked or Diseased Trees
24 in order to maintain or improve the health of the stand. Salvage is the removal of only

1 those trees which are dead, dying or deteriorating, because of damage from fire, wind,
2 insects, disease, flood or other injurious agents. Salvage provides for the economic
3 recovery of trees prior to a total loss of their wood product value. Sanitation and salvage
4 may be combined into a single operation. The following requirements apply to the use of
5 the sanitation-salvage treatment:

6 (1) The RPF shall estimate in the THP expected level of Stocking to be retained
7 upon completion of Timber Operations.

8 (2) Immediately upon completion of Timber Operations, the area shall meet the
9 Stocking Standards of 14 CCR § 932.7(b) unless explained and justified in the
10 Plan. If Stocking is to be met immediately following completion of Timber
11 Operations, a report of Stocking shall be filed within six (6) months of completion.
12 If this standard cannot be met, the area must be planted during the first planting
13 season following completion of operations and the minimum Stocking Standards
14 of 14 CCR § 932.7(b)(1) must be met within five (5) years following completion of
15 Timber Operations.

16 (3) Trees to be harvested or trees to be retained shall be Marked by or under the
17 supervision of an RPF prior to felling operations. When openings greater than
18 one-quarter (0.25) acres will be created, the boundaries of the Small Group(s)
19 may be designated in lieu of Marking individual trees within the Small Group
20 areas. A sample area must be Marked prior to a preharvest inspection for
21 evaluation. The sample area shall include at least ten (10) percent of the area, up
22 to a maximum of twenty (20) acres per stand type, whichever is less, which is
23 representative of the range of conditions present in the area. The Director may

1 waive the Marking requirement for the remainder of the THP area when
2 explained and justified in the THP.

3
4 Note: Authority cited: Sections 4551 and 4561, Public Resources Code. Reference:
5 Sections 4582(d), 4582(h) and 4587, Public Resources Code.

6
7 **§ 933.4. Special Prescriptions.**

8 The following special Harvesting Methods are appropriate under certain conditions:

9 *****

10 (d) Variable Retention. Variable retention is an approach to harvesting based on the
11 retention of structural elements or biological legacies (trees, Snags, logs, etc.) from the
12 pre-harvest stand for integration into the post-harvest stand to achieve various
13 ecological, social and geomorphic objectives. The major variables in the variable
14 retention harvest system are retention types, densities, and spatial arrangement of
15 retained structures; aggregated retention is the retention of structures or biological
16 legacies as intact forest patches within the harvest unit; dispersed retention is the
17 retention of structures or biological legacies in a dispersed or uniform pattern. Retained
18 trees may be intended to become part of future stands managed by the Selection
19 Regeneration Method. Retained trees are often designated as decadent tree or Snag
20 recruitment hence not ever intended for harvest. Regeneration after harvest outside of
21 aggregated retention patches may be obtained by direct seeding, planting, sprouting, or
22 by natural seedfall.

23 (1) In the Plan, the RPF shall describe in sufficient detail to provide for review
24 and evaluation: the trees and elements retained, the objectives intended to be

1 achieved by retention, the distribution and quantity of retained trees, the intended
2 time period of retention, and any potential future conditions or events the RPF
3 believes would allow harvest of retained trees. The RPF may explain and justify,
4 and the Director may approve a Plan which indicates up to 50% of retained trees
5 are intended for harvest during future Intermediate Treatments of the
6 regenerated portion of the Harvest Area where such harvest(s) are consistent
7 with stated Variable Retention objectives.

8 (2) The retention standards for Dispersed Retention shall be measured in
9 average Basal Area Per Acre. Where retention is aggregated in groups (greater
10 than or equal to one-tenth acre), percentage of harvest unit area shall be the
11 standard. Sum of all areas within groups divided by harvest unit acres will be
12 used to determine percentage of aggregated retention in the harvest unit. Area
13 and trees located within any standard width WLPZ will be excluded from
14 calculating retention.

15 (3) The following retention standards shall be met:

16 (A) Minimum dispersed Variable Retention standard is 20% of the
17 Resource Conservation Standards basal area levels stated in 14 CCR §
18 932.7(b)(2), 10% of Harvest Area in aggregated retention or combinations
19 thereof. Variable Retention harvests at the minimum retention level shall
20 be limited to 30 acres.

21 (B) Table 1 shall be used for Determining the Maximum Size Harvest Area
22 for Variable Retention. For areas with a combination of dispersed and
23 aggregated retention types for determination of permissible unit size, the
24 percentage of basal area in dispersed retention portions of the

combination area may be reduced proportionately to the area in
aggregated retention indicated in Table 1.

Table 1

<i>Dispersed Retention</i>	<i>Aggregated Retention</i>
>20% of 932.7(b)(2)	>10% Area
>30% of 932.7(b)(2)	>15% Area
>35% of 932.7(b)(2)	>20% Area
>45% of 932.7(b)(2)	>25% Area
>55% of 932.7(b)(2)	>30% Area
>75% of 932.7(b)(2)	>40% Area

(C) Aggregated retention areas that conform to the definition of Late Succession Forest Stands under 14 CCR § 895.1, with the exception of the minimum 20 acre threshold size, may be counted as contributing 1.5 times the acres they actually occupy toward providing retention.

(D) Retention trees classified as Dunning's Class 3, 4, 5, or 7 which exceed the size standards of 14 CCR § 932.7 may be counted as contributing 1.5 times their actual basal area toward providing retention.

(E) Retention standards shall be met on each 20-acre maximum area(s) designated and mapped by the RPF in the Plan, within each harvest unit. Retention standards may be met by either dispersed, aggregated or a combination of the two types of retention.

(F) Unless explained and justified by the RPF in the Plan, and approved by the Director, no point within the Harvest Area ~~where retention~~

1 ~~standards are met by dispersed retention~~ shall be more than 300 feet from
2 a retention tree or aggregate retention area.

3 (G) With the exception of 14 CCR § 933.4(d)(3)(J) below, the average
4 height of dispersed retention trees shall be at least (the average height of
5 Dominants and Codominants of like Species in the pre-harvest stand.

6 (H) For areas where the Plan relies on natural seedfall to obtain
7 regeneration, dispersed retention trees shall meet the standards of 14
8 CCR § 933.1(c)(1). Where retention is aggregated, retained aggregates
9 shall meet the standards of Commercial Thinning required under 14 CCR
10 § 933.3(a) including (a)(1)(A) or (a)(1)(B).

11 (I) Where specific WHR habitat elements are insufficient to provide
12 Functional Wildlife Habitat, the RPF may explain and justify and the
13 Director may approve alternatives to the standards of subsections 14 CCR
14 § 933.4(d)(3)(G) and (H).

15 (J) Decadent and Deformed Trees of Value to Wildlife, and Snags which
16 meet the standards of 14 CCR § 932.7(b)(3)(A,B or C) and 14 CCR §
17 932.7(c) may be counted to meet up to 15 square feet of Basal Area Per
18 Acre of retention in excess of the minimum variable retention standards
19 (ref. 14 CCR § 933.4(d)(3)(A)).

20 (K) Trees shall be retained for at least 50 years unless a shorter period of
21 time is described in the Plan, explained and justified by the RPF, and
22 approved by the Director.

1 (4) Retention standards shall be met immediately after harvest and if retention
2 trees are to be used to meet Stocking, at the time the Stocking report is
3 approved.

4 (5) The Stocking standards of 14 CCR § 932.7(b)(1) within five years following
5 completion of operations.

6 (6) Retention trees shall be protected to the extent Feasible during Timber
7 Operations consistent with 14 CCR §§ 934.1; 934.2(e); 934.3; 935.2; 935.3 and
8 937.7.

9 (7) The Plan shall indicate the estimated average pre-harvest and post-harvest
10 basal area by species and Diameter class. Diameter class designations shall be
11 grouped in no greater than 6" classes.

12 (8) Where retention is aggregated in groups, the RPF shall provide in the Plan a
13 general description of group locations and/or a map showing the approximate
14 location of the groups. This information shall be provided for each logging unit.

15 (9) All trees to be harvested or all retention trees shall be marked by, or under
16 the supervision of, an RPF prior to felling operations. Where timber harvesting
17 does not occur within retained aggregates, the boundaries of retained
18 aggregates may be designated in lieu of Marking individual trees within retained
19 aggregates. A sample area must be marked prior to a pre-harvest inspection for
20 evaluation. The sample area shall include at least 10% of the Harvest Area for
21 each stand type represented in the range of conditions present in the area.

22 Where necessary to evaluate the proposed retention, the Director may require
23 additional Marking before Plan approval.

1 (10) To facilitate restocking, a regeneration Plan must be included in the Plan.

2 The regeneration Plan shall include Site Preparation, method of regeneration,
3 and other information appropriate to evaluate the Plan. Site Preparation activities
4 shall be designed to protect retention elements and maintain ground cover to the
5 extent practicable while at the same time result in seedling establishment on the
6 site and encourage long-term site occupancy of the regenerated trees.

7 (11) Another Variable Retention harvest may not be applied to the Variable
8 Retention Harvest Area for at least 50 years for Class I, 60 years for Class II or
9 III, or 80 years for Class IV and V site class lands after acceptance by the
10 Director of the completion report except as specified in: (i) a THP that has been
11 approved pursuant to 14 CCR § 933.11(a), (ii) an SYP, (iii) a PTEIR or, (iv) an
12 NTMP).

13 (12) Within ownership boundaries, no logical logging unit contiguous to a
14 previously harvested Variable Retention Harvest Area may be harvested by a
15 Variable Retention method unless the previously harvested Variable Retention
16 unit has an approved report of Stocking and the dominant and codominant trees,
17 not counting retention trees, average at least five years of age or average at least
18 five feet tall and three years of age from the time of establishment on the site
19 either by the planting or by natural regeneration. If these standards are to be met
20 with trees that were present at the time of the harvest, there shall be an interval
21 of not less than five years following the completion of operations before adjacent
22 Variable Retention management may occur.

23 (13) A Regeneration Method Used in Evenaged Management, other than
24 Shelterwood Preparatory Step, may not be applied to the Variable Retention

1 Harvest Area for at least 50 years for Class I, 60 years for Class II or III, or 80
2 years for Class IV and V site class lands after acceptance by the Director of the
3 completion report.

4 (14) Within an ownership, at least 10 years must pass after a Variable Retention
5 harvest that exceeds the size standards of 14 CCR § 933.1(a)(2) before a
6 Regeneration Method Used in Evenaged Management, other than Shelterwood
7 Preparatory Step, may occur in an adjacent logical Harvest Area.

8 (15) Within an ownership, the separation requirements and adjacency limitations
9 of 14 CCR § 933.1(a)(3, 6 and 7) shall apply equally to Variable Retention
10 Harvest Areas and evenaged regeneration units.

11 (16) Alternative Prescriptions proposed under 14 CCR § 933.6 may not reference
12 Variable Retention as the most nearly Feasible method (ref. 14 CCR §
13 933.6(b)(3) and (4)). Alternative Prescriptions which approach but do not fully
14 meet the minimum standards of Variable Retention shall be considered
15 Alternatives to a Regeneration Method Used in Evenaged Management.

16
17 Note: Authority cited: Sections 4551 and 4553, Public Resources Code. Reference:
18 Sections 4512, 4551.5, 4561, 4561.2, 4582 and 4582.5, Public Resources Code.

19
20 **953.3. Intermediate Treatments.**

21 (a) Commercial Thinning. Commercial thinning is the removal of trees in a young-growth
22 stand to maintain or increase average stand Diameter of the residual crop trees,
23 promote timber growth, and/or improve forest health. The residual stand shall consist

1 primarily of healthy and vigorous dominant and codominant trees from the preharvest
2 stand.

3 (1) Post harvest stand Stocking levels shall be stated in the THP. The level of
4 residual Stocking shall be consistent with maximum sustained production of high
5 quality timber products. Generally, stands will develop stand structures with
6 considerably higher levels of basal area than provided in these minimum
7 standards as stand age increases. In no case shall Stocking be reduced below
8 the following standards:

9 (A) Where the preharvest dominant and codominant crown Canopy is
10 occupied primarily by trees greater than fourteen (14) inches d.b.h.:

11 1. On Site I mixed conifer lands at least one hundred twenty-five
12 (125) sq.ft. per acre of basal area shall be left, and on Site I lands
13 where greater than fifty (50) percent of the basal area is pine, at
14 least ~~one hundred (100)~~ seventy-five (75) sq.ft. per acre of basal
15 area shall be left.

16 2. On Site II mixed conifer lands at least one hundred (100) sq.ft.
17 per acre of basal area shall be left, and on Site II lands where
18 greater than fifty (50) percent of the basal area is pine, at least
19 seventy-five (75) sq.ft. per acre of basal area shall be left.

20 3. On Site III mixed conifer lands at least seventy-five (75) sq.ft. per
21 acre of basal area shall be left, and on Site III lands where greater
22 than fifty (50) percent of the basal area is pine, at least seventy-five
23 (75) sq. ft. per acre of basal area shall be left.

1 4. On Site IV and V mixed conifer lands, at least fifty (50) sq.ft. per
2 acre of basal area shall be left, and on Site IV and V lands where
3 greater than fifty (50) percent of the basal area is pine at least fifty
4 (50) sq.ft. per acre of basal area shall be left.

5 (B) Where the preharvest dominant and codominant crown Canopy is
6 occupied primarily by trees less than fourteen (14) inches d.b.h., a
7 minimum of sixty-five (65) trees per acre over four (4) inches d.b.h. shall
8 be retained.

9 (2) Exceptions to these Stocking Standards may be proposed by the RPF when
10 explained and justified in the Plan, but in no case will the standards be below
11 those specified in 14 CCR § 952.7(b)(2).

12 (3) For stands harvested in compliance with 14 CCR § 953.3(a)(1)(A), the trees
13 to be harvested or the trees to be retained shall be marked by or under the
14 supervision of an RPF prior to felling operations. For all thinning proposals, a
15 sample area must be marked prior to a preharvest inspection for evaluation. The
16 sample area shall include at least ten (10) percent of the thinning area up to a
17 maximum of twenty (20) acres per stand type which is representative of the
18 range of conditions present in the area. The Director may waive the Marking
19 requirements for the remainder of the THP area when explained and justified in
20 the THP.

21 (4) Within six months following completion of Timber Operations as described in
22 the Plan a report of Stocking shall be filed as stated in PRC § 4587.

23 (b) Sanitation-Salvage. Sanitation is the removal of insect-attacked or Diseased Trees
24 in order to maintain or improve the health of the stand. Salvage is the removal of only

1 those trees which are dead, dying or deteriorating, because of damage from fire, wind,
2 insects, disease, flood or other injurious agents. Salvage provides for the economic
3 recovery of trees prior to a total loss of their wood product value. Sanitation and salvage
4 may be combined into a single operation. The following requirements apply to the use of
5 the sanitation-salvage treatment:

6 (1) The RPF shall estimate in the THP expected level of Stocking to be retained
7 upon completion of Timber Operations.

8 (2) Immediately upon completion of Timber Operations, the area shall meet the
9 Stocking Standards of 14 CCR § 952.7(b) unless explained and justified in the
10 Plan. If Stocking is to be met immediately following completion of Timber
11 Operations, a report of Stocking shall be filed within six (6) months of completion.
12 If this standard cannot be met, the area must be planted during the first planting
13 season following completion of operations and the minimum Stocking Standards
14 of 14 CCR § 952.7(b)(1) must be met within five (5) years following completion of
15 Timber Operations.

16 (3) Trees to be harvested or trees to be retained shall be Marked by or under the
17 supervision of an RPF prior to felling operations. When openings greater than
18 one-quarter (0.25) acres will be created, the boundaries of the Small Group(s)
19 may be designated in lieu of Marking individual trees within the Small Group
20 areas. A sample area must be Marked prior to a preharvest inspection for
21 evaluation. The sample area shall include at least ten (10) percent of the area, up
22 to a maximum of twenty (20) acres per stand type, whichever is less, which is
23 representative of the range of conditions present in the area. The Director may

1 waive the Marking requirement for the remainder of the THP area when
2 explained and justified in the THP.

3
4 Note: Authority cited: Sections 4551 and 4561, Public Resources Code. Reference:
5 Sections 4582(d), 4582(h) and 4587, Public Resources Code.

6
7 **§ 953.4. Special Prescriptions.**

8 The following special Harvesting Methods are appropriate under certain conditions:

9 *****

10 (d) Variable Retention. Variable retention is an approach to harvesting based on the
11 retention of structural elements or biological legacies (trees, Snags, logs, etc.) from the
12 pre-harvest stand for integration into the post-harvest stand to achieve various
13 ecological, social and geomorphic objectives. The major variables in the variable
14 retention harvest system are retention types, densities, and spatial arrangement of
15 retained structures; aggregated retention is the retention of structures or biological
16 legacies as intact forest patches within the harvest unit; dispersed retention is the
17 retention of structures or biological legacies in a dispersed or uniform pattern. Retained
18 trees may be intended to become part of future stands managed by the Selection
19 Regeneration Method. Retained trees are often designated as decadent tree or Snag
20 recruitment hence not ever intended for harvest. Regeneration after harvest outside of
21 aggregated retention patches may be obtained by direct seeding, planting, sprouting, or
22 by natural seedfall.

23 (1) In the Plan, the RPF shall describe in sufficient detail to provide for review
24 and evaluation: the trees and elements retained, the objectives intended to be

1 achieved by retention, the distribution and quantity of retained trees, the intended
2 time period of retention, and any potential future conditions or events the RPF
3 believes would allow harvest of retained trees. The RPF may explain and justify,
4 and the Director may approve a Plan which indicates up to 50% of retained trees
5 are intended for harvest during future Intermediate Treatments of the
6 regenerated portion of the Harvest Area where such harvest(s) are consistent
7 with stated Variable Retention objectives.

8 (2) The retention standards for Dispersed Retention shall be measured in
9 average Basal Area Per Acre. Where retention is aggregated in groups (greater
10 than or equal to one-tenth acre), percentage of harvest unit area shall be the
11 standard. Sum of all areas within groups divided by harvest unit acres will be
12 used to determine percentage of aggregated retention in the harvest unit. Area
13 and trees located within any standard width WLPZ will be excluded from
14 calculating retention.

15 (3) The following retention standards shall be met:

16 (A) Minimum dispersed Variable Retention standard is 20% of the
17 Resource Conservation Standards basal area levels stated in 14 CCR §
18 952.7(b)(2), 10% of Harvest Area in aggregated retention or combinations
19 thereof. Variable Retention harvests at the minimum retention level shall
20 be limited to 30 acres.

21 (B) Table 1 shall be used for Determining the Maximum Size Harvest Area
22 for Variable Retention. For areas with a combination of dispersed and
23 aggregated retention types for determination of permissible unit size, the
24 percentage of basal area in dispersed retention portions of the

combination area may be reduced proportionately to the area in aggregated retention indicated in Table 1.

Table 1

<i>Dispersed Retention</i>	<i>Aggregated Retention</i>
>20% of 952.7(b)(2)	>10% Area
>30% of 952.7(b)(2)	>15% Area
>35% of 952.7(b)(2)	>20% Area
>45% of 952.7(b)(2)	>25% Area
>55% of 952.7(b)(2)	>30% Area
>75% of 952.7(b)(2)	>40% Area

(C) Aggregated retention areas that conform to the definition of Late Succession Forest Stands under 14 CCR § 895.1, with the exception of the minimum 20 acre threshold size, may be counted as contributing 1.5 times the acres they actually occupy toward providing retention.

(D) Retention trees classified as Dunning's Class 3, 4, 5, or 7 which exceed the size standards of 14 CCR § 952.7 may be counted as contributing 1.5 times their actual basal area toward providing retention.

(E) Retention standards shall be met on each 20-acre maximum area(s) designated and mapped by the RPF in the Plan, within each harvest unit. Retention standards may be met by either dispersed, aggregated or a combination of the two types of retention.

(F) Unless explained and justified by the RPF in the Plan, and approved by the Director, no point within the Harvest Area ~~where retention~~

1 ~~standards are met by dispersed retention~~ shall be more than 300 feet from
2 a retention tree or aggregate retention area.

3 (G) With the exception of 14 CCR § 953.4(d)(3)(J) below, the average
4 height of dispersed retention trees shall be at least (the average height of
5 Dominants and Codominants of like Species in the pre-harvest stand.

6 (H) For areas where the Plan relies on natural seedfall to obtain
7 regeneration, dispersed retention trees shall meet the standards of 14
8 CCR § 953.1(c)(1). Where retention is aggregated, retained aggregates
9 shall meet the standards of Commercial Thinning required under 14 CCR
10 § 953.3(a) including (a)(1)(A) or (a)(1)(B).

11 (I) Where specific WHR habitat elements are insufficient to provide
12 Functional Wildlife Habitat, the RPF may explain and justify and the
13 Director may approve alternatives to the standards of subsections 14 CCR
14 § 953.4(d)(3)(G) and (H).

15 (J) Decadent and Deformed Trees of Value to Wildlife, and Snags which
16 meet the standards of 14 CCR § 952.7(b)(3)(A,B or C) and 14 CCR §
17 952.7(c) may be counted to meet up to 15 square feet of Basal Area Per
18 Acre of retention in excess of the minimum variable retention standards
19 (ref. 14 CCR § 953.4(d)(3)(A)).

20 (K) Trees shall be retained for at least 50 years unless a shorter period of
21 time is described in the Plan, explained and justified by the RPF, and
22 approved by the Director.

1 (4) Retention standards shall be met immediately after harvest and if retention
2 trees are to be used to meet Stocking, at the time the Stocking report is
3 approved.

4 (5) The Stocking standards of 14 CCR § 952.7(b)(1) within five years following
5 completion of operations.

6 (6) Retention trees shall be protected to the extent Feasible during Timber
7 Operations consistent with 14 CCR §§ 954.1; 954.2(e); 954.3; 955.2; 955.3 and
8 957.7.

9 (7) The Plan shall indicate the estimated average pre-harvest and post-harvest
10 basal area by species and Diameter class. Diameter class designations shall be
11 grouped in no greater than 6" classes.

12 (8) Where retention is aggregated in groups, the RPF shall provide in the Plan a
13 general description of group locations and/or a map showing the approximate
14 location of the groups. This information shall be provided for each logging unit.

15 (9) All trees to be harvested or all retention trees shall be marked by, or under
16 the supervision of, an RPF prior to felling operations. Where timber harvesting
17 does not occur within retained aggregates, the boundaries of retained
18 aggregates may be designated in lieu of Marking individual trees within retained
19 aggregates. A sample area must be marked prior to a pre-harvest inspection for
20 evaluation. The sample area shall include at least 10% of the Harvest Area for
21 each stand type represented in the range of conditions present in the area.

22 Where necessary to evaluate the proposed retention, the Director may require
23 additional Marking before Plan approval.

1 (10) To facilitate restocking, a regeneration Plan must be included in the Plan.

2 The regeneration Plan shall include Site Preparation, method of regeneration,
3 and other information appropriate to evaluate the Plan. Site Preparation activities
4 shall be designed to protect retention elements and maintain ground cover to the
5 extent practicable while at the same time result in seedling establishment on the
6 site and encourage long-term site occupancy of the regenerated trees.

7 (11) Another Variable Retention harvest may not be applied to the Variable
8 Retention Harvest Area for at least 50 years for Class I, 60 years for Class II or
9 III, or 80 years for Class IV and V site class lands after acceptance by the
10 Director of the completion report except as specified in: (i) a THP that has been
11 approved pursuant to 14 CCR § 953.11(a), (ii) an SYP, (iii) a PTEIR or, (iv) an
12 NTMP).

13 (12) Within ownership boundaries, no logical logging unit contiguous to a
14 previously harvested Variable Retention Harvest Area may be harvested by a
15 Variable Retention method unless the previously harvested Variable Retention
16 unit has an approved report of Stocking and the dominant and codominant trees,
17 not counting retention trees, average at least five years of age or average at least
18 five feet tall and three years of age from the time of establishment on the site
19 either by the planting or by natural regeneration. If these standards are to be met
20 with trees that were present at the time of the harvest, there shall be an interval
21 of not less than five years following the completion of operations before adjacent
22 Variable Retention management may occur.

23 (13) A Regeneration Method Used in Evenaged Management, other than
24 Shelterwood Preparatory Step, may not be applied to the Variable Retention

1 Harvest Area for at least 50 years for Class I, 60 years for Class II or III, or 80
2 years for Class IV and V site class lands after acceptance by the Director of the
3 completion report.

4 (14) Within an ownership, at least 10 years must pass after a Variable Retention
5 harvest that exceeds the size standards of 14 CCR § 953.1(a)(2) before a
6 Regeneration Method Used in Evenaged Management, other than Shelterwood
7 Preparatory Step, may occur in an adjacent logical Harvest Area.

8 (15) Within an ownership, the separation requirements and adjacency limitations
9 of 14 CCR § 953.1(a)(3, 6 and 7) shall apply equally to Variable Retention
10 Harvest Areas and evenaged regeneration units.

11 (16) Alternative Prescriptions proposed under 14 CCR § 953.6 may not reference
12 Variable Retention as the most nearly Feasible method (ref. 14 CCR §
13 953.6(b)(3) and (4)). Alternative Prescriptions which approach but do not fully
14 meet the minimum standards of Variable Retention shall be considered
15 Alternatives to a Regeneration Method Used in Evenaged Management.

16
17 Note: Authority cited: Sections 4551 and 4553, Public Resources Code. Reference:
18 Sections 4512, 4551.5, 4561, 4561.2, 4582 and 4582.5, Public Resources Code.