

Letter - S6

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Mr. Bond and Ms. Brickey  
November 19, 2002  
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Response to Comment S6-15

**Attachment 1**

**Department of Fish and Game (DFG) Comments to the Draft Simpson AHCP/CCAA**

Minimization and Mitigation

The selection of specific prescriptions, is a matter of the Permit applicant's discretion (HCP Handbook at 3-19). The Services' role during the development of the conservation program is to "be prepared to advise" and to judge its consistency with the ESA approval criteria once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria have been discussed in AHCP/CCAA Section 1.4.1, EIS Section 1.3 and Master Response 8. The Services believe, based on the analysis provided in the Plan and EIS, that the Plan meets ESA requirements. See also response to Comment G10-51, for example, regarding the selection of different or additional conservation measures.

*Enforceability*

Enforceability of the Plan is addressed in the IA (paragraph 13) and Master Response 14.

*Response to Department comments*

The Services appreciate the effort the Department took in providing the redline/strikeout suggestions for changing AHCP/CCAA Section 6. However, many of these suggested language changes did not include an explanation of the Department's concerns. Because the Services may not speculate as to what substantive concern may be represented by a particular addition or deletion, the Services did not provide a response to all

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This document is an attachment to the DFG letter to Mr. James Bond of the National Marine Fisheries Service and Ms. Amedee Brickey of the U.S. Fish and Wildlife Service. Please refer to the cover letter for other DFG comments. DFG's comments to Section 6.2 of the Draft Aquatic Habitat Conservation Plan Candidate Conservation Agreement with Assurances(AHCP/CCAA, AHCP, or plan) are intended to identify to the National Marine Fisheries Service and U.S Fish and Wildlife Service (Services) and Simpson Resource Company (Simpson) what the DFG believes are deficiencies, and provide additional feasible measures we believe are necessary to fully mitigate and minimize the impact of the plan to the Covered Species and their habitat.

Although we have reviewed the Draft Environmental Impact Statement (EIS), Volumes 1 and 2 of the AHCP/CCAA, and the Draft Implementation Agreement, these comments focus on enforceable language in Volume 1, Section 6.2.

In order to efficiently provide input to the Services and Simpson, we reproduced the text of Section 6 from Volume I of the Plan as an editable document, and used the following method to identify our comments: Black text is the original Volume 1 text of July 2002, **Bold Blue** indicates suggested additions to text, ~~strikeout yellow~~ indicates suggested text deletions, yellow highlights indicate original text particularly relevant to a DFG comment, and plain blue (not bold) indicates a DFG comment. The figures and tables were not reproduced in this comment format; however the corresponding page number is referenced where they can be found in Volume 1.

**Section 6. Conservation Program**

This Section identifies the biological goals and objectives of the Plan, sets forth the conservation program that Simpson will undertake in the Plan Area, and provides a detailed explanation of the rationale for the conservation program.

- Section 6.1 presents the goals and objectives.
- Section 6.2 sets forth the specific conservation measures that Simpson will undertake within the Plan Area during the term of the Permits. These measures are referred to as Simpson's "Operating Conservation Program." It includes measures to minimize and mitigate the impacts of incidental take, maintain and improve habitat conditions for the Covered Species, monitor implementation and effectiveness of the Plan, institute adaptive management, and respond to changed and unforeseen circumstances.

of the Departments redline/strikeout suggestions. Where a specific Department comment (indicated by plain blue) provides justification for a suggested addition or deletion, the Services provided a response.

- Section 6.3 supplements the Operating Conservation Program with further discussion of the intent, rationale and analysis that underlie the specific measures and commitments outlined in Section 6.2. This section is provided to aid in the implementation of Simpson's Operating Conservation Program.

## **6.1 BIOLOGICAL GOALS AND OBJECTIVES**

### **6.1.1 Introduction**

To meet the statutory criteria for approval of an HCP/ITP, Simpson's conservation program must: (i) minimize and mitigate the impacts of authorized incidental take of Covered Species that may result from Covered Activities to the maximum extent practicable and (ii) ensure that any such taking will not appreciably reduce the likelihood of the survival and recovery of such species in the wild. While these statutory criteria themselves are biological in nature, NMFS and USFWS have issued an Addendum to the HCP Handbook (also known as the "Five Points Policy") calling for an HCP to identify specific biological goals and objectives based on the proposed action that necessitates incidental take permit issuance and the conservation needs of the Covered Species (Final Addendum; 65 FR 35251).

Contemporary dictionaries define practicable as meaning "that which can be done or put into practice; feasible". "Feasible", as defined by the California Environmental Quality Act (CEQA) and CESA means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technical factors. "Feasible", as defined in Volume 1 of the plan means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, operational, and technological factors, and considering what is allowable under the law. "Feasible", as defined in the California Forest Practice Rules (FPRs), means "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technical factors. We consider the term practicable to be equivalent to the state use of the word feasible as defined above.

As the Services explained in proposing the Handbook Addendum, the "biological outcome of the operating conservation program for the Covered Species is the best measure of the success of an HCP" (64 FR 11585). Further, the Service stated:

Explicit biological goals and objectives clarify the purpose and direction of an HCP's operating conservation program. They create parameters and benchmarks for developing conservation measures, provide the rationale behind the HCP's terms and conditions, promote an effective monitoring program, and, where appropriate, help determine the focus of an adaptive management strategy. ...Biological goals provide broad, guiding principles for an HCP's operating conservation program and the biological goals are "the rationale behind the minimization and mitigation strategies (Final Addendum; 65 F R 35251).

Biological goals can be either habitat-based or species-based. Habitat-based goals are expressed in terms of the amount and or the quality of habitat. Species-based goals are expressed in terms specific to individuals or populations of that species. This Plan's

Response to Comment S6-16

The historic range of the covered species is largely unknown at the fine scale of individual streams and sub-basins within the Plan Area. In addition, much of the historical information that is available is based on unreliable sources utilizing methods that would not meet current scientific protocols. But the greatest problem with attempting to match current distributions of the covered species with historical populations at such a fine scale is that historical distributions were not static. The best available science supports a dynamic stream concept based on natural disturbance processes which predicts population fluctuations through time of aquatic organisms and the habitat on which they depend. Implementation of the measures included in the Operating Conservation Program (AHCP/CCAA Section 6.2), which are based on the biological goals and objectives (AHCP/CCAA Section 6.1), will result in well distributed populations of the covered species throughout the Plan Area regardless of their historical distributions.

The goal of having “stable populations” rather than “viable populations” over the next 50 years is neither necessary (see Master Response 8, regarding Permit approval criteria) nor appropriate in light of what is known, using the best available science, about the variety of factors affecting the covered species’ population dynamics.

biological goals and objectives are primarily habitat-based but include species-based objectives for the amphibian species. Biological objectives are more specific and include measurable parameters. Biological objectives are the different components needed to achieve the biological goals. Permittees are not required to achieve the HCP’s biological goals and objectives to comply with their permits. Rather than being enforceable terms or conditions, the goals and objectives guide the development of the operating conservation measures.

Whether the HCP is based on prescriptions, results, or both, the permittee’s obligation for meeting the biological goals and objectives is proper implementation of the operating conservation program of the HCP. In other words, to qualify for No Surprises assurances, a permittee is required only to implement the operating conservation program of the HCP; the IA, if used, and the terms and conditions of the permit. Implementation may include provisions for ongoing changes in actions in order to achieve results or due to results from an adaptive management strategy (65 FR 35251).

Accordingly, to minimize and mitigate the impacts of incidental take within the Plan Area as described in this AHCP and to ensure that such take does not jeopardize the Covered Species, Simpson intends to undertake management measures that will, during the term of the Permit protect, and, where **not present needed** allow **recovery or development of the functional habitat conditions** that are required for long-term survival to support well-distributed, viable populations of the Covered Species. For the purposes of this draft AHCP, well-distributed means viable populations occurring throughout the historic (e.g. pre-industrial timber harvesting) range of the species in each of the HPAs. Further, this document should define “viable populations,” as populations which are stable over a timeframe through at least the proposed 50 year life of the AHCP. DFG will assume “functional habitat” to be “fully functional habitat” where mentioned in Section 6 of the document. These measures, set forth in the Operating Conservation Program in Section 6.2, are based on the biological goals and objectives set forth in this section.

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The Biological Goals and Objectives cover not only the listed Covered Species but also the unlisted ITP Species under NMFS jurisdiction and the unlisted ESP Species under USFWS jurisdiction. According to the Handbook Addendum, each ITP Species “must be addressed as if it were listed and named on the permit” (65 FR 35251).

The HCP Handbook Addendum does not apply to CCAAs. Therefore, the Addendum does not directly guide the conservation planning for the ESP Species, and the establishment of biological goals and objectives is not required for ESP Species. Nevertheless, Simpson has established biological goals and objectives for the ESP Species consistent with the purposes of the CCAA policy. The CCM policy is intended to facilitate the conservation of proposed and candidate species, and species likely to become candidates, by giving non-Federal property owners incentives to implement conservation measures for declining species (64 FR 32726). The CCAA portion of this

Plan will provide benefits to the ESP Species through Simpson’s implementation of the voluntary conservation measures contained in the Operating Conservation Program (Section 6.2). These measures are designed to provide conservation benefits of removing threats to the Covered Species and maintaining and improving habitat

Response to Comment S6-17

With regards to the comment concerning “to the maximum extent practicable” (second comment bullet), please see Master Response 8.2.

With regards to the comment on LWD (third comment bullet), see Master Response 18.

With regards to the fourth comment bullet, the Services feel that the statement is adequate as originally noted and would not benefit from further specificity. See Master Responses 8.2 and 11.1 for further discussion.

conditions in the Plan Area so as to help preclude or remove any need to list them as threatened or endangered under the ESA.

**6.1.2 Biological Goals and Objectives**

The Covered Species in this Plan are six stream-dwelling species. The preferred area of freshwater habitat for these species ranges from the lowest portions of watersheds to the uppermost headwater areas, but they all share some common habitat needs. Although the specifics vary, they all have adapted to relatively cool water temperatures, and require streams with complex habitat both in terms of stream morphology and substrate composition. The six species exhibit life history variability, with the result that different portions of their life cycles depend on freshwater habitat. Of the fish species, chinook salmon spends the least time in freshwater where the spawning and estuarine rearing habitats are the most critical freshwater elements. In comparison, coho salmon and steel head generally spend up to two years or more of their life in freshwater habitat so that spawning, and summer and winter rearing habitats are important. Most of the coastal cutthroat trout probably spend their entire lives in freshwater. This fish species is completely dependent on the freshwater habitat, although some individuals of certain populations may exhibit anadromy. The amphibian species spend their entire lives within relatively small areas in the upper reaches of watersheds, although the adults of both species are terrestrial and presumably capable of limited overland movements during certain times of year.

Based on these considerations, Simpson has established the five goals and five objectives to reflect in biological terms the intended result of the proposed conservation program.

**6.1.2.1 Biological Goals**

As a result of the shared habitat requirements of the Covered Species and in addition to the overall purpose of the Plan as stated in Section 1.2, the specific biological goals of this AHCP/CCM are to:

- Maintain cool water temperature regimes that are consistent with the requirements of the individual species,
- Minimize and mitigate human-caused sediment inputs; **to the maximum extent practicable,**
- Provide for the recruitment of **whole-tree, key-piece sized conifer** LWD into streams so as to maintain and allow the development of **fully functional** stream habitat conditions,
- Allow for the maintenance (**where, currently, fully functional conditions exist**) or **optimal** increase (**where, currently, fully functional conditions do not exist**) of populations of the **fish and amphibian** Covered Species in the Plan Area through minimization and mitigation of timber harvest-related impacts on the species, and

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Response to Comment S6-18

See Master Responses 12 and 15.

Response to Comment S6-19

See responses to Comments G3-62, G3-82, G6-38 and R1-128.

S6-18

- Monitor and adapt the Plan as new information becomes available, to provide those habitat conditions needed to meet the general goals that benefit the Covered Species. What are the general goals? How do they differ from the specific biological goals? What are the specific risk criteria, and how is risk to the Covered Species and their habitats specifically assessed when determining whether or not to proceed with adaptive management which is less restrictive than the default prescriptions?

**6.1.2.2 Biological Objectives**

There are five biological objectives for the Plan. Three are habitat-based, one is population-based, and one is monitoring-based.

**6.1.2.2.1 Summer Water Temperature Objective**

For 4th order or smaller Class I and II watercourses with drainage areas less than approximately 10,000 acres, the biological objective for the highest 7DMAVG will be below the upper 95% PI as described by the following regression equation:

$$\text{Water temperature} = 14.35141 + 0.03066461 \times \text{square root watershed area}$$

In addition, even when temperatures are below the values listed above, it is a biological objective of this Plan to have no significant increases (>2°C) in the 7DMAVG water temperature in Class I or II watercourses following timber harvest that are not attributable to annual climatic variation. A graphical representation of the temperature regression analysis is shown in Figure 6-1.

S6-19

Setting action thresholds based on a prediction interval for the regression equation developed from existing temperature data leads to a goal of maintenance of pre-AHCP conditions. However, the biological goal as stated in section 6.1.2.1 is to maintain temperatures consistent with the requirements of individual species. This biological goal is more relevant to the federal permit issuance criteria for take avoidance and the applicable state regulations than maintaining current conditions.

To achieve the biological goal, distinct temperature thresholds should be incorporated into the above-stated temperature objective and into monitoring and adaptive management programs based on that objective. The upper end of the range of suitable summer water temperatures of 15°C has been reported in the literature for coho, steelhead, and chinook rearing. Welsh et al. (2001) found that MWATs of greater than 16.8°C may preclude coho presence in Mattole drainages. Analysis of stream temperature data across the southern range of tailed frogs and southern torrent salamanders indicated that these two amphibian species were not found in habitats with maximum temperatures above 15°C (Welsh and Lind 1996).

In view of this literature, use of the proposed temperature threshold of 17.4°C for the 7 DMAVG as stated in Section 6.2.5.5.1, may impede recovery or reduce the range of the Covered Species. The threshold value of 17.4 °C stated in NMFS (1997) was determined for juvenile coho acclimated at temperatures greater than 23°C. Based on temperatures reported in the plan area, it would be rare for coho to be acclimated to this

Response to Comment S6-20

See Master Response 5 regarding “likelihood to recruit.” Furthermore, requiring a different level of potential recruitment in the Plan is not necessary. The selection of specific prescriptions is a matter of the Permit applicant’s discretion (HCP Handbook at 3-19). The Services’ role in designing the conservation program is to “be prepared to advise” during the development of the Plan and to judge its consistency with the ESA approval criteria once the application is complete (HCP Handbook at 3-6 and 3-7). The ESA does not require that any particular measure be adopted or imposed, but only that its criteria for Permit issuance be met. Issuance criteria are discussed in AHCP/CCAA Section 1.4.1, EIS Section 1.3 and Master Response 8. The Services believe that the Plan, including its measures regarding likelihood to recruit, meets ESA section 10(a) approval criteria. Under these circumstances it would not be appropriate to require a different level of potential recruitment.

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temperature. A separate upper temperature threshold for amphibians should be established which will reduce the risk of sublethal effects. As stated in Section 3.3.2.2.1 (p. 3-13) preferred thermal ranges for both tailed frogs and southern torrent salamanders are likely to be much lower than their thermal stress threshold of 17.2°C. Simpson biologists and others have observed upper limits of 15-15.5°C for tailed frog habitat and 16°C for southern torrent salamander habitat.

There appears to be no strategy for addressing streams that are currently exceeding either the first objective or existing biological standards. Harvest entries should be limited and canopy retention measures increased in Class I, Class II, and Class III stream reaches in the sub-basin above those monitoring stations that are currently exceeding the draft AHCP thresholds.

Restriction of the temperature objective and thresholds to locations with drainage areas less than 10,000 acres is not supported by the data figure (See page 6-144) or the information cited. Locations with greater than 10,000 acre drainages should remain in the analysis and in the monitoring unless their removal can be justified based on site specific characteristics (presence of factors that overwhelm canopy and cool water tributary input). Several stream locations that would be dropped under the proposed adjustment (p. D-7) are coho bearing reaches. It is important to continue monitoring conditions in coho reaches with particular emphasis on locations outside of the ameliorating influence of the coastal fog zone.

Figure 6-1 (See page 6-4 of Volume 1) Representation of the temperature analysis underlying the summer water temperature objectives based on 7DMA VG water temperatures for all monitoring sites on the Original Assessed Ownership (1994-2000).

6.1.2.2.2 LWD Objective

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The biological objective for LWD is to increase the abundance and size class of inchannel and potential conifer LWD in watersheds in the Plan Area. Based on projections of future stand composition in riparian zones through the life of the Plan, the objective is that 99% of riparian zones will be fully stocked with mature conifer stands greater than 60 years in age and over 70% will have fully stocked conifer stands greater than 80 years in age. DFG notes greater than 60 years in age may be “mature” in terms of commercial viability, but conifers in this age class may be many decades away from natural recruitment. In addition, the potential recruitment based on managed potential tree height will be greater than 80 and 70% attainment for Class I and II watercourses respectively. What is “potential recruitment” and “managed potential tree height”? Could the potential recruitment for Class I and II watercourses be greater than 80% and 70%, respectively? Why won’t potential recruitment be at 100% by the end of the life of the AHCP? Is attainment of 100% not practicable?

The objective for stand composition of the riparian zones is fairly specific as described above, however, the effectiveness monitoring lacks a project devoted to determining progress toward this objective. A monitoring project designed to follow the actual RMZ stand characteristics in terms of conifer stocking and age/size distribution as influenced by harvest, windthrow, and landslides is needed.

Response to Comment S6-21

As noted in the comment, changes in salmonid populations within the Plan Area are influenced by factors beyond those identified in the ACHP/CCAA. Consequently, the development of specific fish population objectives would be speculative until outside factors and their influence on fish populations could be meaningfully assessed. Therefore, Green Diamond prefers to base the measures in its Operating Conservation Program (AHCP/CCAA Section 6.2) on the biological goals and objectives stated in the Plan (AHCP/CCAA Section 6.1). The Services believe that the approach described in the AHCP/CCAA meets the ESA Section 10 Permit approval criteria (see AHCP/CCAA Section 1.4.1 and Master Response 8).

Response to Comment S6-22

The sediment objective is to reduce instream sedimentation rates through reducing management related sediment delivery into watercourses.

The four monitoring modules would determine the effectiveness of the conservation measures that were developed to reduce sediment delivery into watercourses. A separate objective for this monitoring is not necessary, nor proposed.

Response to Comment S6-23

The AHCP/CCAA Section 6.1.2.2.4 has been clarified as follows:

*“The biological objective for reducing management related sediment delivery into watercourses is based on two targets:*

1. *Treat some of the high and ~~or~~ moderate priority sites...*”

S6-20

Low levels of instream and recruitable conifer LWD is a primary factor influencing habitat quality for coho and other salmonids. In addition to direct contribution to amphibian habitat quality, LWD influences numerous instream and nearstream processes essential for maintaining the functional integrity of small and medium-size riparian ecosystems (Bilby and Likens 1980).

Just as a specific, numeric objective for RMZ stand composition can be described, so can an objective for instream LWD abundance, composition, and age. Rather than using the threshold for instream conifer LWD to move toward more conifer retention in RMZs, the instream threshold could be used to identify areas that currently have sufficient instream levels of LWD so that some level of recruitable conifer could be harvested. This threshold might also be met with active addition of LWD by Simpson from outside the RMZ during timber harvesting activities.

6.1.2.2.3 Amphibian Population Objective

The biological objective for amphibian populations is based on two targets:

1. Results of paired sub-basin monitoring indicate that timber harvest activities have no measurable impact on populations of the covered amphibians.
2. Estimates of occurrence of tailed frogs and southern torrent salamanders in Plan Area Class II watercourses will be at least 75 and 80%, respectively.

S6-21

Fish Population Objectives should be added and should include an increasing population trend as the objective. Since monitoring of summer juvenile salmonid populations and outmigrant numbers is proposed, there should be a corresponding objective. It is recognized there are factors outside of timber harvest that may influence anadromous fish numbers which would make it difficult to apply specific thresholds, however, changes in long term trends in fish populations together with changes in habitat quality would have major implications regarding plan effectiveness. In recognition that salmonid recovery is a federal as well as state agency policy goal, a resource management proposal such as the AHCP should have a salmonid population objective.

6.1.2.2.4 Sediment Objective

S6-22

Similar to the in-channel LWD objective there should be at least a general objective of reducing instream sedimentation rates. Four monitoring modules - Substrate permeability monitoring, Class I channel monitoring, Class III sediment monitoring, and Long-term habitat assessments - all collect information regarding instream sediment; an objective for this monitoring should be stated.

S6-23

The biological objective for reducing **management related** sediment delivery into watercourses is based on two targets:

1. Treat **some of the high and** ~~or~~ moderate priority sites (classified in terms of likelihood to deliver sediment to Plan Area watercourses), to reduce the amount of road-related (**roads include permanent and seasonal roads and landings,**

Response to Comment S6-24

See Master Response 8, regarding Permit approval criteria; Master Response 16, regarding 70 percent effectiveness; and Master Response 17, regarding road density.

Response to Comment S6-25

See response to Comment S6-8.

Response to Comment S6-26

See response to Comment S6-8. To clarify the role of the biological objectives, see Master Response 12 regarding a prescription-based approach.

Response to Comment S6-27

See AHCP/CCAA Section 6.2.3 (*Road Management Measures*). During the 50-year term of the Permits, all high and moderate risk sediment delivery sites will be treated (AHCP/CCAA Section 6.3.3.2.5). As discussed in AHCP/CCAA Section 6.3.3.2.1, all roads within the Plan Area will be classified as management roads, temporarily decommissioned roads, or permanently decommissioned roads. The entire classification system will be reviewed every five years to ensure that management roads that are no longer needed for log transportation or administrative access are changed to the appropriate decommission status. Newly constructed roads will be built to higher standards and will not require treatment.

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**but not skid roads) sediment at such sites by more than 46% (change some of the high and moderate potential delivery sites to low potential delivery sites) within the first 15 years of the Permits, and the remaining 54 percentage over the last 35 years of the Permits. See DFG comments later in the document regarding these objectives. Although a significant effort and apparently well prioritized by watershed, we believe this is not a volume or rate of reduction consistent with "minimizing and mitigating to the fullest extent practicable". Simpson previously stated to DFG the intent of treating high and moderate sites in the first 15 years of the Permits to reduce the amount of road related sediment at such sites by more than 70%, and the remaining percentage over the last 35 years of the Permits. What is the basis for reducing the biological goal from 70% to 46%? How many potential delivery sites are in each category? Why wasn't a strategy of treating a minimum number of sites, cubic yards of sediment, and miles of roads per year included?**

While we recognize there are specific cases when removal of all fill may not be needed to stabilize a treatment site, the vast majority of sites should be fully treated to "non" sites rather than treated to reduce them from high or moderate sites to low sites. Low sites can continue to deliver chronically or episodically, whereas delivery from "non" sites is zero or insignificant.

There is significant subjectivity in assigning low, moderate, or high values to the sites, based mainly on likelihood of a site to deliver, but also by the estimated amount of sediment saved vs. cost per cubic yard saved. The cumulative margin of error with regard to volume and cost in such estimates may be significant, and could result in greatly underestimating the actual costs associated with site treatment. The proposed funding limitation could result in non-achievement of the biological objective. Further, all low sites will apparently remain untreated throughout the life of the HCP and may add to existing significant cumulative sediment effects in watersheds throughout the plan area. See also DFG comments to number 3 under 6.2.3.2, Implementation Plan

How many high, moderate, or low priority sites would be treated, and how many would remain untreated for up to 50 years? How many new high, moderate, or low priority sites will develop over the next 50 years due to continued deterioration of facilities on legacy roads or site specific problems associated with new road construction or reconstruction?

There are many inaccessible legacy roads in the plan area. Many of these may remain as sources of existing or potential chronic or episodic sediment. These roads should also be evaluated and treatment options discussed with regard to threats posed to the covered species.

2. Achieve a 70% reduction in sediment delivery from management-related landslides in harvested steep streamside slopes compared to delivery volumes from appropriate reference areas within clearcut stands. How is allowing a 30% increase in management related landslides compared to reference areas consistent with "minimizing and mitigating to the maximum extent practicable"?

Response to Comment S6-28

appropriate.

AHCP/CCAA Section 6.3.3 describes the methodology that Green Diamond used in assessing the road network within the Plan Area, as well as providing an implementation prioritization plan and schedule. The approach presented in the Plan (AHCP/CCAA Section 6.2.3) includes methods to prioritize actions for all the roads that were constructed in the watershed, whether they are currently maintained and driveable or are now abandoned and overgrown with vegetation. See AHCP/CCAA Section 6.3.3.2.3, regarding assessment of the road network, and Master Response 17, regarding road density.

Response to Comment S6-29

The establishment of the 70% threshold to evaluate the effectiveness of the conservation measure for protection of steep streamside slopes has been discussed in Master Response 16. The Plan includes measures to reduce sediment input from roads and other sources (see AHCP/CCAA Sections 6.2.2, 6.2.3 and 6.2.4). However, selection of specific measures to include in an operating conservation program is within the discretion of the Permit applicant (HCP Handbook at 3-19). The Services' role in designing the conservation program is to "be prepared to advise" during the development of the Plan and to judge its consistency with the ESA approval criteria as a whole, rather than on a measure-by-measure basis, to determine whether it meets the ESA Permit issuance criteria discussed in EIS Section 1.3, AHCP/CCAA Section 1.4.1 and Master Response 8. The Services believe the Plan meets these criteria. See the response to Comment S6-20, regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that the Plan, including its conservation measures to reduce sediment delivery, meets ESA section 10(a) approval criteria (see Master Response 8).

As provided in AHCP/CCAA Appendix D, Section 3.4, "appropriate reference areas" are those areas that are suitable for comparison and include relatively close proximity, composition, and geology. Both harvested and unharvested SSSs may be subdivided for comparison according to geologic conditions, forest stand type, management zone (RSMZ and SMZ) land use, and other sub-groupings as may be

Response to Comment S6-30

See Master Response 1, regarding baseline conditions, and Master Response 8, regarding Permit approval criteria. The environmental analysis of the Plan considers the Proposed Action, implementing the Operating Conservation Program (AHCP/CCAA Section 6.2), relative to the No Action Alternative, under which scenario no ESA Section 10 permits would be issued and the Plan would not be implemented. See EIS Section 2.2, regarding the Proposed Action, and EIS Section 2.1, regarding the No Action Alternative. The No Action Alternative does not provide a snapshot of baseline conditions. Instead, it provides an anticipated trend - what conditions are expected to exist over time. Therefore, the Services believe the points of comparison in the Plan and the environmental analysis of it are appropriate.

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Why was 70% chosen vs. 90% or more? What is the definition of an "appropriate reference area within a clear cut stand"?

**6.1.2.2.5 Monitoring and Adaptive Management Objective**

The biological objective for monitoring and adaptive management will be to measure detectable changes in baseline biological conditions so as to make appropriate adjustments, **(if equal or greater benefit to the Covered Species and consistent with minimizing and fully mitigating to the maximum extent practicable)** to the Operating Conservation Program to meet the Plan's goals.

S6-30

Using maintenance of current conditions across the managed landscape as the standard is insufficient to lead towards recovery of listed species and does not reduce the risk of future listing of other Covered Species. A program based on trending toward desired habitat conditions for the Covered Species would be most appropriate and compatible with the intent stated in the Draft Addendum to the Handbook for Habitat Conservation Planning and Incidental Take (1999).

**6.2 SIMPSON'S OPERATING CONSERVATION PROGRAM**

Based upon the biological goals and objectives, Simpson has developed a comprehensive conservation program with a number of specific conservation measures. These measures are termed the "Operating Conservation Program" and reflect all the binding, enforceable commitments Simpson will make to satisfy the requirements of ESA Section 10(a). The Operating Conservation Program will be incorporated by reference in the section of the IA that describes all Simpson's conservation planning commitments that must be made and carried out to qualify for and comply with the ITP and ESP that Simpson is seeking. Section 6.3, which follows, provides a supplement to the Operating Conservation Program, with a detailed discussion of the background, rationale, and intent of the measures. Section 6.3 is not an express element of the Operating Conservation Program but is intended to guide its implementation.

Pursuant to the Operating Conservation Program, Simpson will undertake the following measures on its fee-owned lands and the 1,866 acres in which it owns perpetual harvesting rights granted by Simpson Timber Company on June 28, 2002 within the Plan Area during the term of the Plan and Permits.

In all areas where Simpson holds perpetual harvesting rights in the Initial Plan Area, with the exception of the above-referenced 1,866 acres granted on June 28, 2002, and any Harvesting Rights areas added to the Plan Area over time, all measures will be implemented except as follows: 1) the road assessment and implementation plan measures (6.2.3.1 and 6.2.3.2) will not apply, and 2) routine road maintenance and inspection plan measures (6.2.3.9) will apply only where Simpson has exclusive road-use rights. Furthermore, when Simpson acquires Harvesting Rights and plans to make an election to add such areas to the Plan Area pursuant to IA Paragraph 11.2, Simpson will use its best efforts to enter into an agreement with the fee owner to allow for the application of the road assessment and implementation plan measures (6.2.3.1 and 6.2.3.2) on such lands and, if successful, will apply these measures in such Harvesting Rights areas. Where Simpson does not have exclusive road-use rights in a Harvesting

Rights area, Simpson will conduct road maintenance and inspection activities in accordance with existing FPRs and Simpson's management policies and practices. Harvesting Rights acreage added to or deleted from the Plan Area pursuant to the IA will be taken into account for purposes of the annual adjustments made pursuant to 6.2.3.2.1.4.

Regarding roads that are subject to Road Access Rights and included in the Plan Area pursuant to Section 1.3.2.1 and Implementation Agreement Paragraph 3.11.1, Simpson will conduct the assessment of road-related sediment sources for existing roads pursuant to 6.2.3.1.1-6.2.3.1.4 where the fee owner allows Simpson to do so, and Simpson will report the results of the assessment to the Services. Simpson will apply the routine road maintenance and inspection plan measures (6.2.3.9) on such roads only where Simpson has exclusive road-use rights. Where Simpson does not have exclusive road-use rights in a Harvesting Rights area, Simpson will conduct road maintenance and inspection activities in accordance with existing FPRs and Simpson's management policies and practices. Furthermore, Simpson will apply the following specified measures relating to time of year restrictions (6.2.3.4.1- 6.2.3.4.3), design flow (6.2.3.4.5 #1-3), washed out or replacement culverts (6.2.3.4.7), reshaping (6.2.3.4.8), new road construction standards (6.2.3.5), drainage structures (6.2.3.6), erosion control measures (6.2.3.8) and road and landing use limitations (6.2.3.11). Simpson will not apply the remainder of the measures of section 6.2 to these roads, and the acreage of such roads will not be taken into account for purposes of the accelerated road implementation plan and the annual adjustments made pursuant to 6.2.3.2.1.4.

#### **6.2.1 Riparian Management Measures**

**Unless and until modified by future adaptive management measures, which have been agreed upon by Simpson and the Services or resolved through the dispute resolution process, all of the prescriptive measures in Section 6.2 will be implemented by Simpson on all Simpson lands covered by the AHCP for the 50 year life of the plan.** DFG believes it is appropriate to provide a context for the proposed riparian management and other AHCP measures. It is reasonable to assume Simpson will pursue modification of these measures through adaptive management. It would be most appropriate to allow the default prescriptions to function until tested by stressing storms. Modifications to the initial defaults, informed by monitoring results in the absence of stressing storms could be achieved through agreement by both Simpson and the Services. However, if agreement could not be reached without dispute resolution then the initial defaults should remain.

##### **6.2.1.1 Class I RMZ Width**

1. Simpson will apply a **standard** riparian management zone (RMZ) of at least 150 feet (slope distance) on each bank of all Class I watercourses. The width will be measured from the watercourse transition line or from the outer Channel Migration Zone (CMZ) edge or **outer floodplain edge** where **these features are present, applicable. The portion of any legacy roads, landings, skid trails, or railroad grades within CMZs or floodplains will be included as part of the CMZ or floodplain.**

Response to Comment S6-31

See Master Response 7 regarding the Operating Conservation program and the CFPRs, Master Response 18 regarding riparian widths, and the response to Comment S6-20 regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that the Plan, including its riparian management measures (AHCP/CCAA Section 6.2.1), meets ESA section 10(a) approval criteria (see Master Response 8).

Response to Comment S6-32

As noted in AHCP/CCAA Section 6.3.1.4, “[u]nique geomorphic features which may warrant separate or additional conservation measures include CMZs and floodplains. CMZs are important in determining where RMZs should be measured from, while the occurrence of floodplains may require the RMZ width to be expanded to ensure the entire floodplain and a 30- to 50-foot buffer are protected.” Also see Master Response 18, regarding riparian widths.

S6-31

What is the biological basis for the “at least 150’ slope distance” chosen for Class I streams? Why is the default width no different based on slope classes? For example, why isn’t a tree height, based on age and site, used as the basis for determining the default Class I width? Why is a special operating zone (SOZ) not included? If the default is 150 foot slope distance, an SOZ should be established for all Class I RMZs not qualifying for additional width beyond 150 feet according to other slope stability protection measures. The SOZ should be an EEZ and extend upslope at least 50 feet from the outer boundary of the default Class I RMZs for a total width of at least 200 feet. Within the SOZ, all hardwoods, and all midcanopy, and understory conifers should be retained, and fire excluded. The establishment of an SOZ would help reduce blowdown and improve filter strip properties, while not significantly reducing harvest volume from the zone. This would afford all Class I watercourses with at least 200 feet of uneven-age management, instead of 150 feet as currently proposed. The addition of the SOZ would also be consistent with the minimum protection measures in the current FPRs for Class I watercourses protection in watersheds with threatened and impaired values. Establishment of SOZs was recommended specifically to address the need for additional protection where even age management borders riparian zones by an independent scientific review panel in a 1999 report prepared for the National Marine Fisheries Service and The Resources Agency of California. We believe the inclusion of an SOZ is needed to minimize and mitigate the impacts of the plan to the maximum extent practicable.

S6-32

The CMZ should be redefined to encompass the flood prone zone, and channels with gradients less than 4% evaluated for the presence of CMZs.

The RMZ width should be measured from the edge of the CMZ or floodplain where they exist, not “where applicable”.

The floodplains in Simpson ownership periodically contribute both shade and LWD to the active channel and capture and store fluvial and hillslope sediment. The RMZs should be measured from the outer edge of floodplains, not CMZs, and not be limited to the first 150’ of the floodplain. The distance upslope from the outer edge of the floodplain should be at least as wide as the default Class I width.

For example, under the proposed AHCP, if the floodplain was 100 feet wide and bordered by a 59% slope, the additional slope protection would only be 50 feet. The 50 feet of slope protection is an inadequate width to provide for sediment retention and conifer recruitment to the floodplain.

Additionally, many streams on Simpson lands have legacy logging roads, skid roads, or railroad grades, or legacy management related mass wasting adjacent to the channel which have widened a pre-existing floodplain or created an elevated floodplain feature. Many of these sites are alder dominated, with few to no conifers. Under the draft AHCP, these features could be counted as floodplains, and their widths deducted from slope RMZ widths.

2. Where the floodplain is wider than 150 feet on one side, the outer zone of the RMZ will extend to the outer edge of the floodplain. An additional buffer will be added to the RMZ immediately adjacent to a floodplain, as follows:

Response to Comment S6-33

See Master Response 18.

Response to Comment S6-34

See response to Comment S1-15.

Response to Comment S6-35

See Master Response 18, regarding riparian widths; Master Response 7, regarding the Operating Conservation Program and the CFPRs; and the response to Comment S6-20, regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that the Plan, including its RMZ measures, meets ESA section 10(a) approval criteria (see Master Response 8).

<u>Side Slopes</u>	<u>Additional Floodplain Buffer</u>
0-30%	<u>30 feet</u>
30-60%	<u>40 feet</u>
>60%	<u>50 feet</u>

6.2.1.1.1 Inner Zone RMZ Width

S6-33 [ The width of the inner zone should be determined based upon other factors in addition to slope, including slope stability, site class, stocking, aspect, and channel width and gradient.

Simpson will establish an inner zone within the RMZ, the width of which will depend upon the streamside slope in accordance with the following:

<u>Side Slopes</u>	<u>Inner Zone Width</u>
0-30%	50 feet
30-60%	60 feet
>60%	70 feet

**The width of any existing roads or landings within the inner zone (toe of fill to top of cut) will be mitigated by extending the inner zone width an equivalent distance.**

6.2.1.1.2 Outer Zone RMZ Width

Simpson will establish an outer zone of the RMZ within the RMZ, which will extend from the outside limit of the inner zone edge to at least 150 feet from the bankfull channel (or CMZ edge) with the additional floodplain buffer set forth above.

**6.2.1.2 Conservation Measures within Class I RMZs**

S6-34 [ During the life of the Plan, Simpson will carry out **no more than one** harvest entry into Class I RMZs, which will coincide with the **even-aged** harvest of the adjacent stand. Simpson will apply the restrictions in this subsection during such entry. A particular Class I RMZ may have no entries over the life of the plan due to site specific conditions. Additionally, the adjacent stand may receive other than even-age silviculture.

6.2.1.2.1 Overstory Closure

S6-35 [ 1. Simpson will retain at least 85% **conifer overstory canopy closure** where it exists within the inner zone. **Where it does not exist, harvest of conifer will not occur.** The conditions under which anadromous salmonids evolved in the lands proposed for coverage under the draft AHCP typically included conifer dominated overstory canopy in riparian zones. Many of these zones are now

Response to Comment S6-36

See response to Comment R1-65 and Master Response 14, regarding Plan enforceability.

Response to Comment S6-37

See the response to Comment S6-20, regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that the Plan, including its conservation measures within Class I RMZs, meets ESA section 10(a) approval criteria (see Master Response 8). See also Master Response 18 and response to Comment S6-38.

S6-35

dominated by alders and other hardwoods that form part of or dominate the overstory canopy. In view of this conifer deficit, RMZ prescriptions should include significant restrictions on conifer harvest, particularly within inner zones. Under the current proposal, conifer in riparian stands not fully stocked could be harvested and hardwoods left as a dominant canopy component. The current FPRs require a Class I inner zone width greater than proposed in the draft AHCP. It is unclear how proposed AHCP measures less protective than those found in the current FPRs are consistent with "fully minimizing and mitigating the impacts of authorized incidental take of Covered Species that may result from Covered Activities to the maximum extent practicable".

- 2. At least 70% canopy overstory closure will be retained within the outer zone.
- 3. CDF protocol in effect as of the date of the Plan will be used for sampling overstory canopy cover to determine compliance with the overstory canopy closure requirements. We believe the extent to which CDF inspectors will use other than a visual estimation of canopy cover will be extremely limited.

6.2.1.2.2 Retention Based on Bank Stability

S6-36

1. Within the RMZ, Simpson will harvest no trees ~~that contribute to maintaining bank stability~~. **Trees that contribute to maintaining bank stability include, but are not limited to, live or dead trees with boles, individual roots, and/or root masses present in the channel, on the stream bank, or within one crown diameter (dominant conifer species in stand, age 100 for timber site present) of the stream bank.** DFG believes this is not enforceable as proposed, subject to disagreement in the field, and requires the additional suggested criteria.

S6-37

~~2. Redwoods will be preferentially harvested over other conifers.~~ DFG has observed significant post-harvest blowdown of fir in RMZs on Simpson lands where redwoods were preferentially or incidentally harvested over other conifers. Most of the redwood stumps will resprout and re-gain root strength, other conifer species root systems will die, and fir species will likely become candidates for recruitment faster than the more long-lived and disease resistant redwood. However, as Simpson Registered Professional Foresters (RPFs) have explained in the field, not all redwood stumps re-sprout. Further, removing redwoods over other conifers may lead to accelerated blowdown of remaining trees, loss of future LWD recruitment, and short term increases in sediment input. DFG has also observed, and RPFs have confirmed, where redwoods are subject to wind throw they often snap off well above the ground rather than uprooting, resulting in both LWD delivery and trees with the potential to become excellent wildlife habitat or future additional LWD candidates. Redwood LWD may also last longer in-channel than other conifer species. Therefore, where harvest of conifers in RMZs is proposed, it should be based on the setting rather than on the species and conifer composition should be similar to pre-harvest diversity.

6.2.1.2.3 Conifer Density Requirements

Response to Comment S6-38

See Master Response 18. In addition, as noted in EIS Section 4.5.3.2 (Proposed Action Riparian Management Effects), riparian areas under the Proposed Action would comprise more mature trees by the end of the terms of the Permits, compared with either existing conditions or the improvements expected to occur over time under the No Action Alternative.

Response to Comment S6-39

See Master Response 5.

1. If the inner zone is predominantly composed of hardwoods (it contains less than 15 conifer stems per acre that are greater than 16 inches dbh), Simpson will take no conifers from the inner zone. This threshold appears too low. Fifteen conifer stems per acre 16 inches dbh is only 21 square feet of basal area. Conifer harvest from any Class I RMZ should be only from those stands which are fully stocked with conifer. Within these zones, no predominant, dominant, or co-dominant conifers should be harvested until the watercourse segment adjacent to the harvest area is also fully stocked with instream LWD per applicable LWD literature for the channel dimension. Until such time, where conifer is harvested from such fully stocked stands, it be accomplished by thinning from below, subject to Simpson's proposed "likely to recruit" criteria. These harvest criteria should also be applied to at least the lower 500 feet of all Class II-2 RMZs bordering Class I RMZs.
2. No harvesting within the RMZ will be undertaken that would reduce the conifer stem density within the RMZ to less than 15 conifer stems per acre. Has it been demonstrated that 15 conifer stems per acre (21 square feet of basal area) is adequate for LWD recruitment or other riparian functions? The language as proposed could allow harvest of conifer stems down to 15 per acre greater than 16 inches dbh as long as the steep streamside slope (SSS) provisions, likely to recruit criteria and overstory canopy minimums (which include hardwoods) are met. In areas not subject to steep streamside slope provisions, where there are few recruitable conifers, and where conifer overstory canopy is lacking, it appears harvesting at these levels will perpetuate alder or other hardwood domination and significantly retard conifer recovery in the RMZs for at least the life of the AHCP/CCAA. Moreover, if the adjacent slope is subject to even-age harvest, significant blowdown of both conifer and hardwood could occur in these poorly stocked RMZs, further delaying development of stands capable of contributing whole tree conifer LWD.

S6-38

6.2.1.2.4 Retention Based on Likelihood to Recruit

Simpson will harvest no trees within the RMZ that are judged by Simpson to be "likely to recruit to the watercourse." Such judgment will be based on one or more of the **criteria factors** listed in 6.2.1.2.5 and 6.2.1.2.6.

6.2.1.2.5 "Likely to Recruit" Criteria Factors

The following **criteria considerations** will be used to determine which trees are "likely to recruit to the watercourse" **if one or more of the criteria apply to any tree in the RMZ, the tree will be retained in the RMZ for at least the life of the AHCP:**

S6-39

1. Tree is on the stream bank;
2. Tree has roots in the stream bank or stream;
3. Tree is leaning toward the stream; What is the specific amount of lean required in terms of percent, degrees, or ocular estimate?

Response to Comment S6-40

See Master Response 5. The Plan has been modified to make the “likelihood to recruit” language less ambiguous and a monitoring program has been added to track implementation of this measure over the term of the Permits.

See Master Response 14 regarding Plan enforceability.

Response to Comment S6-41

See Master Response 5.

Response to Comment S6-42

See Master Response 5.

Response to Comment S6-43

See the response to Comment S6-20, regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that the Plan, which includes the equipment exclusion measures, meets the ESA Section 10 Permit approval criteria, which are discussed in Master Response 8.

S6-40 4. Tree is tall enough to ensure it will reach the stream; What age must the tree be in order to be “tall enough”? Does this mean “tall enough at the time of harvest”? Would a vertical 100 year-old Douglas-fir on site class II ground located 150 feet from the channel be considered likely to recruit? Such a tree would be tall enough (approximately 180 feet) to reach the channel, but may not be considered likely to recruit at 150 feet from the channel by Simpson because it would be a candidate for harvest at age 40 to 50. This factor/criteria appears unenforceable as written.

S6-41 5. Tree is on a slope that is sufficiently steep such that gravity would likely carry the fallen tree into the stream; This appears highly subjective and will be difficult to enforce.

6. Tree is on an unstable area or immediately downslope of such an area. What enforceable definition of “unstable area” will be used?

6.2.1.2.6 “Unlikely to Recruit” Factors

Considerations used by Simpson to determine which trees are “not likely to recruit to the watercourse” will be:

- S6-42 1. Tree has an impeded “fall path” to the stream (outside family members of a clonal group); or DFG believes defining an “impeded fall path” will be difficult as currently written.
- 2. Tree is leaning away from stream, **except where the tree is leaning toward a Class II watercourse within a Class I RMZ.** Trees leaning away from a Class I, but towards a Class II watercourse segment within a Class I RMZ should be considered for retention within the Class I RMZ to recruit to the Class II watercourse

6.2.1.2.7 Tree Falling for Safety Purposes

Trees may be felled within RMZs to create cable yarding corridors as needed to ensure worker safety, subject to the canopy closure requirements set forth above. **Such trees will be retained in the RMZ and actively recruited to (placed in) the watercourse where practicable, with input from a qualified fisheries biologist.** ~~Such trees will be part of the harvest unit.~~

6.2.1.2.8 Equipment Exclusion Measures

S6-43 The RMZ will be an equipment exclusion zone (EEZ), except for existing roads and landings **necessary for future timber operations**, construction of spur roads to extend outside the RMZ and **existing** watercourse crossings. **Proposed use of landings and construction of spur roads in RMZs will be clearly stated in the THP, and the landing and/or skid trail use must be demonstrated to have a net beneficial effect in aquatic resource protection. Where roads and landings exist in the RMZ, they will be hydrologically disconnected, upgraded, storm proofed and surfaced with a minimum 12” lift of compacted durable rock prior to use for timber operations.**

S6-43

Where a rocked road surface currently exists, it will be maintained to achieve a minimum 12" lift of compacted durable rock prior to use for timber operations. Timber harvested within the RMZ for construction of spur roads to extend outside the RMZ, or to reconstruct, upgrade, or maintain any RMZ road will remain in the RMZ and where practicable be placed in the watercourse as LWD. Placement will be under the direction of an RPF and qualified fisheries biologist. Roads in RMZs have an extremely high potential for sediment delivery into watercourses. In the absence of removing all RMZ roads and landings, they should be hydrologically disconnected, upgraded, storm proofed, effectively rocked, subject to a restricted hauling window to maintain the rocked surface integrity. Any trees felled in association with road activity in the RMZ should be retained and where practicable actively recruited to the watercourse. DFG provides additional comments on EEZ measures related to hauling later in this document. (See DFG comments to 6.2.3.5.10 regarding rocking).

#### 6.2.1.2.9 Management-related Ground Disturbance Treatment

1. Any ground disturbance caused by management activities that is larger than 100 square feet within an RMZ will be mulched and seeded or otherwise treated to reduce the potential for sediment delivery from sheet and gully erosion.
2. Minimum standards for seeding and mulching operations are 30 pounds per acre of seed and a minimum mulching depth of two inches, covering at least 90% of the surface area. In addition to application rate ("at least 30 pounds per acre"), the seed mix should be identified as to species composition and minimum percent viability, and the mulching specifications should be disclosed here and throughout the Operating Conservation Plan wherever seeding and mulching are mentioned.
3. **Where they cannot be feasibly excluded from RMZs, hand-constructed firelines** (established by removing the duff and litter layers to expose, but not disturb, the mineral soil) will not be subject to the 100-square foot ground disturbance standard, but other measures will be applied as necessary to ensure that hand-constructed firelines within a Class I RMZ do not deliver sediment to Class I watercourses.

#### 6.2.1.2.10 Snag Retention Measures

Simpson will retain all safe snags within the RMZ, and fall and leave unsafe snags on-site. **Where practicable, felled unsafe snags will be placed in the channel as LWD. Placement will be under the direction of a qualified fisheries biologist.**

#### 6.2.1.2.11 Inner Zone Salvage

Simpson will not carry out salvage within the inner zone of the Class I RMZ. If any part of the salvageable piece is in the inner zone, the entire piece will be left.

#### 6.2.1.2.12 Floodplain or CMZ Salvage

Simpson will not carry out salvage within an identified floodplain or CMZ.

Response to Comment S6-44

See the response to Comment S6-20, regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that the Plan, including its RMZ measures, meets ESA section 10(a) approval criteria (see Master Response 8).

Response to Comment S6-45

See Master Response 18, regarding riparian widths and the response to Comment S6-20 regarding the respective roles of the Permit applicant and the Services in the development of an HCP.

6.2.1.2.13 Outer Zone Salvage

Within the outer zone of the Class I RMZ Simpson will conduct salvage operations only of downed trees and if one or more of the following criteria is met:

1. The wood is not currently, and is unlikely in the future to be, incorporated into the bankfull channel (including wood located on or below unstable areas), **CMZ, or floodplain;**
2. The wood is not contributing to bank or slope stability; or
3. The wood is not positioned on a slope such that it can act to intercept sediment moving toward **any watercourse** ~~the stream~~.

6.2.1.3 Class II RMZ Width

1. Simpson will establish an RMZ of at least 70 or 100 feet on each bank of all Class II watercourses.
2. A 70-foot minimum buffer will be used on the first 1,000 feet of 1st order Class II watercourses (Class II-1 watercourses). Why was 1,000 feet chosen? Why not start at the bottom (near the confluence with the Class II-2) and extend the wider RMZ 1000 feet upslope?
3. A 100-foot minimum buffer will be used on all 2nd order or larger Class II watercourses (Class II-2 watercourses).

S6-44

6.2.1.3.1 Inner Zone RMZ Width

Simpson will establish an inner zone within the RMZ, the width of which will be **at least 30 feet** measured from the first line of perennial **upland** vegetation **or, where they exist, from the watercourse transition line or the outer CMZ edge. The width of any existing roads or landings within the inner zone (toe of fill to top of cut) will be mitigated by extending the inner zone width an equivalent distance.**

6.2.1.3.2 Outer Zone RMZ Width

Simpson will establish an **outer zone of the RMZ** within the RMZ, which will extend the remaining 40 feet or 70 feet (depending on whether it is a Class II-1 watercourse or a Class II-2 watercourse, respectively).

An SOZ should be established for all Class II-1 RMZs not qualifying for additional width according to other slope stability protection measures. The SOZ should be an EEZ and extend upslope at least 30 feet from the outer boundary of the default Class II-1 RMZs for a total width of at least 100 feet. Within the SOZ, all hardwoods, and all midcanopy, and understory conifers should be retained, and fire excluded. The establishment of an SOZ would help reduce blowdown and improve filter strip properties. This would afford all Class II watercourses with at least 100 feet of uneven-age management.

S6-45

6.2.1.4 Conservation Measures within Class II RMZs

Response to Comment S6-46

See the response to Comment S6-20 regarding the respective roles of the Permit applicant and the Services in the development of an HCP. The Services believe that Green Diamond’s Operating Conservation Program (AHCP/CCAA Section 6.2), including the RMZ prescriptions, meets the ESA Section 10 Permit approval criteria, which are discussed in Master Response 8.

Response to Comment S6-47

See response to Comment S6-36.

Response to Comment S6-48

See response to Comment S6-37.

During the life of the Plan, Simpson will carry out ~~only~~ **no more than one harvest entry** into Class II RMZs, which will coincide with the ~~even-aged~~ **harvest (except for pre-commercial or commercial thinning)** of the adjacent stand. Simpson will apply the restrictions in this subsection during such entry.

6.2.1.4.1 Overstory Canopy Closure

1. Simpson will retain at least 85% **conifer overstory canopy closure** within the inner zone **where it exists. Where it does not exist, no inner zone conifer harvest will occur.** Any Class II RMZ prescriptions should include greater restrictions on conifer harvest within the inner zone than proposed. The width of the inner zone should be determined based upon factors including slope, stability, site class, stocking, and channel width, energy, and gradient. Under the current proposal, conifer in riparian stands not fully stocked could be harvested and hardwoods left as a dominant overstory canopy. (See also DFG comment to 6.2.1.2.1).
2. At least 70% overstory canopy closure will be retained within the outer zone.

S6-46

6.2.1.4.2 Retention Based on Bank Stability

Within the RMZ, Simpson will harvest no trees that **contribute to maintaining bank stability.** This does not appear to be enforceable, and requires more specific criteria. DFG offers the following: **“Trees that contribute to bank stability include, but are not limited to, live or dead trees with boles, individual roots, and/or root masses present in the channel, on the streambank, or within one crown diameter of the streambank”.** **Redwoods will be preferentially harvested** over other conifers. DFG has observed significant post-harvest blowdown of fir in RMZs on Simpson lands where redwoods were preferentially or incidentally harvested over other conifers. We are aware that most of the redwood stumps will resprout and re-gain root strength, other conifer species root systems will die, and fir species will likely become candidates for recruitment faster than the more long-lived and disease resistant redwood. However, as Simpson RPFs have explained in the field, not all redwood stumps re-sprout. Further, removing redwoods over other conifers may lead to accelerated blowdown of remaining trees, loss of future LWD recruitment, and short term increases in sediment input. DFG has also observed, and RPFs have confirmed, where redwoods are subject to wind throw they often snap off well above the ground rather than uprooting, resulting in both LWD delivery and trees with the potential to become excellent wildlife habitat or future additional LWD candidates. Redwood LWD may also last longer in-channel than other conifer species. Therefore, where harvest of conifers in RMZs is proposed, it should be based on the setting rather than on the species and conifer composition should be similar to pre-harvest diversity.

S6-47

S6-48

6.2.1.4.3 Retention Based on Likelihood to Recruit

Response to Comment S6-49

See Master Response 5, regarding “likelihood to recruit” and Master Response 18, regarding riparian width and proper riparian function.

Response to Comment S6-50

See response to Comment S6-43.

S6-49

Simpson will harvest no trees within the first 200 feet of the Class II RMZ adjacent to the Class I RMZ that are judged by Simpson to be “likely to recruit to the watercourse.” Such judgment will be based on the same factors that are listed in 6.2.1.2.5 and 6.2.1.2.6. There should be a strategy for retaining likely to recruit conifers in the Class II RMZs which are aligned in the same axis as (e.g. upstream extensions of) Class I RMZs. This would allow recruitment on-site in the Class II watercourse for sediment retention and routing, and also provide a source of LWD for export to the Class I.

6.2.1.4.4 Tree Falling for Safety Purposes

Trees may be felled within RMZs to create cable yarding corridors as needed to ensure worker safety, subject to the canopy closure requirements set forth above. Such trees will be ~~part of the harvest unit~~ **retained in the RMZ and, where determined appropriate by a qualified fisheries biologist, recruited to the channel.**

6.2.1.4.5 Equipment Exclusion Measures

The RMZ will be an EEZ, except for existing roads and landings **necessary for future timber operations**, construction of spur roads to extend outside the RMZ and **existing watercourse crossings. Proposed use of landings and construction of spur roads in RMZs will be clearly stated in the THP, and the landing and/or skid trail use must be demonstrated to have a net beneficial effect in aquatic resource protection. Where roads and landings exist in the RMZ, they will be upgraded and/or storm proofed and surfaced with a minimum 12” lift of compacted durable rock prior to use for timber operations. Where a rock road surface currently exists, it will be maintained to achieve a minimum 12” lift of compacted durable rock prior to use for timber operations. Timber harvested within the RMZ of a Class I or Class II-2 watercourse for construction of spur roads to extend outside the RMZ, or to reconstruct, upgrade, or maintain any RMZ road will remain in the RMZ and where practicable be placed in the watercourse as LWD. Placement will be under the direction of a qualified fisheries biologist.** Roads in RMZs have a very high potential for sediment delivery into watercourses. In the absence of removing all RMZ roads and landings, the need to use them should be demonstrated, and they should be upgraded, effectively rocked and maintained as durable rock surfaces. Trees felled in association with road activity in the RMZs of larger watercourses should be actively recruited to the watercourse. (See also DFG comments to 6.2.3.5.10 regarding rocking).

S6-50

6.2.1.4.6 Management-related Ground Disturbance Treatment

1. Simpson will mulch and seed any area where ground disturbance caused by management activities is larger than 100 square feet within a Class II RMZ, or otherwise treat the area to reduce the potential for sediment delivery from sheet and gully erosion.
2. Minimum standards for seeding and mulching operations are 30 pounds per acre of seed and a minimum mulching depth of two inches, covering at least 90% of the surface area.

Response to Comment S6-51

Potential impacts are assessed for all alternatives relative to the No Action Alternative (i.e., continued timber harvesting and related operations in the Action Area in accordance with existing State and Federal regulations, including the CFPRs). Approval of the Plan and issuance of the Permits would not excuse Green Diamond from otherwise applicable legal requirements. CDF would continue to have the same authority to regulate timber harvesting before and after issuance of the Permits. Regarding the Operating Conservation Program and the CFPRs, see Master Response 7; regarding EEZs, see also the responses to Comments S1-33 and S1-34.

- 3. **Where they cannot be feasibly excluded from RMZs, hand-constructed firelines (established by removing the duff and litter layers to expose, but not disturb, the mineral soil) will not be subject to the 100-square foot ground disturbance standard, but other measures including but not limited to hand-constructed waterbreaks spaced at least to high EHR standards and which discharge to effective filter strips, will be applied as necessary to ensure that hand-constructed firelines within a Class II RMZ do not deliver sediment to Class II watercourses.**

6.2.1.4.7 Snag Retention

Simpson will retain all safe snags within the RMZ, and will fall unsafe snags and leave them onsite. **Felled unsafe snags will be placed in the channel as LWD under the direction of a qualified fisheries biologist, wherever practicable.**

6.2.1.4.8 Inner Zone Salvage

Simpson will not conduct salvage on downed trees within the inner zone. If any part of the salvageable piece is in the inner zone, the entire piece will be left.

6.2.1.4.9 Outer Zone Salvage

Simpson will carry out salvage operations within the outer zone only of downed trees and if one or more of the criteria listed in 6.2.1.2.13 are met.

**6.2.1.5 Class III Protections**

Simpson will apply one of two tiers of protection measures within Class III watercourses in accordance with HPA Groups and slope gradient (as measured with a clinometer), as follows:

HPA Group Slope Gradient

Smith River <65%=Tier A >65%=Tier B

Coastal Klamath <70%=Tier A >70%=Tier B

Korbel <65%=Tier A >65%=Tier B

Humboldt Bay <60%=Tier A >60%=Tier B

**6.2.1.6 Class III Tier A Protection Measures**

6.2. 1.6. 1 Equipment Exclusion Zone

Simpson will establish a ~~30~~ 50-foot EEZ (exceptions for the EEZ include **Services-approved** watercourse crossings and **Services-approved** existing roads). The existing FPRs require a 50 foot ELZ for slopes over 30%. The proposed EEZ described above is not an EEZ, but an ELZ wherever Simpson constructs temporary crossings and wherever existing roads cross the watercourse. For example, in the Coastal Klamath

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Response to Comment S6-52

See the response to Comment S6-51. Further, regarding the ITP requirement to minimize and mitigate the impacts of taking to the maximum extent practicable, see Master Response 8.2.

Response to Comment S6-53

See responses to Comments S6-51 and S1-36.

Response to Comment S6-54

See response to Comment S1-36.

S6-51	HPA Group, Class III watercourses with slopes up to 69% would be afforded only 30 feet of protection, and existing and proposed crossings would be allowed. All trees would be removed, and fire would not be prescriptively excluded. DFG does not agree that this level of protection is consistent with minimizing and mitigating the potential adverse effects of sediment discharge to the maximum extent practicable. Wider ELZs/EEZs should be required, and hardwood and non-merchantable conifer retention should be prescribed as per 6.2.1.7 for Tier B Class III ELZs/EEZs.
S6-52	<p>6.2.1.6.2 LWD Retention</p> <p>Simpson will retain all LWD on the ground (not including felled trees) within the EEZ.</p> <p>6.2.1.6.3 Site Preparation</p> <p>Simpson will not ignite fire during site preparation within the EEZ. (See above DFG comment for 6.2.1.6.1).</p> <p><b>6.2.1.7 Class III Tier B Protection Measures</b></p> <p>6.2.1.7. 1 <u>Equipment Exclusion Zone</u></p> <p>Simpson will establish <b>at least</b> a 50-foot EEZ (exceptions for the EEZ include watercourse crossings and existing roads). See DFG comments for Tier A regarding use of the term EEZ when crossings are expected.</p> <p>6.2.1.7.2 <u>Hardwood Retention</u></p> <p>Simpson will retain all hardwoods and nonmerchantable <b>conifers trees</b> within the EEZ except where necessary to create cable corridors or for the safe falling of merchantable trees. <b>Trees other than merchantable conifer felled in the ELZ or EEZ will be retained on site. Where practicable and determined by the RPF to benefit sediment retention, the felled trees will be placed in the watercourse.</b></p> <p>6.2.1.7.3 <u>Site Preparation</u></p> <p>Simpson will not ignite fire during site preparation within the EEZ. <b>Bare mineral soil created by site preparation within the ELZ/EEZ will be treated with straw mulch and seed. Minimum standards for seeding and mulching operations are 30 pounds per acre of seed and a minimum mulching depth of two inches, covering at least 90% of the surface area.</b></p> <p>6.2.1.7.4 Conifer Retention</p>
S6-53	<p>1. Simpson will retain <b>all</b> conifers where they contribute to maintaining bank stability or if they are acting as a control point in the channel. <b>Conifers that contribute to bank stability or act as control points in the channel include, but are not limited to, live or dead trees with boles, individual roots, and/or root masses present in the channel, on the streambank, or within one-half crown diameter of the streambank.</b></p>
S6-54	<p>1. Simpson will retain <b>all</b> conifers where they contribute to maintaining bank stability or if they are acting as a control point in the channel. <b>Conifers that contribute to bank stability or act as control points in the channel include, but are not limited to, live or dead trees with boles, individual roots, and/or root masses present in the channel, on the streambank, or within one-half crown diameter of the streambank.</b></p>

Response to Comment S6-55

The initial floodplain mapping work will focus on areas where THPs are likely to be laid out in the five years following the Permits' effective date.

Response to Comment S6-56

The Services are not aware of a way to permanently flag the floodplains, short of the establishment of survey bench points. The proposed use of GIS with locations established by GPS is appropriate and acceptable to the Services.

Response to Comment S6-57

Green Diamond will not be required by the Plan to identify or map CMZs associated with Class II watercourses. See response to Comment S6-55.

- 2. A minimum average of one conifer per 50 feet of stream length within the EEZ will be retained **regardless of bank stability criteria. Retained conifers will be 12" dbh or greater where they exist. Where they do not exist, the next smallest conifer will be retained. Where present, redwoods will be retained over other conifers to reduce the potential for uprooting due to wind throw.**

6.2.1.7.5 LWD Retention

Simpson will retain all LWD on the ground (not including felled trees) within the EEZ.

**6.2.1.8 Mapping of Unique Geomorphic Features**

6.2.1.8.1 Floodplains

S6-55 [

- 1. Simpson will map all floodplains of Class I or II watercourses within the Plan Area within five years after the Permits' effective date. For any lands added to the Plan Area after the end of the third year, Simpson will complete mapping within two years of the addition. How will floodplains be identified for THPs planned for harvest in less than 5 years?

- 2. Any sites that show the potential attributes of a floodplain based on geographic information system (GIS) analysis will be further analyzed using aerial photographs, maps, and historic field information.

- 3. The final determination of the boundaries of all floodplains within the Plan Area will be based on field verification with the oversight of a team of experts that may include a hydrologist, fluvial geomorphologist, geologist, and **qualified** fisheries biologist representing the Simpson and the Services, **but will include at a minimum a fluvial geomorphologist representing both Simpson and the Services.**

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- 4. Following field verification, the floodplains (with any additional buffers as provided in 6.2.1.1) will be flagged in the field and mapped on Simpson's GIS. **RPFs will refer to this database to identify floodplains and evaluate any proposed THP area to determine if additional floodplains exist which have yet to be mapped.** A more permanent system of field marking to designate the extent of floodplains should be accomplished. Flagging is very short lived in the field. Unless a THP is being prepared for the site, flagging may be a wasted effort.

6.2.1.8.2 CMZs

S6-57 [

- 1. Simpson will map all CMZs of Class I **and Class II** watercourses within the Plan Area within five years after the Permits' effective date. For any lands added to the Plan Area after the end of the third year, Simpson will complete mapping within two years of the addition. There may be locations on some large Class II watercourses where CMZs may be present. How will CMZs be identified for THPs planned for harvest in less than 5 years?