

Biscuit Fire Recovery Project

Evaluation of information to determine whether there are substantial changes in the proposed action that are relevant to environmental concerns or there are significant new circumstances or information relevant to environmental concerns and having a bearing on the proposed action or its impacts.

I. INTRODUCTION

The Rogue River-Siskiyou Forest Supervisor signed three Records of Decision (RODs) in July 2004 for the Biscuit Fire Recovery Project, authorizing salvage sales, planting, creation of Fuel Management Zones (FMZs), meadow and savannah restoration, road closure, road stabilization, road maintenance, monitoring, and a landscape scale learning study. The RODs followed a draft and final Environmental Impact Statement (Biscuit EIS). The RODs were distinguished by the land management allocations within which these actions were authorized. One was for actions in Matrix lands, one for actions in Late-Successional Reserves (LSRs), and one for Inventoried Roadless Areas (IRAs).

Five separate lawsuits were filed in the District of Oregon against these RODs. One filed by the American Forest Resource Council in July 2004 was dismissed in May 2005 (CV 04-6221-HO). Two of the lawsuits were consolidated (Siskiyou Regional Education Project, et. al., CV 04-3058-CO, and Wilderness Society, et. al., CV 04-3060-CO) and were decided in favor of the Forest Service. The consolidated SREP case was subsequently appealed to the Ninth Circuit. The lawsuit filed by the Forest Service Employees for Environmental Ethics (FSEEE) (CV 04-3061-HO) was dismissed in October 2005 and is now on appeal to the Ninth Circuit. The lawsuit from Cascadia Wildlands Project (CV 04-6440-TC) was decided in favor of the Forest Service on March 24, 2006. Litigation against the Bureau of Land Management concerning the Silver Hawk timber sale in Biscuit Fire Recovery Project (CV 04-3077-CO) was decided in favor of the BLM in October 2005.

After the RODs were signed, the Rogue River - Siskiyou National Forest successfully auctioned and awarded 12 fire salvage timber sales in Matrix and LSR lands. These totaled approximately 67 MMBF from 3,500 acres representing less than 1 percent of the area burned by the 2002 Biscuit Fire. Timber harvest from these 12 timber sales is about 47.1 million board feet to date. All but two of these sales (Indy and Lazy, with approximately 2 million board feet left to log) have been completed. Both of the remaining two are underway, though currently shut down for wet weather.

A set of timber sales was authorized under the ROD for salvage and planting in IRAs. Though authorized and planned under the Record of Decision, none of these sales have yet been offered. The large-tree volume remaining on some of the more readily available of these sale areas is still commercially viable. Two of these sales, Mike's Gulch and Blackberry are planned for sale and operations during 2006. These sales will be logged using helicopters only and will implement the full suite of design and operational mitigation measures applied in earlier sales and discussed herein.

Authorized projects other than timber sales, such as planting and road maintenance, are proceeding as funding is available and as timing is appropriate. Many of these projects will remain suitable and available for implementation for years to come.

II. CASCADIA'S REQUEST FOR SUPPLEMENTAL EIS

In a letter dated December 16, 2005, plaintiffs in the Cascadia Wildlands Project lawsuit (referred to in this evaluation as Cascadia) raised seven points they suggest constitute new information requiring preparation of a Supplemental EIS, per 40 CFR § 1502.9(c)(1)(ii). On February 23, 2006, they offered two reports for such consideration as well. On March 13, Cascadia submitted another report for consideration.

Forest Service policy for implementing regulations under the National Environmental Policy Act (NEPA) outlines a procedure for review of actions that are awaiting implementation when new information or changes occur and should be considered for correction, supplementation, or revision (FSH 1909.15, section 18).

Forest Service policy is to review new information received after a decision has been made. If new information or changed circumstances relating to the environmental impacts of a proposed action or decision come to the attention of the responsible or deciding official after a decision has been made and prior to implementation, the official must review the information carefully to determine its importance (FSH 1909.15, section 18.1).

If, after an interdisciplinary review and consideration of new information within the context of the overall project or decision, the Responsible Official determines that a correction, supplement, or revision to an environmental document is not necessary, implementation should continue and the results of the interdisciplinary review is to be documented in the project file (FSH 1909.15, section 18.1).

III. METHOD

An interdisciplinary team composed of the individuals listed below was convened on the Rogue River – Siskiyou National Forest to review the information from Cascadia:

Thomas Sensenig, PhD	Ecologist
Robert Shull	Wildlife Biologist, NEPA Planner
David Clayton	Wildlife Biologist
Paula Trudeau	Silviculturist
Nick Vagle	Silviculturist; Biscuit EIS Interdisciplinary Team member
Randall Frick	Fisheries Biologist
Chris Park	Hydrologist, Biscuit EIS Interdisciplinary Team member
M.J. Harvie	Fire and Fuels Forester
Mike Roney	Forester, Timber Sale Contracting Officer

The information was evaluated to determine whether it was sufficient (complete and accurate) to warrant consideration. If sufficient, the information was then evaluated to determine whether it was new, meaning it had not been considered in preparation of the Biscuit EIS. The information was determined not to be new if it was directly addressed by text in the Biscuit EIS. If the information was determined to be new, it was then evaluated as to whether it was relevant to the decisions yet to be made for the Biscuit Fire Recovery Project. The information was determined to be relevant to environmental concerns if it had a bearing on pending proposals or decisions about the actions and effects of the Biscuit Fire Recovery Project. If the information was determined to be new and relevant, it was to be further evaluated to determine if it was significantly different from the information that was presented in the Biscuit EIS.

This evaluation was written by lead authors Robert Shull and Tom Sensenig with technical input, review, comment, and edits from the other members of the team listed above.

IV. EVALUATION OF INFORMATION

a. The following numbered items correspond to Cascadia's numbering in their letters of December 16, 2005, and February 23, 2006.

(1) The issuance of waivers of the wet-season and wet-weather limitations on operations which were set forth in the FEIS.

Waivers of the wet-season and wet-weather limitations were issued in the administration of Biscuit timber sales because the weather was unseasonably dry. Allowances for operating in the wet season when the weather is unseasonably dry was discussed in the draft and final Biscuit EIS, particularly as it concerns Port-Orford cedar root disease.

The alternatives evaluated in the Biscuit FEIS considered operations that could introduce additional risk of root disease infection. These are mitigated with the application of management practices described in the EIS on pages II-49 through II-50. These mitigation measures address the scheduling of activities, washing of vehicles, and identification of travel routes to reduce risk of disease spread. The Best Management Practices listed in Appendix K also discuss mitigation and contain several references to hauling outside of the normal (dry) operating season: T-5, T-13, R-19, and R-20 (pages K-16, K-17, K-25, K-47, and K-49). The mitigation concerning scheduling states that operations may be permitted during periods of unseasonably dry weather outside of the normal operating period. It also defines indicators of wet weather as puddles and running water in ditch lines.

Issuance of waivers is routine practice within timber sale contract administration to authorize wet season operations, as discussed in the Biscuit EIS. With such waivers, however, mitigations such as vehicle and boot washing are also required. These practices along with wet-season and wet-weather shut downs of operations are also described in the Record of Decision for the Management of Port-Orford-Cedar in Southwest Oregon FEIS (*Record of Decision and Land and Resource Management Plan Amendment for Management of Port-Orford-Cedar in Southwest Oregon, Siskiyou National Forest*, pages 35 and 36; and *Final Supplemental Environmental Impact Statement, Management of Port-Orford-Cedar in Southwest Oregon*, Appendix 1, Port-Orford-Cedar Management Guidelines, pg A-12, VI, A & D), which was cited in the Biscuit EIS at page II-49.

There is no allegation that operations have been or are being conducted outside the seasonal limits as they are discussed in the Biscuit EIS. The actual issuance of waivers for wet-season logging and wet-weather limitations does not constitute new information or a changed circumstance because the provision for operations outside of the normal dry season were considered and documented in the Biscuit EIS.

(2) The discovery of at least two incidents of P.L. disease infestation.

The possibility of new *Phytophthora lateralis* disease infestations was considered and disclosed in the Biscuit EIS and ROD. The Biscuit EIS forecast that Port-Orford-Cedar root disease would likely spread (Biscuit EIS, III-150 and III-152). Incidents like these two were anticipated and thus do not constitute new information or a changed circumstance.

(3) The disparity between economic revenues predicted in the FEIS and those actually generated.

The reduction in revenue from the Biscuit timber sales between what was predicted in the Biscuit EIS and that which was ultimately recovered was primarily a result of two factors.

First was decay due to the passage of time, which reduced or eliminated the economic viability of logging on many acres. The second factor concerned a reduction of acres legally available for harvest when field verification revealed fewer acres available for harvest in Late Successional Reserves and Riparian Reserves than was predicted from the remote sensing data used in planning the Biscuit Project.

Economic revenues were predicted in the Biscuit EIS to decline over time because of decay in the wood between the fire in 2002 and ultimate recovery up until 20063. This decline was estimated to be up to 66% by 2006 (see Biscuit EIS, page III-401). Actual log measurements over the course of the Biscuit timber sales to date reflect a loss of up to 42% through the year 2005 with a projected ultimate loss up to 67% by the end of 2006. The realization of these losses is strikingly consistent with predictions in the Biscuit EIS and does not constitute new information.

Another factor that reduced harvest volume was the decrease in the number of acres logged from what was projected in the Biscuit EIS. The decisionmaker, however, foresaw the need to make adjustments during implementation, including an adjustment to the acres available for harvest, to "better meet unforeseen on-site resource management and protection objectives" (Records of Decision for the Biscuit Fire Recovery Project: page R-28 in the Matrix ROD, page R-30 in the Late Successional Reserve ROD, and page R-32 in the Inventoried Roadless Area ROD). While the scale of change was more than what was envisioned, the ultimate effect was a reduction in acres logged, with a corresponding reduction in effects overall, yet well within the range of effects described among alternatives in the Biscuit EIS. Because the volume being harvested is within the range of volumes considered in the Biscuit EIS, the difference between projected volume and actual volume harvested does not constitute new information.

(4) Illegal logging of live trees.

One instance of unauthorized felling of 121 green trees occurred on the Wafer Fire Salvage Sale on or about October 11, 2005. The Wafer project has already been completed. This activity was not part of or a change to the decisions made in the Biscuit Records of Decision. This unauthorized logging was the action of a private party whose performance is guided not by the Biscuit EIS or ROD but rather by the Timber Sale Contract. The contract and the Code of Federal Regulations (for example, 36 CFR Part 223) contain sufficient remedy to deter such future actions.

Adequate remedies for unauthorized felling are already in place through standard Forest Service timber sale contracts. No proposal is currently being considered and none is necessary to prevent or remedy unauthorized felling. With no proposal, there is no decision that a supplemental EIS could inform.

(5) Illegal logging in the Babyfoot protected botanical area.

The authorization of salvage of dead trees on approximately 16 acres within the Babyfoot Botanical Area was an error on the part of the Forest Service. This activity was not part of, or a change to, the decisions made in the Biscuit Records of Decision. This occurred when a boundary line was mistakenly delineated by a layout forester. This was not consistent with direction in the LRMP or the Biscuit FEIS and RODs. The harvested area had experienced 100% tree mortality from the fire. Less than five percent of the Botanical Area was harvested. Log-scale data revealed that fewer than five of the approximately 300 dead salvaged trees were fire-killed Brewer spruce, which is the species that this Botanical Area was established to protect.

Though this is new information, it has no relevance to the continued implementation of the Biscuit Records of Decision. The acres of unplanned cutting (fewer than 17) are far fewer than the scores of acres eliminated from salvage sales for reasons of decay and additional

resource protection needs. Thus the total number of acres actually affected by salvage logging in the watersheds containing and surrounding the Babyfoot Botanical Area is still well within the range of effects evaluated in Alternative 7. The ecological effect of the improper logging is not significant, nor is the logging of a Botanical Area relevant to actions yet to be implemented under the Records of Decision. Logging in Botanical Areas was not authorized originally, and that has not changed.

(6) Near total removal of trees and snags within areas of LSR in contradiction to the promise that the largest snags would be retained and presumption that 50% of the small (9-21 inch) snags would remain standing after logging.

The information suggested here as “new” is that actual logging of the Biscuit sales did not retain snags as prescribed in the Biscuit EIS. Cascadia suggests that the retention requirements included a promise that the largest snags would be retained and a presumption that 50% of the smaller snags would remain standing after logging. The claim here, however, provides no reference to a location where snag retention requirements were not met, or at which scale (per acre, per sale unit, or per sub-watershed).

There is no requirement that snags be left on every acre. Snag retention is described in the Biscuit EIS in Table G-10 starting on page G-20 and by the Forest Plan standards and guidelines. Table G-10 establishes different retention requirements for different plant associations, silvicultural prescriptions, aspect, and burn intensity. For example, the retention requirements for a dry Douglas fir stand on a north slope range from 1.5 per acre in areas where a ground fire burned through, to 5.1 per acre where the stands likely experienced a crown fire. Other plant associations call for even higher levels of snag retention.

The Forest Plan states that "Wildlife trees may be clumped where this technique is practicable, feasible, and meets the 60 percent standard" (Siskiyou National Forest Land and Resource Management Plan page IV-34). The 60 percent figure from the Forest Plan refers to a percentage of wildlife species' habitat capability, not the percentage of snags retained. The 50% figure from Biscuit EIS Table G-13 on page G-24 refers to the percentage of snags standing after harvest. This practice is authorized to provide the loggers the capability to comply with Oregon Occupation Safety and Health Code, Oregon Administrative Rules, Chapter 437-007-0200(2), 437-007-0225(2) and 437-007-0500(6)(a). The practical application of this standard and guideline is that snag retention requirements can be met by clumping them within protected riparian zones. There is no requirement that snag retention requirements be met uniformly across every acre. This practice was applied in the Biscuit salvage sale units.

The visual effect of this could be that some harvested units might appear to have a "near total removal of trees and snags" as described by Cascadia. Where snags are left, however, there is a requirement from the Biscuit EIS that the largest snags be left to meet the requirements (G-20). This was implemented and documented in pre-sale monitoring for snag retention. Modifications, such as swapping a designated tree for a different one to meet safety requirements, are documented in the sale inspection reports. No evidence is submitted as "new information" that this was not accomplished according to the standards established in the Biscuit EIS.

There is no standard that 50% of the small (9-21 inch) snags would remain standing after logging. The only reference in the Biscuit EIS to a 50% figure pertaining to small conifers occurs on page G-24 as a footnote to Table G-13. This footnote describes an assumption used in predicting a range of how many snags might be left standing following application of snag retention guidelines. It is not a retention guideline. Table G-13 does not establish snag retention guidelines. Table G-10 establishes snag retention guidelines.

The fact that some units appear to have no snags retained is not new information since snag retention requirements could be fully met in riparian zones and this "clumping" of snags to meet snag retention requirements was clearly authorized in the Forest Plan.

(7) Higher levels of natural regeneration than were assumed in the FEIS.

The potential for and the existence of ample natural regeneration for recovery purposes was recognized and considered in the Biscuit EIS. Page C-4 in the EIS displays the expectation of sufficient natural regeneration in many areas such that a reduction in acres proposed for replanting was made between draft and final. Page II-50 describes the process of completing reforestation exams prior to planting to "help determine IF there is a need to plant, how much to plant ... what species to plant ... etc." On page III-112, under "Comparison of Alternatives," Biscuit EIS states "revegetation in the majority of the recovery area will occur naturally."

The Biscuit FEIS states at page III-5:

Natural regeneration is common on the Rogue River-Siskiyou National Forest ... but is not usually a dependable method to quickly and adequately reforest a site

Regeneration is considered successful when there are adequate numbers of trees that are "free to grow" distributed in a manner that promotes the achievement of management objectives.

The Biscuit EIS did not make assumptions about the potential levels of natural regeneration. These levels are now being determined. Surveys are planned for 2007 (five years post-fire) to accurately determine levels of natural regeneration as described in the Biscuit EIS. None of this information is new because this is the process described in the Biscuit EIS for evaluating potential planting needs.

(8) Recent research reports and other papers concerning post-fire logging in the Biscuit fire area.

The first report considered is "Post-Wildfire Logging Hinders Regeneration and Increases Fire Risk" by Donato, Fontaine, Campbell Robinson, Kauffman, and Law (referred to as Donato et al.). The conclusions in this report, and an evaluation of those conclusions, follows:

(a) The median density of naturally regenerated Douglas-fir seedlings measured 767 seedlings per hectare two years after the fire.

The potential for and the existence of ample natural regeneration for recovery purposes was fully recognized and considered in the EIS. Page C-4 in the EIS displays the expectation of sufficient natural regeneration in many areas such that a reduction in acres proposed for replanting was made between draft and final. Page II-50 describes the process of completing reforestation exams prior to planting to "help determine IF there is a need to plant, how much to plant ... what species to plant ... etc." Page III-112, under "Comparison of Alternatives," states that "revegetation in the majority of the recovery area will occur naturally."

The fact of natural regeneration is not new information, and the fact that actual levels are now being determined is not new because this is the process for making decisions about replanting as it was set up in the Biscuit EIS.

(b) This density exceeds regional standards for fully stocked sites.

Regional standards for fully stocked sites are reflected in the Standards and Guidelines from the Siskiyou National Forest LRMP. Page IV-42 of the LRMP identifies a range of 125 and 150 trees per acre (313 and 375 trees per hectare) as required to meet minimum acceptable stocking levels.

Appendix D of the Biscuit EIS, at page D-18, describes a reforestation goal of 150-200 trees per acre (roughly 360 to 480 trees per hectare) at 15x15 foot spacing in the first year after salvage logging, displaying clearly the number of seedlings considered necessary for reforestation. Reforestation is again assessed five to six years later to ensure that 135 to 155 healthy and vigorous trees per acre, natural or planted, are present to restock the site. Any number that exceeds 480 trees per hectare would exceed reforestation goals.

Donato et al. reported the median of a broad range of densities of naturally regenerated seedlings on nine sites extrapolated from four 75m x 1m transects was 767 per hectare two years after the fire. This detailed knowledge of the methodology applied by Donato et al. comes from personal participation in study design and monitoring of the research in progress by Tom Sensenig, Ph.D., Ecologist on the Rogue River – Siskiyou National Forest and a lead author for this evaluation.

It cannot be determined from the information presented if stocking on the areas sampled meets or exceeds regional standards for fully stocked sites because enough time has not passed. Seedling density is the total number of seedlings per area. However adequate stocking is dependent on a sufficient number of seedlings adequately distributed across the acreage, as stated in the Biscuit EIS, page III-5. The median data point of 767 seedlings extrapolated from transects in this study may have been clumped in a manner such that even that amount of natural regeneration might not achieve reforestation goals. The paper does not provide any information on site stocking, a measure of the percent of the area having seedlings with the potential to survive. The seedling data in this study was extrapolated from transects rather than from plots that correspond to a measure of stocking. Tree spacing, survival and/or the distribution of seedlings cannot be determined in this way because transects do not yield data on distribution of seedlings, thus no conclusions about stocking adequacy can be made from this report. Plot surveys would be needed. This information is insufficient to determine whether it is new or relevant to the Biscuit Project.

(c) Post-fire logging subsequently reduced this density to 224 seedlings per hectare due to soil disturbance and physical burial by woody material.

Again, adequate stocking cannot be determined from this report. Even so, the potential for a reduction in natural seedlings from salvage logging by mechanical damage was recognized and discussed in the Biscuit EIS as a need for planting. Page III-111 includes a section on "Unsatisfactorily stocked salvage units" which states that "salvage harvest affects stocking by killing or damaging young conifer germinants. It may delay re-establishment of conifers if the first cohort is damaged." Loss of seedlings from logging activities is not new information.

(d) Post-fire logging significantly increased both fine and coarse downed woody fuel loads comprised of unmerchantable branches.

The fact that salvage logging creates fuels was considered in the Biscuit EIS. In chapter 2, page II-48, the mitigation measure of treating such fuels where necessary was described. Pages III-60 through III-69 discusses in detail the effects of such fuel treatments and how they will be accomplished. Appendix B is devoted entirely to fuel treatments. Page B-15, as one example, displays the assumptions regarding tons per acre of fuel created by salvage logging. This is not new information.

The authors also state that funding is often limited for post-logging fuel treatments. The Biscuit EIS considered this as well in the assumption established on page III-61 that if brush disposal (BD) "fund availability was inadequate to accomplish the level of treatment recommended, then appropriated hazardous fuels reduction funds would fund the difference." A potential shortage of fuel treatment funding is not new information.

The second report is titled "The Facts and Myths of Post-Fire Management: A Case Study of the Biscuit Fire, Southwestern Oregon," by Dominick A. DellaSalla, Greg Nagle, James R. Karr, Rich Fairbanks, Dennis Odion, Jack E. Williams, Chris Frissel, and Timothy Ingalsbee (referred to as DellaSalla et al.).

This report is the result of a "three-day workshop on the Biscuit logging project with researchers having extensive background in disturbance ecology and field studies within the Biscuit and other fire areas to examine key assertions related to post-fire landscapes in general and post-fire logging in particular" (DellaSalla et al., page 2).

This report "used literature review, preliminary field work, and extensive photo documentation of Biscuit logging units to refute suppositions used to justify post-fire logging and related management" (DellaSalla et al., page 2). DellaSalla et al. included no data collection and states as its purpose the refutation of arguments favoring post-fire logging.

DellaSalla et al. list what they portray as seven "key findings." Their "key findings" are listed below in the form of refutations to what they refer to as "assertions surrounding post-disturbance logging" (DellaSalla et al., page 5). To effectively evaluate the information presented by DellaSalla et al., each of their seven assertions, with their associated "findings" is quoted, followed by an evaluation:

(1) Assertion: Post-fire logging is a restorative action.

Finding: Post-fire logging and associated slash treatment often harms regenerative processes by compacting soils, removing biological "legacies," delivering excessive sediments to aquatic systems, and introducing additional disturbances when regenerating forest are most vulnerable.

Post-fire logging in the Biscuit Fire area was not proposed as a restorative action. It was proposed primarily for the recovery of economic value (Biscuit EIS page I-10), and secondarily for the generation of revenue to accomplish proven restorative actions such as road decommissioning, seeding, replanting, and noxious weed treatments.

Post-fire logging was not characterized in the Biscuit EIS as necessary for restoration. The effects of post-fire logging (and logging in general) described in the research cited by DellaSalla et al. were well-recognized in the EIS and thus led to the requirement for mitigation measures (page II-48 through II-54) and best management practices (Appendix K). The potential for adverse effects from post-fire logging is not new information.

(2) Assertion: Tree planting linked to post-fire logging is essential to post-fire regeneration.

Finding: Restocking with conifers after logging does not offset the negative effects associated with logging activities.

The Biscuit EIS did not propose salvage logging on the premise that post-fire logging is essential to post-fire regeneration. The EIS stated that recovery of economic value was the purpose behind salvage logging. Likewise, the Biscuit EIS did not propose restocking with conifers as an offset to the effects of logging. The mitigation measures required in the Biscuit EIS were designed to minimize those effects.

This report cited the Donato et al. report (also evaluated above) to make the point that natural regeneration will occur apart from post-fire logging. As discussed in the review of the paper from Donato et al., above, the Biscuit EIS recognized the probability that the Biscuit Fire area may have areas that adequately regenerate naturally. The reports cited by DellaSalla et al., describing natural regeneration on burned areas, offer nothing new that was not factored into the EIS.

According to the Biscuit EIS, 94 percent of the acres burned will be left to natural regeneration processes. The Biscuit EIS, page I-1, shows the acres burned and the Biscuit RODs show the acres authorized for planting. Planting will occur primarily in salvage units, but also in other areas where stocking exams reveal that natural regeneration is found to be inadequate.

Research is also cited concerning the ecological value of early successional shrub species. This research dates from 1978, 1994, and earlier and forms some of the body of knowledge applied by forestry professionals routinely in the Forest Service today. It is not new, and is inherent in points made in the Biscuit EIS (e.g. III-87; III-106).

More recent research is cited (Muir, 2002; and Sessions, 2003) that, though more recent in date, simply reference findings well understood from abundant earlier research that "even-aged management has been associated with low levels of wildlife diversity" (DellaSalla et al., page 9), and that an early-established stand of young conifer trees can "abbreviate the period of high abundance for hardwood trees, shrubs, grasses, and forbs" (DellaSalla et al., page 9). This information is not new; it too forms some of the body of knowledge routinely considered and applied by forestry professionals today and is inherent in points made in the Biscuit EIS (for example, pages III-168 and III-108 through III-112).

Information that artificial regeneration is unnecessary for post-fire restoration was understood and referenced in the Biscuit EIS. It is not new information.

(3) Assertion: Post-fire logging accelerates return of old-growth after fire.

Finding: Forest landscapes are degraded (not restored) by salvage logging and the return of old growth forest is delayed.

The Biscuit EIS did not claim as a purpose and need that post-fire logging accelerates return of old growth after fire. The EIS stated that recovery of economic value was the purpose behind post-fire logging.

DellaSalla et al. state that post-fire logging targets the largest trees for their commercial value, depriving post-fire forests of these "biological legacies" essential to the regeneration of complex forests. Though not clear in the report, loss of biological legacies appears to be the support for their finding that logging delays the return of old growth.

The Biscuit EIS recognized the value of these snags (III-15, III-67, G-1, and G-2) and the potential effects of post-fire logging on them. Mitigation measures were thus prescribed that required retention of such "legacies" throughout the 4% of the fire area that was proposed for harvest. Appendix G was devoted entirely to this matter to ensure adequate standing and down dead wood would be retained. A review of the literature cited in Appendix M reveals such report titles as: "Disturbance and Structural Development of Natural Forest Ecosystems with silvicultural implications, using Douglas-fir forests as an example," "Fire Regimes, Fire History, and Forest Conditions in the Klamath Siskiyou Region," "Environmental Effects of Post-fire Logging: Literature Review and Annotated Bibliography." The fact that logging has the potential to eliminate "biological legacies," and that such a loss could delay the re-establishment of old growth, is not new information. This information was considered and mitigation measures were established to counter these effects.

(4) Assertion: Post-fire logging reduces future wildfire hazard.

Finding: Post-fire logging often increases hazardous fuels.

The authors' point here, that post-fire logging increases fuel loading, is based primarily on references from Donato et al., evaluated above. The creation of fuels by post-fire logging was discussed in the Biscuit EIS, as referred to above. The EIS prescribed fuel treatments where reduction of fuels created by logging is needed. Inherent in the Biscuit EIS rationale that post-fire logging reduces future wildfire hazard is that effective treatment of fuels created by such logging would be accomplished (III-60). This is not new information.

(5) Assertion: Burned landscapes are biological deserts, moonscapes, or wastelands.

Finding: Naturally regenerating landscapes following fire are some of the richest habitats in the Pacific Northwest.

The Biscuit Fire area was not a moonscape, wasteland, or biological desert. This was known to the writers of the Biscuit EIS. For example, Biscuit EIS, page III-153, says that fire destroys as well as creates habitats, that "hardwood shrubs had begun to vigorously re-sprout and some showed evidence of browsing by ungulates" and that "the Biscuit Fire rejuvenated a number of meadows (prairies) that had been encroached upon by trees and shrubs during decades of fire suppression."

DellaSalla et al. cite Franklin and Agee, 2003. This report is also cited in the Biscuit EIS (M-9). DellaSalla et al. cite other research and reports that post-date the Biscuit EIS and describe the varied species that occupy post-fire habitats. That different species occupy differing habitats and differing seral conditions is not new information (Siskiyou NF LRMP pages III-101-117) and is so well understood as to form some of the fundamental body of knowledge routinely considered by Forest Service resource specialists. This is not new information.

(6) Assertion: Post-fire logging returns money to federal coffers.

Finding: post-fire logging in remote areas is a money loser for taxpayers when costs of salvage are fully considered.

In responding to this assertion the authors cite evidence that "the market for federal timber has declined" This decline was discussed in the Biscuit EIS on pages III-390 through III-391. The authors continue to assert that there is limited demand for burned timber to be logged by helicopter or long-reach cable. This potential was considered on page III-401 through III-404 of the Biscuit EIS where the analysis discusses logging costs, and the potential that "units requiring helicopter logging for distances greater than one mile on average may cost the purchaser more to log than they would receive at the mill", and the concept that "net value by logging system" might be an "indicator of potential stumpage that a purchaser would pay for the trees." The analysis also displays effects of excluding units with negative logging costs (Table III-168). These points are not new.

DellaSalla et al. then state that Biscuit was a "money loser when the costs of salvage are fully considered." The analysis the authors present differs from that displayed in the Biscuit EIS. The table below displays the factors and costs considered in the Biscuit EIS economic evaluation and the factors included by DellaSalla et al.:

Economic variables considered	
Biscuit EIS, Table III-123 (page III-403)	DellaSalla et al. (pages 16-19)
Logging cost (\$319/mbf)	Logging cost (cost not identified)
Sale Prep, Admin Support (\$32.5/mbf)	Sale Preparation and Sale administration (\$84/mbf),
Site prep and planting (\$17.1/mbf)	Tree Planting (\$947/acre)
Fuel Treatment (\$18.65/mbf)	post-logging cleanup (\$164/mbf)
Temporary roads and landings (\$1.88/mbf)	slash treatment and roads (cost not identified)

	25% paid to counties (total amount not identified)
	writing environmental impact statements (\$5.8 million)
	Timber-related overhead in Regional and Washington Offices (\$16/mbf)

Potential new information from DellaSalla et al. can come from three places: 1) different cost figures applied to items considered in both analyses; 2) additional points of analysis displayed by DellaSalla et al. but not included in the Biscuit EIS analysis; and 3) the conclusion that the Biscuit sales were money losers.

First, DellaSalla et al. appear to use the cost figures from Robert Wolfe in their conclusion that there was a total loss of \$14.6 million from the Biscuit timber sales (DellaSalla et al., page 19), though that is not clear. The Wolfe reference cited by DellaSalla et al. comes from a letter sent by Wolfe to Rogue River-Siskiyou National Forest Supervisor Scott Conroy dated January 17, 2004.

The source of cost estimates in the Biscuit EIS is described on page III-401, with unit costs available in the Biscuit project record (page III-401). These were the best figures available from local experience, and actual costs and returns for particular harvest units were expected to vary (III-402). This is not new information. It was available and considered at the time the Final EIS was being prepared. The Forest Supervisor chose to use costs derived from local experience over those provided by Wolfe.

The figure used by DellaSalla et al. for planning (which was not included in the Biscuit EIS economic analysis) differs from that on record at the Rogue River-Siskiyou National Forest. Costs for planning are reported by DellaSalla et al. as being \$5.8 million (DellaSalla et al., page 18). Records at the Rogue River-Siskiyou National Forest headquarters reveal that only \$3.3 million was spent on planning for restoration activities (including salvage).

Second, the additional points included by DellaSalla et al. (25% funds, planning costs, and RO/WO overhead) were understood but not included (Richard Phillips, Economist on the Biscuit Interdisciplinary Team - personal communication) in the Biscuit EIS because:

- The 25% fund to counties were not to be deposited into the National Forest Fund from these sales;
- RO/WO overhead is a 'sunk cost' that would have been incurred whether or not any salvage sales from the Biscuit fire had been sold;
- Planning is also a 'sunk cost' that would have been incurred regardless of how much, if any, volume was sold; and
- Planning and RO/WO overhead costs are paid for from appropriated funds and trust funds and are not chargeable to Biscuit salvage sale receipts. It is inappropriate to tie them to a cost per mbf.

Third, the profit/loss conclusions presented in this paper is new, because it has been generated since the Biscuit EIS was written and includes numbers different from what were used in the EIS. The conclusion that DellaSalla et al. make, that the Biscuit sales are money losers, is based, however, on their accounting using figures which cannot be shown to be more accurate than those used in the Biscuit EIS, and includes variables the Forest Service does not feel is appropriate to include in such an analysis. The Biscuit EIS predicted that average receipts for Alternative 7 would be approximately \$37 per thousand board feet (Table III-166, page III-401). Actual figures from the Biscuit Timber sales reveal that sales from Matrix and LSR salvage sales yielded receipts of \$47.66 per thousand board feet (\$2.24 million received divided by 47 million board feet of volume hauled) demonstrating that actual figures were generally accurate,

though yielding a higher return than predicted in the EIS, not less, as concluded by DellaSalla et al. The acres logged to date have had a positive net return using the accounting described in the Biscuit EIS.

Economic recovery of fire killed trees was pursued as a goal in the Biscuit Fire Recovery Project for two reasons: to promote the stability of local communities and to provide funds for restoration activities such as reforestation, road maintenance and decommissioning; noxious weed treatments; trail maintenance and reconstruction; and meadow restorations. It was not the purpose of Biscuit post-fire logging to "return money to federal coffers."

Under this section, DellaSalla et al. also discuss logging effects along the T.J. Howell Memorial Road. These effects were considered and discussed in the Biscuit EIS, Chapter III, on pages 293, 311, 312, 374, and 375. This is not new information.

(7) Assertion: Public participation delays salvage logging.

Finding: Public participation is important in forest management decisions.

This assertion was neither an assumption underlying the proposed Biscuit Project, nor a consequence of the Biscuit Project that was analyzed in the Biscuit EIS. It was not a consideration for any action authorized in the Records of Decision for the Biscuit EIS, and thus has no relevance to decisions that were made or are yet to be made.

(b) The third report is titled "Ecological Science Relevant to Management Policies for Fire-Prone Forests of the Western United States" authored by Reed F. Noss (editor), Jerry Franklin, William Baker, Tania Schoenagel, and Peter B. Moyle (February 2006) (cited as Noss et al.).

This report is characterized by its authors as a "review" that "addresses the ecological science relevant to developing and implementing forest restoration and fuel management policies, including activities conducted before, during, and after forest wildfires" (Noss et al., page 1).

This report contains an executive summary, a general discussion of the ecology of natural wildfire and its ecological functions, and "Key Findings" for management considerations before, during and after wildfire. For the purposes of this evaluation, the "Key Findings" concerning "Forest Management After Wildfire" (page 8 through 11) were considered, along with points made in the text associated with each finding. This is the section of Noss et al. that relates to the analysis of impacts in the Biscuit EIS.

(1) Research by both ecologists and foresters provides evidence that areas affected by large-scale natural disturbances often recover naturally.

The potential for adequate natural regeneration for ecological recovery was fully recognized and considered in the Biscuit EIS. Page C-4 in the EIS displays the expectation of sufficient natural regeneration in many areas such that a reduction in acres proposed for replanting was made between draft and final. Page II-50 describes the process of completing reforestation exams prior to planting to "help determine IF there is a need to plant, how much to plant ... what species to plant ... etc." Page III-112, under "Comparison of Alternatives," states that "revegetation in the majority of the recovery area will occur naturally."

Likewise, the potential for the Biscuit Fire area to recover naturally to a closed canopy forest at "varying rates" was recognized and discussed in the Biscuit EIS at pages I-9, III-5, and III-14-15.

The Biscuit EIS did not make assumptions about the potential levels of natural regeneration. These levels are now being determined. Surveys are planned for 2007 (five years

post-fire) to accurately determine levels of natural regeneration as described in the Biscuit EIS. None of this information is new because this is the process described in the Biscuit EIS for evaluating potential planting needs.

(2) Post-fire logging does not contribute to ecological recovery; rather it negatively impacts recovery processes, with the intensity of such impacts depending on the nature of the logging activity.

As discussed in the consideration of DellaSalla et al., above, the Biscuit EIS recognized clearly that post-fire logging would have effects detrimental to ecological recovery. These effects are described in detail in the EIS, Chapter III. This recognition is also evidenced by the mitigation measures and Best Management Practices prescribed for the project (page II-39 through II-54 and Appendix K). Much emphasis is placed on protection of riparian areas (II-41 - II-46) and retention of standing and down dead wood (Appendix G), consistent with Noss, et al. (Page 9). This is not new information.

(3) Post-fire logging destroys much of whatever natural regeneration is occurring on a burned site.

The potential for a reduction in natural regeneration from salvage logging by mechanical damage was recognized and discussed in the Biscuit EIS as a need for planting. Biscuit EIS, page III-111, includes a section on "Unsatisfactorily stocked salvage units" which states that "salvage harvest affects stocking by killing or damaging young conifer germinants. It may delay re-establishment of conifers if the first cohort is damaged." Loss of seedlings from logging activities is not new information.

(4) Evidence from empirical studies is that post-fire logging typically generates significant short- to mid-term increases in fine and medium fuels.

The fact that salvage logging creates fuels was considered in the Biscuit EIS. In Chapter II, page II-48, the mitigation measure of treating such fuels where necessary was described. Pages III-60 through III-69 discusses in detail the effects of such fuel treatments and how they will be accomplished. Appendix B is devoted entirely to fuel treatments. Page B-15, as one example, displays the assumptions regarding tons per acre of fuel created by salvage logging. This is not new information.

Noss et al. emphasize the importance of large wood in ecological recovery. The importance of large wood in ecological recovery was considered and addressed in the Biscuit EIS in II-47, III-167, 172, 182-184, and Appendix G. This is not new information.

(5) In forests subjected to severe fire and post-fire logging, streams and other aquatic ecosystems will take longer to return to historic conditions or may switch to a different (and often less desirable) state altogether.

The Biscuit EIS recognized the importance and sensitivity of riparian areas as demonstrated in pages II-37, II-41 through II-46, II-49, and III-199 through III-291. The issue was addressed by requiring the protection (no logging, broadcast burning, or slash piling) of all riparian areas, and rock surfacing of roads where sediment could be a concern. Buffers of 174 feet on each side of streams were prescribed (III-205, III-211, and III-264). The effectiveness of these buffers to achieve riparian resource protection (determined by monitoring the effectiveness of such buffers on past fires in the same area) was discussed in the Biscuit EIS on page III-230.

The sensitivity and importance of riparian areas, and the need to protect them is not new information.

(6) Post-fire seeding of non-native plants generally damages natural ecological values, such as reducing the recovery of native plant cover and biodiversity, including tree regeneration.

The undesirable effects of post-fire seeding of non-native plants was recognized in the Biscuit EIS (page I-24 & 25) and mitigated by requiring the use of local stocks of native plant seed when they are practical and available (II-52). This is not new information.

(7) Post-fire seeding of non-native plants is often ineffective at reducing soil erosion.

Noss et al. discuss aerial seeding following wildfire for erosion control purposes. The activities described and proposed in the Biscuit Fire Recovery Project do not include these actions. The authors' findings here, therefore, are not relevant to the impacts analyzed in the Biscuit EIS.

(8) There is no scientific or operational link between reforestation and post-fire logging: potential ecological impacts of reforestation are varied and may be either positive or negative depending upon the specifics of activity, site conditions, and management objectives. On the other hand, ecological impacts of post-fire logging appear to be consistently negative.

As discussed above in consideration of the Donato et al. and DellaSalla et al. reports, the Biscuit EIS did not propose post-fire logging on the premise that post-fire logging is essential to post-fire regeneration. The EIS stated that recovery of economic value was the purpose behind salvage logging.

The authors suggest that logging and reforestation be considered separately. The Biscuit EIS does not link the two. The need to plant is not based on the presence of salvage logging, but rather the need to augment naturally-occurring regeneration as determined by site specific reforestation exams (II-50). Additionally, the EIS proposes planting (if necessary) in many areas where salvage logging is not proposed (Pages I-21 and II-37).

As discussed in the review of the paper from Donato et al., above, the Biscuit EIS recognized the capability of the Biscuit Fire area to regenerate without the need to plant every acre. The information is not new. According to the Biscuit EIS, 94 percent of the acres burned will be left to natural regeneration processes (the Biscuit EIS, page I-1, shows the acres burned and the Biscuit RODs show the acres to be evaluated for artificial regeneration needs).

(9) Accelerated reestablishment of extensive closed canopy forest conditions after fire is usually not an appropriate objective on sites managed with a major ecological focus.

This "finding" is more accurately described as a proposed policy position, rather than a finding based on scientific research. Noss et al. argue against "rapid and complete reforestation except where the primary goal is wood production" (page 10). This evaluation is not intended to consider policy recommendations. The Biscuit Fire Recovery Project was designed to implement policy as it now exists (I-1, and I-13 through I-15).

The Biscuit EIS does, however, discuss the values described here by the authors (pages I-23 and III-12) and the disagreement among "well-known Northwest scientists" concerning the most beneficial approach to post-fire management (III-12). It also displays different planting prescriptions based on different land allocation objectives across the fire area (D-16 through D-23). This information in Noss et al., therefore, is neither relevant to the effects of the Biscuit Project, nor new.

(10) Where timber production, other societal management goals, or special ecological needs are the focus, planting or seeding some native trees and other plants using local seed sources may be appropriate.

This is the proposal advanced in the Biscuit EIS. It is consistent with Noss et al., who advocate planting or seeding to restore uncommon plant species or habitat for a threatened or endangered species. The Biscuit EIS proposes planting in Late-Successional Reserves to accelerate a return to habitat with optimum characteristics (primarily large trees, rather than a closed canopy forest as discussed above) for late-successional forest species (I-3). This is the primary objective for Late-Successional Reserves. Planting was proposed in Matrix lands where stands are to be managed to maintain vigor and growth for timber sales on a non-declining even flow basis (I-4). Special ecological needs were recognized on page II-37 where disease-resistant Port-Orford cedar, western white pine, and sugar pine were prescribed; and where deciduous oak and sugar pine were called for to help restore "cultural landscapes and wildlife habitat." The value of this approach is not new.

(c) Other sources of new information.

The authors of this evaluation are professionals in wildlife, fisheries, fuels, and forest management, and continually review research reports and publications in their respective fields. None of the information submitted by Cascadia, and no information that the Forest has otherwise become aware of, is significantly different from information presented in the Biscuit EIS.

V. CONCLUSIONS

The information submitted by Cascadia does not present a substantially different picture of the environmental consequences of the Biscuit Fire Recovery Project from what was already presented and considered in the Biscuit EIS. None of the information submitted by Cascadia shows that the remaining actions for Biscuit Project will affect the quality of the human environment in a significant manner or to a significant extent not already considered in the Biscuit EIS.

The Forest made no substantial changes to the Biscuit Fire Recovery Project since the Biscuit EIS was filed and RODs were signed that are relevant to environmental concerns. Unauthorized logging of green trees in the Wafer project was not an example of changes to the Project, but instead was an error on the part of the timber purchaser. Likewise, erroneous marking in the Babyfoot Botanical Area was not an example of changes to the Project, but instead was an error on the part of the Forest Service. Neither error is continuing.

Most of the information evaluated was determined not to be new because it was, in some fashion, considered in the Biscuit EIS. Other items reviewed were either not relevant (*e.g.*, "aerial seeding of non-native grasses") or not of sufficient specificity to meaningfully assess.

Only one item was considered to be "new information" — the calculation in the DellaSalla et al. report that concluded that there was a loss of \$14.6 million from the Biscuit timber sales. This conclusion however, was based on cost estimates that were less accurate than those used in the Biscuit EIS and included variables inappropriate for such an analysis. The information in DellaSalla et al. constitutes, at best, a difference of opinion from that of the Biscuit EIS preparers concerning how profit or loss might be calculated. The authors of this evaluation conclude that DellaSalla et al. included inappropriate variables and less accurate cost data than what was used in the Biscuit EIS. For these reasons the conclusion in DellaSalla et al.

about the profitability of the Biscuit Project should not replace or supplement the analysis in the Biscuit EIS.

Rogue River - Siskiyou National Forest professionals in wildlife, fisheries, fuels, and forest management continually review research reports and publications in their respective fields. The authors of this evaluation conclude that none of the information submitted by Cascadia shows that the effects of the Biscuit Project are significantly different from what was described in the Biscuit EIS.

None of the information submitted by Cascadia, and no information that the Forest has otherwise become aware of, that has been found to be sufficient for evaluation was found to be new and relevant and significantly different from information presented in the Biscuit EIS.

