California Regional Water Quality Control Board
North Coast Region
Dennis Leonardi, Chairman

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Alan C. Lloyd, Ph.D.
Agency Secretary

Arnold Schwarzenegger
Governor

February 9, 2006

Mr. George D. Gentry
Executive Officer
Board of Forestry and Fire Protection
Post Office Box 944246
Sacramento, California 94244-2460

Subject: Comments on the Draft Environmental Impact Report for the Draft Jackson Demonstration State Forest Management Plan, SCH# 2004022025

File: Timber, General

Dear Mr. Gentry:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report (DEIR) for the Jackson Demonstration State Forest (JDSF) Management Plan (DFMP).

My staff and I met with Russ Henly, Mark Jameson, Pete Cafferata, and Chris Keithley of your staff during our review to gain perspective on the overall project and to communicate with your staff regarding our comments and concerns at that point. Subsequently, my staff has reviewed the pertinent portions of the DEIR and offer both general and specific comments, enclosed with this letter.

If you or your staff have any questions regarding our comments or need more information, please contact David Fowler of my staff at 707-576-2756 or his supervisor, Christine Wright-Shacklett at 707-576-2686. For questions regarding the TMDL Action Plans for the Big and Noyo River watersheds, please contact Lauren Clyde at 707-576-2674.

Sincerely,

Robert Klamt
Chief, Timber Harvest Division

Enclosures: Memo from David Fowler, Staff review of the Jackson Demonstration State Forest Draft EIR and Draft Management Plan

Water Quality Control Plan for the North Coast (Basin Plan)
Chapter 2. Beneficial Uses

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Arnold Schwarzenegger
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February 9, 2006

To: Robert Klamt
Chief, Timber Harvest Division

From: David Fowler
Representing review staff

Subject: Staff review of the Jackson Demonstration State Forest Draft EIR and Draft Management Plan

General Comments

The DEIR contains many commendable goals and objectives consistent with the Jackson Demonstration State Forest primary purposes. In general, Regional Water Board staff recommend that the goals and objectives listed throughout the DEIR also recognize the need to protect all beneficial uses of water and comply with water quality objectives in accordance with the Water Quality Control Plan for the North Coast Region, also known as the Basin Plan. For example, the objectives under Goal #3, Watershed and Ecological Processes, should be expanded to include protection of the beneficial uses of water designated in the Basin Plan. The beneficial uses of water of the Noyo and Big Rivers identified in the Basin Plan are shown on Table 2-1 of the Basin Plan (Attachment).

As mentioned in the DEIR, the Big River and Noyo River are both listed under Section 303(d) of the federal Clean Water Act as impaired due to excessive sediment. Big River is also listed as impaired due to elevated temperatures. The U.S. Environmental Protection Agency (USEPA) has established Total Maximum Daily Loads (TMDLs) for sediment in both the Big River watershed and the Noyo River watershed.

The JDSF DEIR should lead to compliance with TMDLs for Noyo and Big Rivers. TMDL implementation should be clearly incorporated into the Management plan for JDSF. A suite of instream and upslope watershed targets are included, because no single water quality target adequately describes water quality related to sediment. When considered together, the targets are expected to provide an accurate indication of the condition of the stream, including evidence of attainment of water quality objectives, and protection of beneficial uses. Appropriate monitoring and analysis may lead to the future refinement of these targets.

Many of the water quality targets also serve as numeric surrogates for the mostly narrative sediment-related Water Quality Objectives contained in Chapter 3 of the Basin Plan. Sediment-related water quality objectives include suspended material, settleable material, sediment, and

turbidity. The parameters listed as targets are likely to respond more rapidly than water quality objectives to changes in water quality from management activities, and trends will be more easily discerned. The exception is turbidity, which is a sensitive measure of the effects of land use on streams.

The general policy of the North Coast Regional Water Quality Control Board is to reduce sediment input levels to the those suggested by the TMDL, which in the case of the Noyo River is a decrease of 27 percent to an average sediment delivery rate equivalent to not more than an average of 475 tons per square mile per year.

Due to limited salmonid population data and the heavy disturbance in the watershed prior to the collection of sediment yield data, a time period reflective of reference conditions is not available for JDSF. Therefore, the sediment reduction is only a conservative starting point to stimulate positive changes and response in the channel.

It is important that the DEIR recognize the following previously adopted water quality programs and policies that apply in the north coast region and to the water bodies in the JDSF. In 2004, the Regional Water Board adopted the state and federal Anti Degradation Policies into the Water Quality Control Plan to ensure the retention of high quality waters that are not currently listed as impaired. Also in 2004, the Regional Water Board adopted the Resolution R1-2004-0087, Total Maximum Daily Load Implementation Policy Statement for Sediment Impaired Receiving Waters in the North Coast Region. In 2005, the State Water Resources Control Board adopted a new Nonpoint Source Policy that applies to all new projects that may have result in pollutant discharges to waters of the state.

Currently, the Regional Water Board is developing a new region-wide Sediment Amendment as well as a Stream and Wetland Protection Policy for consideration of adoption into the Water Quality Control Plan (Basin Plan). These additions to the Basin Plan are being designed to address sediment and temperature pollutants affecting water quality.

Specific Comments

The following relate to specific sections of the DEIR. Each comment is referenced to the corresponding DEIR section and page number.

Re: Section III.2, Goals and Objectives, Goal #3 (p. III-4)
The objectives in this section should include the protection of the beneficial uses of water, and where water quality is limited, strive to meet water quality standards while achieving other goals and objectives of the JDSF.

Re: Section III.2, Goals and Objectives, Goal #6 (p. III-6)
The objectives specified in this section should be expanded to recognize the need to update the DFMP so that it complies with the Anti Degradation Policy, the TMDL Implementation Policy Statement for Sediment Impaired Receiving Waters, the Nonpoint Source Policy, and the Sediment Amendment and the Stream and Wetland Protection Policy, upon final approval and adoption into the Basin Plan.

Re: Section IV.3.2, Decisions and Approvals Subsequent to Management Plan (pp. IV-3-IV-4)
In September 2003, a timber harvest plan (THP 1-03-093 MEN) located within the JDSF was submitted for review and comment. Regional Water Board staff concluded that the THP did not appear to be written in a manner that was consistent with the overall proposals and objectives of the JDSF Management Plan or the Forest Practice Rules. The DEIR should further discuss how the timber harvest planning process will be written and implemented in a manner that is consistent with the overall objectives of the Management Plan.

Re: Section VI.3, General Description of Alternatives (pp. VI-8-VI-13)
The chosen alternative should incorporate a primary management approach to protect all beneficial uses of water. Only Alternative E already recognizes the protection of water quality as a primary management goal.

Re: Class III Watercourses - Section VII.6.1.12, Habitat Protection (pp. VII.6.1-91- VII.6.1-92) and Section VII.6.1.16, Project Impacts (pp. VII.6.1-99- VII.6.1-111) and Section VII.7.2.4, Geomorphic Processes: Surface Erosion and Mass Wasting (p. VII.7-7-VII.7-11)
While Class I and Class II watercourse protection measures include significant conifer retention standards and other protection measures to partially address protection of watersheds with threatened and impaired conditions, Class III protection measures are limited to providing only equipment limitation zones (ELZs) as defined in the Forest Practice Rules. The DEIR does not appear to acknowledge that under certain circumstances, Class III canopy retention standards may be necessary to mitigate or avoid impacts to downstream Class I and Class II watercourses from specific projects (such as increased sedimentation or bank and channel instability resulting from altered flow patterns). Such mitigation measures do not appear to have been considered in evaluating project impacts under Section 6.1.16. The Section 7.2.4, Harvest Area Surface Erosion, acknowledges one adverse impact where "The harvest-and site preparation-related impacts on surface erosion are greatest at the heads of Class III watercourses, where increased surface runoff causes uphill migration of the definable watercourse into previously unchanneled portions of the headwall swale (Lewis, 1998)." The DEIR and DFMP should address Class III watercourse-specific concerns for increased surface erosion or altered hydrologic effects that may result in channel instability or increased sedimentation. The DEIR and DFMP should then provide for increased Class III protection measures such as canopy retention standards where needed to avoid or mitigate the project impacts and achieve recovery of impaired water bodies.

Re: Road Management Plan, Inventory - Section VII.6.1.12, Habitat Protection (p. VII.6.1-93)
The Road Management Plan, as described in the DEIR, states that all existing roads will be inventoried within the first five years, with a proposal to accelerate that to three years, but does not clearly articulate the schedule for implementing road repairs and road abandonment projects identified in the road inventory. In addition to roads, skid trails also contribute sediment to watercourses, especially at watercourse crossings or where gully and rill erosion along old skid trails intersect a watercourse. Regional Water Board staff recommend the DEIR and DFMP consider an expanded evaluation of skid trail erosion sites as a part of the road inventory to ensure that significant discharges of sediment to watercourses are addressed.

Re: Road Management Plan, Use Restrictions - Section VII.6.1.12, Habitat Protection (p. VII.6.1-93)

The use restrictions for wet weather operations specified in the DEIR may not be adequate to avoid significant sediment inputs which will further impair water quality. Regional Water Board staff recommend the exclusion of heavy equipment operations during the winter period unless necessary for emergency access.

Re: Road Management Plan, Abandonment - Section VII.6.1.12, Habitat Protection (p. VII.6.1-94)

Regional Water Board staff recognize the important criteria listed in the DEIR to abandon roads in close proximity to Class I watercourses with anadromous fish habitat. In addition, Regional Water Board staff recommends that the criteria used to identify and prioritize roads for abandonment should include those roads that are actively discharging sediment or threaten to discharge sediment into any watercourse, further impairing the beneficial uses of water.

Re: Section VII.6.1.4, Monitoring and Adaptive Management, Stream Channel Conditions - Section VII.6.1.12, Habitat Protection (pp. VII.6.1-95-VII.6.1-95)

The in-stream monitoring parameters listed in the DEIR and DFMP are important parameters for monitoring sediment and other impacts to water quality. Large woody debris, pool dimension, pool frequency, embeddedness, substrate size distribution, longitudinal profiles, and benthic macroinvertebrate sampling are all parameters listed with associated water quality targets in the Big River and Noyo River Sediment TMDLs established by the USEPA. The TMDLs also include a water quality target for V*, which should be included as a monitored parameter for stream channel conditions in the DEIR and DFMP. In some instances, other in-stream monitoring parameters, such as turbidity and suspended sediment concentrations, may be useful when a monitoring program is properly designed to document the effects of specific management activities on water quality.

Re: Section VII.6.1.16, Project Impacts, Sedimentation (pp. VII.6.1-100-VII.6.1-101) and Section VII.10.9, Project Impacts, Violate any water quality standards or waste discharge requirements (pp. VII.10-21-VII.10-25)

The DEIR states that "Erosion from road related . . . erosion is expected to continue to decrease as the Accelerated Road Management Plan on the State Forest is implemented . . . [Implementation of the DFMP] would result in a less than significant [sedimentation]." As the Road Management Plan does not specify a schedule for the implementation of road repairs and road abandonment projects, there is no expectation that erosion from roads will decrease in such a way as to have a less than significant impact on the beneficial uses of water. The sedimentation and erosion reduction goals in the DEIR and DFMP should consider the Big River and Noyo River Sediment TMDLs established by the USEPA which lay out the major sediment sources and specify sediment load allocations to each source, including natural and management related sources of landslides, surface erosion, and stream bank erosion. The DEIR and DFMP also should consider the delivery of sediment that occurs from remediations for potential sediment delivery sites; that is, replacing an old, but stable, Humboldt crossing will cause a discharge of sediment in the short term, while avoiding a larger discharge at some point in the future. Too many remediations in a small area has the potential to deliver significant amounts of sediment as the remediation sites "adjust." This needs to be considered spatially and temporally.

Re: Section VII.7.3, Regulatory Framework, State Porter-Cologne Water Quality Act. (pp. VII.7-27- VII.7-29)
The DEIR discusses the General Waste Discharge Requirements for Discharges Related to Timber Harvest Activities on Non-Federal Lands in the North Coast Region, Order No. R1-2004-0030 (GWDR) and states that "Most timber harvest activities on JDSF will be subject to this order." The DEIR does not, however, describe how the requirements of the GWDR, including an inventory of controllable sediment delivery sites and implementation schedule for of prevention and minimization management measures will be integrated with the Road Management Plan.

Re: Section VII.7.4, Proposed JDSF Management Measures, Hill slope Management to Provide for Slope Stability (p. VII.7-30)
Regional Water Board staff concur with the goal of the DFMP to mitigate and maintain slope stability during forest management activities to prevent damage to aquatic habitat and control sedimentation. Regional Water Board staff recommend the priority for slope stability projects also be given to those anthropogenic sediment sources which pose the greatest threat to water quality, regardless of the connection of the sediment source to a THP or other management related activity.

Re: Section VII.7.5, Thresholds of Significance (p. VII.7-35)
Although the DEIR mentions the proposed Sediment Waste Discharge Prohibitions and the Action Plan Basin Plan amendment to the Basin Plan in a footnote on page VII.7-27, it does not discuss the possible implications to the thresholds of significance, particularly if a proposed project would result in substantial soil erosion or the loss of topsoil, as defined in the proposed amendment.

Re: Section VII.10.5, Regulatory Framework (pp. VII.10-14-VII.10-18)
This section should recognize the beneficial uses identified in the Basin Plan for the Big River and Noyo River (see Attachment). The existing beneficial uses for both the Big and Noyo Rivers include: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Groundwater Recharge (GWR); Freshwater Replenishment (FRSH); Navigation (NAV); Hydropower Generation (POW) existing in the Noyo River only; Water Contact Recreation (REC 1); Non-Contact Water Recreation (REC 2); Commercial and Sport Fishing (COMM); Cold Freshwater Habitat (COLD); Wildlife Habitat (WILD); Rare, Threatened or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); and Estuarine Habitat (EST); Aquaculture (AQUA) existing in the Noyo River only. Both rivers are listed with the potential Industrial Process Supply (PRO) beneficial use and the Big River is listed with the potential Hydropower Generation (POW) and Aquaculture (AQUA) beneficial uses.

Re: Section VII.10.5, Regulatory Framework, Federal Clean Water Act (p. VII.10-15)
The sediment load allocations listed in both the Big River and Noyo River Sediment TMDLs call for significant reductions in sediment delivery from several anthropogenic sources, including harvest related mass wasting; skid trail related mass wasting and surface erosion; road related mass wasting, surface erosion, and fluvial erosion; railroad related mass wasting; and grassland landslides. While road related erosion requires the largest reductions, the DEIR and DFMP

should recognize reductions in the delivery of sediment from all sources are important for the protection of the beneficial uses of water.

Re: Section VII.10.5, Regulatory Framework, State Porter-Cologne Water Quality Act (p. VII.10-16)
The DEIR acknowledges the Regional Water Board adoption of Resolution R1-2004-0087, Total Maximum Daily Load Implementation Policy for Sediment Imparied Receiving Waters in the North Coast Region on November 29, 2004. This policy directs staff to use all of its available authorities, and non-regulatory actions to control sediment discharges in the region, with the primary goal of accelerating the restoration of sediment impaired water bodies. The DEIR coupled with the DFMP constitute an opportunity to comply with TMDL implementation, and should be revised to implement road repairs, not just within the scope of timber sales, but in the context of the state forest.

Re: Section VII.10.7, Additional Management Measure for an Accelerated Road Management Plan (p. VI.10-19)
The DEIR states that identified needed road upgrades will be completed as a part of each THP, and based on the availability of staff, contractors, and funding. Staff remain concerned that the December 2005 DEIR does not provide a time schedule for implementation of road upgrades and abandonment, based upon current inventories and knowledge of the exiting miles of roads that may require work. We recommend that JDSF revise the DEIR to address the timeline for prioritizing and conducting the work to upgrade and abandon roads in the JDSF road network. Efforts to address roads with the greatest risk to the beneficial uses of water should begin as soon as possible or concurrent with the road inventories.

Re: Appendix 11, Overview of Existing Sediment Studies
It appears the TMDL-related discussion presented in Appendix 11 is based on two misunderstandings. The first misunderstanding is that the TMDL analyses attribute current sediment delivery solely to current forest practices. For instance, the statement on page 16, last paragraph, first sentence that "...current timber operations under the Forest Practice Rules are unlikely to be responsible for producing 43 to 52% of the current sediment load, as reported by the TMDL work for the Noyo and Big Rivers, respectively." (emphasis added) The statement is incorrect because the TMDLs do not assume or state that current timber operations under the Forest Practice Rules are solely responsible for current management-related sediment delivery. Much of the discussion in Appendix 11 is written to support this statement. Regional Water Board staff recommend that relevant sections of Appendix 11 should be rewritten in order to address and correct this misunderstanding.

The second misunderstanding is that TMDL source analyses are developed from suspended sediment load data. In fact, TMDLs are developed based on upslope sediment source inputs. The first paragraph on Appendix 11 page 3 discusses the work of Koehler and others and states that elevated suspended sediment loads from historic management-related sediment deposits trapped in long-term storage were not considered in the Noyo and Big River TMDLs, which resulted in over-estimation of current upslope sediment delivery in the TMDLs. Later, in point 2 of the fourth bullet on page 19, it states "... in-channel storage of sediment from historic logging operations is a likely source of some of the sediment that TMDLs have attributed to current timber management practices." However, the TMDL estimates of current upslope sediment

delivery are not based on estimates of suspended sediment loads. Regional Water Board staff recommend that the relevant sections of Appendix 11 should be rewritten in order to address and correct this misunderstanding.

Throughout the appendix the terms “sediment inputs,” “sediment yield,” “sediment production,” “sediment loads,” and “erosion” are used interchangeably in some cases, and in other cases the same term is used to describe different processes. Also, the term “sediment budget” is incorrectly used to describe just one component of a sediment budget, and changes in storage are considered yields. Regional Water Board staff recommend that the relevant sections of Appendix 11 be rewritten to clearly state that the rates presented are described as either sediment input, output, or change in storage.

Re: Appendix 11, Overview of Existing Sediment Studies, Noyo River Watershed (p. 3)
The second paragraph on page 3 discusses Benda and Associates' analysis of bank erosion rates based on large woody debris loading. The estimates of bank erosion developed by Benda and Associates are incredibly high when compared to estimates developed with other methods, including those presented in Appendix 11. North Coast Water Board staff believe the methodology employed in Benda and Associates study is a novel experimental approach to estimating bank erosion, however the methods need to be peer-reviewed before conclusions can be drawn from the results.

Re: Appendix 11, Comparison of Sediment Yield Estimates (p. 15)
The third paragraph of page 15 discusses Bedrossian and Custis' 2002 review of TMDL sediment source analyses. Regional Water Board staff have thoroughly reviewed Bedrossian and Custis' analysis and much of the data on which their analysis is based, and have determined that their arguments are based on flawed logic, faulty data, and incorrect assumptions.

The DEIR does not explain the contradictions between those studies, the studies presented (Bedrossian and Custis, Koehler and others, and Benda and Associates), and the other sediment source studies presented in Appendix 11 (CDF/Stillwater Sciences, 1999; MRC, 2000; MRC, 2003; USFS-PSW, 2003; Ferrier and others, 2004). Regional Water Board staff recommend that the DEIR either delete the discussion of Bedrossian and Custis, or resolve the contradiction between their arguments and the other sediment source analyses presented in Appendix 11.

Much of the discussion discounting TMDLs in Appendix 11 appears to serve no purpose. The arguments for discounting TMDLs are in conflict with other studies presented, as well as the conclusions drawn from them. It appears, then, that the reason for discounting the TMDLs are based on misunderstandings about the way the TMDLs were developed. Regional Water Board staff recommend that the relevant sections of Appendix 11 that relate to TMDLs should be rewritten to eliminate these contradictions.

Re: Appendix 11, Overview of Existing Sediment Studies, Discussion (p. 15-18)
The management implications of the TMDLs' conclusions are congruent with those arrived at in Appendix 11. The first sentence on page 18 states, "The main lesson to be learned from the sediment studies completed to date in the JDSF EIR assessment area is that roads and watercourse crossings need to be designed, constructed, surfaced, and maintained in a manner that will reduce long-term sediment yield." The document goes on to discuss the importance of

inventorying and correcting road-related sediment sources in the framework of a road management plan. These conclusions are supported by the results and conclusions of the TMDLs. It is curious then, why other parts of the Appendix spend so much effort discounting the TMDLs.

Re: Appendix 12, Stream Temperature, MWAT Threshold and Criteria for Determining Impairment (p. 4)
The DEIR references the Hartwell Welsh study, "researchers found juvenile coho present in 18 of 21 tributaries of the Mattole River with MWATs up to 16.7 C." We suggest the DEIR clarify the results of the study.

According to the study, there were "21 tributaries of the Mattole River" where the presence of coho was examined. Of those 21 tributaries, only 12 had maximum weekly average temperatures (MWATs) less than 16.7 C. Coho "were absent from all 9 streams sampled that had MWAT greater than 16.7." Of the 12 streams with MWATs less than 16.7 C, coho were found in nine of them. All streams with MWATs lower than 14.5 C had coho and six out of nine streams with MWATs between 14.5 C and 16.7 C had coho in them.

In other words, the study implies that streams with MWATs above 16.7 C are not suitable for coho (none of the streams above this temperature had coho in them). Streams with MWATs less than 14.5 C are suitable for coho (all streams below this temperature had coho in them). Streams in between these two MWAT thresholds may or may not be suitable, depending on other habitat variables and refugia. To ensure full protection of coho from temperature impairments, MWATs should be below 14.5 C. Marginal protection is provided between 14.5 and 16.7 C and anything above 16.7 C is unsuitable. This study agrees well with other literature on preferred and/or optimal salmonid temperatures for juvenile rearing. (EPA, 2001).

Re: Appendix 12, Stream Temperature, MWAT Threshold and Criteria for Determining Impairment (p. 5)
The text of the DEIR states "Their [Hines and Ambrose] data showed that the number of days a site exceeded an MWAT of 17.6 C was one of the most influential variables for predicting coho presence and absence."

Hines and Ambrose use the term "MWAT" for their statistic that in fact is a maximum weekly maximum temperature (MWMT). In other words, the significant stream temperature statistics were calculated from the daily maximum temperatures that define the MWMT statistic, not the daily average temperatures that define the MWAT.

David Hines (pers. comm. 2006) explained that they were using 7-day averages of daily maxima and comparing them to thresholds that they labeled MWAT thresholds. Using this study to justify a 17.6 C MWAT objective for coho streams is entirely inappropriate. It is more appropriate to interpret the study as justification for a 17.6 C MWMT objective. A 17.6 C MWMT objective is in line with the Hartwell Welsh study that showed a 14.5 C MWAT as an indicator of coho presence. A stream with a maximum average temperature of 14.5 C and a maximum average daily maximum (MWMT) of 17.6 C would most likely be suitable for coho and has a temperature regime that represents a realistic diurnal fluctuation.

Re: Appendix 12, Table 3, MWAT Thresholds and Standards, (p. 5)

Table 3 contains several errors. The table states that at a 17 C MWAT, coho growth is reduced 20 percent from maximum according to Sullivan and others, 2000. The study actually states that a 20 percent reduction in growth of coho was observed at a 19 C MWAT. The table correctly says that a 10 percent reduction in growth of coho was observed at a 14.8 C MWAT. The table leaves out another threshold from the Sullivan study that states a 10 percent reduction in growth of coho also was observed at a 16.5 C MWMT. Note that Sullivan's MWAT threshold is very close to the 14.5 C threshold observed by Hartwell Welsh and the 16.5 C MWMT is close to the 17.6 C threshold from the Hines and Ambrose study. The results of these three important studies all support each other. Additionally, EPA Region 10 recommended an MWMT of 16 C, not an MWAT of 15 C as reported in the table. Lastly, Oregon adopted EPA's recommended MWMT objectives into its water quality control plan.