INITIAL STATEMENT OF REASONS

Protection for Threatened and Impaired Watersheds, 1999

[July 23, 1999]

Title 14 of the California Code of Regulations (14 CCR):

Amend:

§ 895	Abbreviations Applicable Throughout Chapter
§ 895.1	Definitions
§§ 916 [936, 956]	Intent of Watercourse and Lake Protection
§§ 916.2 [936.2, 956.2]	Protection of the beneficial Uses of Water and Riparian Functions

Adopt:

§§ 916.9 [936.9, 956.9]	Protection and Restoration in Watersheds with Threatened or Impaired Values
§§ 923.9 [943.9, 963.9]	Roads and Landings in Watersheds with Threatened or Impaired Values

14 CCR § 895 Abbreviations Applicable Throughout Chapter

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS

The California Forest Practice Rules commonly utilize abbreviations in the regulation text that are recognized by federal and state agencies, as well as the forest products industry representatives. However, the Forest Practice Rules under section 895 (Abbreviations Applicable Throughout Chapter) do not include a comprehensive listing of those abbreviations. The three (3) abbreviations proposed for addition to the Forest Practice Rules are commonly utilized and accepted to represent three (3) of the reviewing agencies responsible for determining if a timber harvesting plan provides adequate protection to watershed resources and the beneficial uses of the State's waters, including habitat for threatened and impaired salmonid species. These abbreviations are not currently listed in the Forest Practice Rules.

SPECIFIC PURPOSE OF THE REGULATION

The proposed additional abbreviations are intended to ensure that the affected public, as well as the reviewing agencies understand the abbreviations that are utilized in the proposed changes to the regulations and those that are currently included in the Forest Practice Rules. This is additionally intended to allow for brevity in the rule language and subsequently to increase the clarity of proposed and existing regulations.

NECESSITY

The proposed additional abbreviations are necessary because the current and proposed Forest Practice Rules include these abbreviations in other subchapters without an adequate description of the abbreviation. A description of the three (3) abbreviations included under 14 CCR 895 is necessary to ensure that all affected persons can readily access the meaning of the abbreviations when necessary to understand the regulations.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives to these proposed regulations were presented to, or considered by the Board at this time.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

The Board staff estimated that there are no significant costs associated with this proposed revision to the rules. The Board has determined that the potential cost for this regulation would be minimal, consisting of minor printing costs to the State if any costs are incurred. This cost would not exceed the costs normally incurred each year by the Department of Forestry and Fire Protection to print and distribute rule language to field personnel. Therefore, the proposed regulations would not have a significant adverse economic impact on any business.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has not identified any adverse environmental effects from the proposed action.

14 CCR § 895.1 Definitions

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS

The California Forest Practice Rules commonly utilize technical terms in the regulation text that are generally recognized by federal and state agencies, as well as the forest products industry representatives. However, the Forest Practice Rules under section

895.1 (Definitions) do not include a comprehensive listing of applicable definitions for these terms. Of the six (6) definitions proposed for addition or as amendments to the Forest Practice Rules, four (4) are not currently listed in the Forest Practice Rules, although the terms are proposed for use in the regulation changes presented in this rulemaking package. Of the definitions proposed to be changed, the definition of "saturated soil conditions" doesn't adequately define the term. The current definition for this term does not address some important factors related to the protection of the state's waters. These factors include turbidity in Class III and Class IV watercourses, the "potential" for operations to impact watershed resources, increases in turbidity that may not be visible, and the potential for impacts to watershed resources from the use of heavy equipment for site preparation. Additionally, the definition of "Watercourse or Lake Transition Line" doesn't adequately define that term in regard to the application of the proposed rule changes.

The definitions proposed for adoption are intended to ensure that the public, as well as the reviewing agencies, understand the terms that are utilized in the proposed changes to the regulations, and also those that are currently used in the Rules. This will also keep the rules clear.

SPECIFIC PURPOSE OF THE REGULATION

The proposed additions and changes to the definitions are intended to ensure that the affected public, as well as the reviewing agencies understand the technical terms that are utilized in the proposed changes to the regulations and those that are currently included in the Forest Practice Rules. This is additionally intended to allow for brevity in the rule language and subsequently to increase the clarity of proposed and existing regulations.

The addition of the definitions of the terms "bankfull stage" and "channel zone" is intended to provide common, enforceable definitions of terms being utilized in the proposed rule changes.

The amendment of the definition of the term "Saturated Soil Conditions" is intended to correct problems in the existing definition in the following ways:

1) It expands protection to currently unprotected Class III and IV waters.
2) It defines saturated soil conditions in terms of the potential to cause a problem if operated on.
3) It prohibits turbidity increase that would violate applicable water quality standards.
4) It extends application to mechanical site preparation.
5) It reduces unnecessarily duplicative language.
6) It adds excessive rutting by yarding or site preparation equipment as evidence of saturated soil conditions.

The addition of the definition of the term "stable operating surface" " is intended to provide a common, enforceable definition of a term which is being utilized in the proposed rule changes.

The definition of “Watercourse or Lake Transition Line" doesn't adequately define that term in regard to the application of the proposed rule changes. Therefore, the Board chose to adopt a revised definition that conformed to the definition provided in *Appendix E* of the SRP report.

The addition of the definition of the term “watersheds with threatened or impaired values” ” is intended to provide a common, enforceable definition of a term which is being utilized in the proposed rule changes. This new definition is intended to give special recognition to those watersheds where: (i) populations of anadromous salmonids, other aquatic species, or riparian-dependent species that are listed as threatened or endangered under the State or Federal ESAs are currently supported or could feasibly be restored, or (ii) water bodies are listed pursuant to CWA Section 303(d) as water quality limited by factors (e.g., sediment, temperature, LWD) that may be affected by timber operations, or where a Total Maximum Daily Load (TMDL) has been adopted. It is also intended to clearly identify those watersheds where more stringent forest practices are required.

NECESSITY

The proposed additions and changes to the definitions are necessary because the current and proposed Forest Practice Rules include technical terms in other subchapters without an adequate description of the term. A definition of the six (6) technical terms included under 14 CCR 895.1 is necessary to ensure that all affected persons can readily access the meaning of the terms when necessary to understand and enforce the regulations.

The addition of the definitions of the terms “bankfull stage” and "channel zone" is necessary because these terms are utilized in the proposed changes to the regulations, but the existing regulations fail to provide a common, enforceable definition of the term that is being utilized.

The amendment of the definition of the term “saturated soil conditions” is necessary to correct problems in the existing definition. The amended definition is necessary to:

a) expand protection to currently unprotected Class III and IV waters. Any turbidity in Class III waters will, by definition, enter Class I or II waters. Increased turbidity in Class IV water may impair its intended beneficial use and/or the lifetime of the facilities that convey, storage, or utilize the water.
b) define saturated soil conditions in terms of the potential to cause a problem if operated on. This is necessary to avoid having the definition and related Rules take effect only after a water quality problem has been created.
c) prohibit a turbidity increase that would violate applicable water quality standards. Some water quality standards prohibit turbidity increases that are too small to be visible, and where receiving water is already highly turbid, large increases may not be visible.
d) extend the application of the rules to mechanical site preparation. Where heavy equipment is used in mechanical site preparation, it usually intensely disturbs far more ground than yarding, roads, and landings.

e) reduce unnecessarily duplicative language.
f) add excessive rutting by yarding or site preparation equipment as evidence of saturated soil conditions.

The addition of the definition of the term “stable operating surface” ” is necessary because this term is utilized in the proposed changes to the regulations, but the existing regulations fail to provide a common, enforceable definition of the term that is being utilized.

The revisions to the definition of “Watercourse or Lake Transition Line" are necessary to clearly define that area where operations are restricted under the changes proposed in this rulemaking package. The Board chose to adopt a revised definition that conformed to the definition provided in *Appendix E* of the SRP report.

The addition of the definition of the term “watersheds with threatened or impaired values” ” is necessary because this term is utilized in the proposed changes to the regulations, but the existing regulations fail to provide a common, enforceable definition of the term that is being utilized. This new definition is needed ensure that special recognition is given to those watersheds where: (i) populations of anadromous salmonids, other aquatic species, or riparian-dependent species that are listed as threatened or endangered under the State or Federal ESAs are currently supported or could feasibly be restored, or (ii) water bodies are listed pursuant to CWA Section 303(d) as water quality limited by factors (e.g., sediment, temperature, LWD) that may be affected by timber operations. It is also necessary to clearly discern those watersheds where more stringent forest practices are required.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD’S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives to these proposed regulations were presented to, or considered by the Board at this time.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

The Board staff estimated that there are no significant costs associated with this proposed revision to the rules. The Board has determined that the potential cost for this regulation would be minimal, consisting of minor printing costs to the State if any costs are incurred. This cost would not exceed the costs normally incurred each year by the Department of Forestry and Fire Protection to print and distribute rule language to field

personnel. Therefore, the proposed regulations would not have a significant adverse economic impact on any business.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has not identified any adverse environmental effects from the proposed action.

14 CCR §§ 916 [936, 956] **Intent of Watercourse and Lake Protection**

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS

In 1996, the State Fish and Game Commission listed Coho salmon south of San Francisco Bay as threatened under the State Endangered Species Act (ESA). Then in 1997, the National Marine Fisheries Service (NMFS) listed Coho salmon as threatened throughout its range in California under the Federal ESA, and Steelhead trout have been designated as candidate species. Additionally, the U.S. Environmental Protection Agency (USEPA) has listed nineteen North Coast streams as water quality limited under Section 303(d) of the Federal Clean Water Act (CWA); many of the listings are for factors that can be affected by timber operations.

The Z'berg-Nejedly Forest Practice Act of 1973 established the legislature's intent to protect and give consideration to the public's need for long-term watershed protection, fisheries and wildlife, and it directed the State Board of Forestry and Fire Protection to adopt regulations to control unreasonable effects on the beneficial uses of the State's waters. Recognizing that some activities associated with the harvesting of timber products can adversely impact the waters of the State, the Board of Forestry and Fire Protection determined that the current intent language under 14 CCR §§ 916 [936, 956] did not adequately convey its intent to ensure that the beneficial uses of watercourses and lakes, aquatic and riparian-dependant species, and the beneficial functions of riparian zones are fully protected by maintaining the beneficial uses of water (which include aquatic habitat for threatened or endangered species) where they are in good condition, protecting them where they are threatened, and restoring them where they are impaired. The Board determined that the intent language under this section of the rules was lacking in the following areas:

1. The current Forest Practice Rules do not adequately ensure the recognition of the need for protection of aquatic and riparian-dependent species, especially those that are listed as threatened, endangered, or otherwise of special concern.

2. The current Forest Practice Rules do not adequately ensure the protection of the beneficial functions of riparian zones, which are inextricably linked to the protection of the beneficial uses of water and aquatic and riparian-dependent species.

3. The current Forest Practice Rules do not adequately emphasize the need for substantive consideration of existing adverse impacts that lie beyond the spatial and temporal limits of a specific timber operation in addressing cumulative impacts.

4. The current Forest Practice Rules do not clearly indicate the Board of Forestry and Fire Protection's intent to restore water-related values where they are impaired, and it is feasible to do so.

5. The current Forest Practice Rules do not clearly indicate the Board of Forestry and Fire Protection's intent to ensure that all necessary and feasible measures are incorporated into timber operations to accomplish protection and restoration of water-related values.

6. The current Forest Practice Rules do not clearly establish a performance standard or policy that timberland management objectives need to change depending on the condition of the water-related values they may affect.

7. The current Forest Practice Rules do not clearly establish a policy that:
   a) Protection of water-related values is to be accomplished during all stages of a timber operation, from planning through completion.
   b) Proposed and ongoing timber operations must at all times comply with all applicable legal requirements.

8. The current intent language under 14 CCR §§ 916 [936, 956] of the Forest Practice Rules does not clearly indicate those specific activities that must be avoided to meet the Board of Forestry and Fire Protection's intent to protect and/or restore aquatic and riparian-dependent species, the quality and beneficial uses of water, and beneficial riparian zone functions.

9. The current Forest Practice Rules do not clearly establish land management priorities in those areas that are most in need of water quality protection, i.e., watercourse and lake protection zones and watersheds with threatened or impaired values.

SPECIFIC PURPOSE OF THE REGULATION

The proposed additions and changes to the regulations under 14 CCR §§ 916 [936, 956] are intended to ensure that the affected public, as well as the reviewing agencies understand the Board's intent regarding watercourse and lake protection. The changes are intended to address the most immediately pressing issues: how to deal with timber operations in a watershed where: (1) water bodies are listed pursuant to CWA Section 303(d) as water quality limited due to factors (e.g., sediment, temperature, or large woody debris (LWD)) that may be affected by timber operations, or (2) populations of anadromous salmonids, other aquatic species, or riparian-dependent species that are listed as threatened or endangered under the State or Federal ESAs are currently supported or could feasibly be restored. The changes proposed for this section of the Forest Practice Rules are specifically intended to:

1. Ensure the recognition of the need for protection of aquatic and riparian-dependent species, especially those that are listed as threatened, endangered, or otherwise of special concern.

2. Ensure the protection of the beneficial functions of riparian zones which are inextricably linked to the protection of the beneficial uses of water and aquatic and riparian-dependent species.

3. Ensure that the affected public and the reviewing agencies recognize the need substantive consideration of existing adverse impacts that lie beyond the spatial and temporal limits of a specific timber operation in addressing cumulative impacts.

4. Clearly indicate the Board of Forestry and Fire Protection's intent to restore water-related values where they are impaired, and it is feasible to do so.

5. Clearly indicate the Board of Forestry and Fire Protection's intent to ensure that all necessary and feasible measures are incorporated into timber operations to accomplish protection and restoration of water-related values.

6. Clearly establish a performance standard or policy that timberland management objectives need to change depending on the condition of the water-related values they may affect.

7. Clearly establish a policy that:
   a) Protection of water-related values is to be accomplished during all stages of a timber operation, from planning through completion.
   b) Proposed and ongoing timber operations must at all times comply with all applicable legal requirements.

8. Clearly indicate those specific activities that must be avoided to meet the Board of Forestry and Fire Protection's intent to protect and/or restore aquatic and riparian-dependent species, the quality and beneficial uses of water, and beneficial riparian zone functions.

9. Clearly establish land management priorities in those areas that are most in need of water quality protection, i.e., watercourse and lake protection zones and watersheds with threatened or impaired values.

NECESSITY

In 1996, the State Fish and Game Commission listed Coho salmon south of San Francisco Bay as threatened under the State Endangered Species Act (ESA). Then in 1997, the National Marine Fisheries Service (NMFS) listed Coho salmon as threatened throughout its range in California under the Federal ESA, and Steelhead trout have been designated as candidate species. Additionally, the U.S. Environmental Protection

Agency (USEPA) has listed nineteen North Coast streams as water quality limited under Section 303(d) of the Federal Clean Water Act (CWA); many of the listings are for factors that can be affected by timber operations.

The Z'berg-Nejedly Forest Practice Act of 1973 established the legislature's intent to protect and give consideration to the public's need for long-term watershed protection, fisheries and wildlife, and it directed the State Board of Forestry and Fire Protection to adopt regulations to control unreasonable effects on the beneficial uses of the State's waters. Recognizing that some activities associated with the harvesting of timber products can adversely impact the waters of the State, the Board of Forestry and Fire Protection determined a need for more specific and encompassing intent language that clearly conveys its intent to ensure that the beneficial uses of watercourses and lakes, aquatic and riparian-dependant species, and the beneficial functions of riparian zones are fully protected by maintaining the beneficial uses of water (which include aquatic habitat for threatened or endangered species) where they are in good condition, protecting them where they are threatened, and restoring them where they are impaired.
The proposed amendments are specifically needed to ensure that:

a) Recognition of the need for protection is expanded to include:
    1) Aquatic and riparian-dependent species – This change is needed to emphasize the needs of species, especially where they are threatened, endangered, or otherwise of special concern.
    2) Beneficial functions of riparian zones – This change is needed to ensure adequate protection of beneficial uses of water and aquatic and riparian-dependent species, both of which are inextricably linked with these beneficial functions[1].
    3) Cumulative effects. This change is needed for substantive consideration of existing adverse impacts that lie beyond the spatial and temporal limits of a specific timber operation.
b) BOF clearly states its intent to:
    1) Restore water-related values where they are impaired, and it is feasible to do so.
    2) Ensure that all necessary and feasible measures are incorporated into timber operations to accomplish protection and restoration of water-related values.

The language proposed for addition to this section of the rules under subsection (a) is specifically needed to clearly establish a performance standard or policy that timberland management objectives need to change depending on the condition of the water-related values they may affect. Consistent with the CWA, State and Federal ESAs, and the Porter-Cologne Water Quality Control Act, higher levels of protection are needed where water-related values are threatened. Consistent with the CWA and Porter-Cologne Act, insofar as feasible, resource restoration is required where water-related values are impaired.

[1] Throughout the remainder of this document, these three items plus the factors set forth in 14 CCR 916.2 (a) will collectively be referred to as "water-related values".

The language proposed for addition to this section of the rules under subsection (b) is specifically needed to clearly establish a policy that:

a) Protection of water-related values is to be accomplished during all stages of a timber operation, from planning through completion. This is needed help ensure that: (i) these values, potential impacts, and appropriate protective measures are adequately identified and evaluated during planning and review, and (ii) the specified measures and Rules are appropriately implemented and enforced during conduct of the operation and the erosion control maintenance period.
b) Proposed and ongoing timber operations must at all times comply with all applicable legal requirements. Because the Forest Practice Act and Rules require that the Rules be the only criteria used by the Director in approving a plan, this change is needed to ensure that the Rules themselves require plan preparers and submitters, agency staff, and CDF decision-makers to look beyond the Rules' forest practice requirements in order to ensure compliance with all other applicable legal requirements.
    1) Subsection (b)(1) incorporates into the intent section a currently existing performance standard that prohibits discharge of waste in deleterious quantities. This is needed to clearly indicate those specific activities that must be avoided to meet the Board of Forestry and Fire Protection's intent to protect and/or restore aquatic and riparian-dependent species, the quality and beneficial uses of water, and beneficial riparian zone functions.
    2) Subsection (b)(2) adds a similar prohibition against removing water, trees, or LWD in quantities deleterious to aquatic and riparian-dependent species, the quality and beneficial uses of water, and beneficial riparian zone functions. This is also needed to clearly indicate those additional specific activities that must be avoided to meet the Board of Forestry and Fire Protection's intent to protect and/or restore aquatic and riparian-dependent species, the quality and beneficial uses of water, and beneficial riparian zone functions.

The language proposed for addition to this section of the rules under section (c) is needed to clearly establish land management priorities in those areas that are most in need of water quality protection, i.e., watercourse and lake protection zones and watersheds with threatened or impaired values. In such areas, timber management that supports protection and restoration of aquatic and riparian-dependent species, the quality and beneficial uses of water, and beneficial riparian zone functions is encouraged, that which poses no threat and does not retard recovery is acceptable, and that which does pose a threat or may retard recovery is discouraged.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives to these proposed regulations were presented to, or considered by the Board at this time.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

The Board staff estimated that there are no significant adverse economic impacts associated with this proposed revision to the rules. Where the Board of Forestry and Fire Protection has indicated those specific activities that must be avoided to meet the Board's intent regarding watercourse and lake protection, those activities are already required under current regulations to protect aquatic and riparian-dependent species and the quality and beneficial uses of water. It is not anticipated that additional costs would be incurred. Therefore, the proposed regulations would not have a significant adverse economic impact on any business.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has not identified any adverse environmental effects from the proposed action.

14 CCR §§ 916.2 [936.2, 956.2] **Protection of the Beneficial Uses of Water and Riparian Functions**

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS

In 1996, the State Fish and Game Commission listed Coho salmon south of San Francisco Bay as threatened under the State Endangered Species Act (ESA). Then in 1997, the National Marine Fisheries Service (NMFS) listed Coho salmon as threatened throughout its range in California under the Federal ESA, and Steelhead trout have been designated as candidate species. Additionally, the U.S. Environmental Protection Agency (USEPA) has listed nineteen North Coast streams as water quality limited under Section 303(d) of the Federal Clean Water Act (CWA); many of the listings are for factors that can be affected by timber operations. However, the current Forest Practice Rules do not adequately describe the factors that need to be considered in the development of measures necessary for the protection or restoration of the beneficial uses of water. Furthermore, the current Forest Practice Rules do not adequately acknowledge the importance of functioning riparian habitat, and the condition of the factors that contribute to maintenance or restoration of functioning riparian habitat and the beneficial uses of water. Additionally, the current rules focus on the restorable uses of water for fisheries and do not adequately address the need to consider all restorable uses of water in developing protection measures. Also, the current rules do not adequately convey that

the protective measures presented in the rules are to be considered the minimum required, and that additional measures may be required based upon site specific conditions identified during the preparation and review of a timber harvesting plan.

SPECIFIC PURPOSE OF THE REGULATION

The proposed additions and changes to the regulations under 14 CCR §§ 916.2 [936.2, 956.2], subsection (a) are intended to:

a) Clarify the factors to be considered in developing watercourse and lake protection.
b) Ensure that all restorable uses of water are protected.
c) Ensure that all parties use both currently available and new site-specific information in identifying and evaluating existing and restorable uses.
d) Ensure that the protective measures account for the condition of the factors to be protected, not just their presence.
e) Ensure that the protection measures fully protect and/or restore water-related values in accordance with BOF intent.

The proposed additions and changes to the regulations under 14 CCR §§ 916.2 [936.2, 956.2], subsections (b), (c), and (d) are intended to ensure the affected public and the reviewing agencies understanding that the protective measures set forth in this article are the minimum required protection measures, and that more protective measures may need to be developed.

NECESSITY

In 1996, the State Fish and Game Commission listed Coho salmon south of San Francisco Bay as threatened under the State Endangered Species Act (ESA). Then in 1997, the National Marine Fisheries Service (NMFS) listed Coho salmon as threatened throughout its range in California under the Federal ESA, and Steelhead trout have been designated as candidate species. Additionally, the U.S. Environmental Protection Agency (USEPA) has listed nineteen North Coast streams as water quality limited under Section 303(d) of the Federal Clean Water Act (CWA); many of the listings are for factors that can be affected by timber operations. The changes proposed under this rulemaking package are necessary to address the most immediately pressing issues regarding the listing of salmonids and the various North Coast streams. These issues center on the need to address timber operations in a watershed where: (1) water bodies are listed pursuant to CWA Section 303(d) as water quality limited due to factors (e.g., sediment, temperature, or large woody debris (LWD)) that may be affected by timber operations, or (2) populations of anadromous salmonids, other aquatic species, or riparian-dependent species that are listed as threatened or endangered under the State or Federal ESAs are currently supported or could feasibly be restored.

In order to thoroughly address these issues, the various reviewing agencies have determined a need for the Forest Practice Rules to more adequately describe the factors that need to be considered in the development of measures necessary for the protection or restoration of the beneficial uses of water, and to more adequately acknowledge the

importance of functioning riparian habitat, and the condition of the factors that contribute to such habitat. The agencies also determined a need for the rules to more adequately consider all restorable uses of water. Also, the reviewing agencies determined that the rules need to more adequately convey that the protective measures presented in the rules are to be considered the minimum required, and that additional measures may be required based upon site specific conditions identified during the preparation and review of a timber harvesting plan.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives to these proposed regulations were presented to, or considered by the Board at this time.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

The Board staff estimated that there are no significant adverse economic impacts associated with this proposed revision to the rules. The current rules require that certain factors be considered when determining the measures that are necessary for adequate protection of the beneficial uses of water. The proposed changes further define these factors. Where the Board of Forestry and Fire Protection has indicated that the factors must be protected to meet the Board's intent regarding protection of the beneficial uses of water, the protection of these factors is already required under current regulations. It is not anticipated that additional costs would be incurred. In regard to the restoration of these factors, the Board staff estimated that this regulation could potentially result in long-term costs that would vary greatly depending on, but not limited to 1) the factor requiring restoration (i.e. beneficial uses of water, riparian habitat, or others), 2) the severity of the impairment, 3) the affected area under the control of the plan submitter, and 4) the long-term land management goals of the plan submitter. The protection measures currently provided in the rules and those that are proposed under this rulemaking package are anticipated to provide the means to secure restoration over a long period of time in most instances. It is not anticipated that substantial additional costs will be incurred. Therefore, the proposed regulations would not have a significant adverse economic impact on any business.

As no other costs have been associated with this proposed revision to the rules, the Board has determined that the potential for additional costs for this regulation would be minimal in the context of overall, long-term watershed management. Therefore, the proposed regulations would not have a significant adverse economic impact on any business.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has not identified any adverse environmental effects from the proposed action.

14 CCR §§ 916.9 [936.9, 956.9] **Protection and Restoration in Watersheds with Threatened or Impaired Values**

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS

In 1996, the State Fish and Game Commission listed Coho salmon south of San Francisco Bay as threatened under the State Endangered Species Act (ESA), and the Department of Fish and Game subsequent executed a 2090 agreement with the California Department of Forestry and Fire Protection (CDF) to provide additional protection for Coho salmon. In 1997, the National Marine Fisheries Service (NMFS) listed Coho salmon as threatened throughout its range in California under the Federal ESA, and Steelhead trout have been designated as candidate species.

Additionally, the U.S. Environmental Protection Agency (USEPA) has listed nineteen North Coast streams as water quality limited under Section 303(d) of the Federal Clean Water Act (CWA); many of the listings are for factors that can be affected by timber operations. In 1997, USEPA entered into a court-mandated consent decree requiring that Total Maximum Daily Loads (TMDLs) be established for these streams over the next 15 years according to a specified schedule. Upon establishment of a TMDL by either USEPA or a California Regional Water Quality Control Board (RWQCB), the RWQCB must develop an implementation plan to ensure attainment of the TMDL. In watersheds with significant silvicultural activity, the implementation plan will address timber operations and may require forest practices that are different than those in the Forest Practice Rules (Rules).

Since 1988, much has been learned about the effectiveness of the Rules and implementation Process, and there have been other major legal changes. In 1993, USEPA and National Oceanic and Atmospheric Administration (NOAA) promulgated new regulations to implement the 1990 Federal Coastal Zone Act Reauthorization Amendments (CZARA). These regulations mandate that states adopt requirements that conform with specified management measures for nonpoint source (NPS) pollution, including that from silviculture. In 1995, the BOF commissioned a report on the conformance of the Rules with the CZARA management measures. It was based on a series of public workshops and entitled, “Evaluation of the Coastal Zone Management Act”. Based on USEPA’s earlier Water Quality Management (WQM) plan conditions and these reports, USEPA and NOAA found that, while the State’s Rules conform with the silvicultural management measures prescribed under CZARA, additional measures are needed.

Furthermore, a number of regulatory alternatives to CDF's usual Timber Harvesting Plan (THP) process have either been developed (e.g., Sustained Yield Plan, Nonindustrial Timberland Management Plan, Modified THP, Program THP) or seen much wider application (e.g., exemptions, emergencies) in the intervening years. Exempt and emergency timber operations, which are not subject to interagency review, are perceived to be responsible for disproportionate significant adverse impacts.

The Z'berg-Nejedly Forest Practice Act of 1973 established the legislature's intent to protect and give consideration to the public's need for long-term watershed protection, fisheries and wildlife, and it directed the State Board of Forestry (BOF) to adopt regulations to control unreasonable effects on the beneficial uses of the State's waters. It now appears appropriate to establish regulations that specifically address timber harvesting operations in watersheds with threatened or impaired values. The changes in the Forest Practice Rules are necessary for maintaining the beneficial uses of water (which include aquatic habitat for threatened or endangered species) where they are in good condition, protecting them where they are threatened, and restoring them where they are impaired. This rulemaking package is intended to address the most immediately pressing issue: how to deal with timber operations in a watershed where: (1) water bodies are listed pursuant to CWA Section 303(d) as water quality limited due to factors (e.g., sediment, temperature, or large woody debris (LWD)) that may be affected by timber operations, or (2) populations of anadromous salmonids, other aquatic species, or riparian-dependent species that are listed as threatened or endangered under the State or Federal ESAs are currently supported or could feasibly be restored.

SPECIFIC PURPOSE OF THE REGULATION

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (a) states resource protection goals for every timber operation in a watershed with threatened or impaired water-related values. These goals are based on those collaboratively developed by many experts involved in the California Salmon Initiative and the Watershed Restoration and Protection Council. They address those natural factors that are most critical for water-related values and are most likely to be affected by timber operations. The goals do not prescribe any desired future conditions or numeric targets. Sediment loading, often the most severe water quality impact associated with timber operations, is addressed by the first two goals. The first four goals could apply to any land use; they express a policy of noninterference with natural recovery rates and processes, simply requiring that timber operations result in no adverse changes in sediment loading, bank and channel stability, migratory passage, and stream flow. The fifth and sixth goals address protection of beneficial functions of riparian zone vegetation and are more directly applicable to timber management. They have more of an active recovery component, because they are directly related to timber management activities that are fully under State jurisdiction, they are focused on the critical near-stream areas, and they address the other two major impacts of timber management on water-related values in California, increased thermal loading and decreased stream recruitment of LWD.

Consistent with the WPRC report, the proposed additional rule language (policy statement) under 14 CCR §§ 916.9 [936.9, 956.9], subsection (b) recognizes that the impairment of a water body or species that leads to a listing under CWA 303(d) or the ESAs generally does not occur as the result of a single catastrophic event, but as the cumulative result of many events over time and space. This policy is intended to bring about institutionalized recognition and acceptance of the reality and importance of adverse cumulative watershed effects and of the need to take responsibility for reducing them.

As discussed under 14 CCR 916, items 1, 2, and 4, the proposed additional rule language (policy statement) under 14 CCR §§ 916.9 [936.9, 956.9], subsection (c) recognizes the critical importance of near-stream/riparian areas along Class I and II waters and their beneficial functions in protecting water-related values. It recognizes that management priority in such areas is resource protection or restoration. Consistent with other aquatic conservation strategies, this provision creates an additional management buffer outside of the inner WLPZ. Timber management and operations would be lightest and most protective within the WLPZ, somewhat greater and less restricted in the outer zone, and least restricted elsewhere.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (d) clarifies that nonstandard practices, as approved by CDF and subsequently implemented, shall provide the higher level of protection needed in these watersheds.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (e) expands the minimum WLPZ width for Class I waters from 75 feet to 150 feet.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(1) is intended to provide informational requirements ensure that the timber harvesting and yarding within a Class I WLPZ will conform with the goals in subsection (a).

Where fish and other water-related values are already threatened or impaired, the project proponents must demonstrate that such operations can take place without causing additional threat or damage. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(2) is intended to allow such operations to continue while that demonstrative evidence is being developed.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(3) is intended to provide information regarding existing permanent crossings of Class I waters, including information on how they will be used or maintained during timber operations to minimize risks to water-related values (especially fish passage).

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(4) is intended to provide full disclosure of specifications for any new or reconstructed Class I road crossings needed to protect water-related values.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (g) is intended to address operations within an inner gorge. It is intended to prevent operations within an inner gorge or on excessively steep slopes from resulting in mass failure of the slopes, which could contribute significant amounts of soil and debris into a watercourse.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (h) is intended to ensure that all watercourse crossings are constructed to allow passage of debris to prevent blockage by requiring them to accommodate the waters from a 100 year flood event.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (i) is intended to provide minimum specifications for permanent culverts installed within Class I watercourses to ensure the adequate protection of aquatic species. These specifications are intended to address upstream and downstream movement of aquatic species at all life stages, as well as the transport of water, sediment, and debris at 100-year flood levels.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (j) is intended to prevent direct impacts to watercourses by prohibiting harvest within the channel zone.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (k) is intended to provide canopy retention standards for Class I waters that are consistent with CDF's "Coho Considerations" document.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (l) is intended to specify the minimum width for the Class II watercourse and lake protection zones (WLPZ). It is intended to establish a WLPZ width of 100 feet.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (m) is intended to provide canopy retention standards for Class II waters that are consistent with CDF's "Coho Considerations" document.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (n) is intended to ensure added protection for Class III watercourses. This protection will be provided through a required ELZ or EEZ, and through the retention of all hardwoods.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o) is intended to ensure adequate recruitment of the Large Woody Debris (LWD) needed to provide instream structure for proper hydrologic function and aquatic habitat to support water-related values.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (p) is intended to ensure that all relevant information is evaluated in developing appropriate winter period forest practices, and provides minimum operating standards for

winter period operations that are anticipated to prevent significant erosion and sedimentation.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (q) is intended to provide restrictions on the construction, reconstruction, or use of roads or landings so that soil or other material will not be transported to a watercourse or lake as a result of these operations.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (r) is intended to ensure that tractor road construction and use advance to the point that the installation of needed drainage facilities cannot be completed prior to the start of heavy rains.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (s) is intended to provide soil stabilization treatment standards that are needed to prevent accelerated soil erosion or movement within a WLPZ or Equipment Limitation Zone (ELZ).

a) The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(1) requires that all WLPZ/ELZ soil stabilization treatments must be described in the required plan so their adequacy can be ensured during plan review. Time limits for doing the treatments are established to ensure that soil disturbance does not get so far ahead of treatment that treatment cannot be completed prior to the start of heavy rains.

b) The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(2) requires the treatment of the traveled surface of roads to prevent generation of sediment or concentration of surface runoff during periods of use.

c) The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(3) requires the treatment of other specific disturbed areas to prevent the occurrence of a discharge of sediment or concentrated runoff into waters. Coverage of at least 90% is needed to ensure successful treatment.

d) The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(4) requires the treatment of an undisturbed area where its natural ability to filter sediment, minimize soil erosion, and stabilize banks of watercourses and lakes and otherwise buffer waters from the effects of a timber operation is low.

To reduce sediment loading from existing active erosion sites in the logging area, they need to be identified, their significance and the feasibility of remedying them needs to be evaluated, and a remedial action plan and schedule developed. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (p) requires that the plan preparer do the needed work and submit the remedial action plan as part of the required

plan so the adequacy of the work and plan can be evaluated. This subsection is related to (f)(3).

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (t) is intended to provide information related to sites with the potential to impact water resources, and that can be remediated. The information is to be provided in a plan that specifies the work to be done, and a time schedule for its completion.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (u) is intended to reduce sediment impacts associated with erosion originating from roads and landings through a required three year erosion control maintenance period on specified roads and landings. Three years is the maximum duration of the erosion control maintenance period allowed by statute.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (v) is intended to allow the use of offsetting sediment or thermal loading or other cumulative watershed effects that may exist throughout a planning watershed where they are fully described and the parties responsible for implementation are identified in the required plan. Those measures that most directly mitigate the timber operation's impacts are given preference.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (w) is intended to ensure that proposed WLPZ salvage logging is fully described and subject to agency evaluation through agency review of a required plan or SYP, other review by DFG, or NMFS review of a Habitat Conservation Plan.

Consistent with other rule sections, the proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (x) is intended to provide that alternative practices can be used where needed to achieve the goals.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (y) is intended to tighten the restrictions on site preparation in watercourses. It further requires that burning prescriptions minimize loss of LWD and that the measures to accomplish this be submitted in the required plan for evaluation.

Water drafting in small watercourses can adversely affect aquatic species in several ways: (i) too much water can be withdrawn to allow continued migration or reproduction, (ii) individuals can be sucked up through water intakes, (iii) construction and use of water holes and approaches can generate sediment and allow petroleum or other contaminants into the water. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (z) is intended to prevent these adverse effects on water-related values.

Emergency and exempt timber operations are not subject to interagency review, so their potential impacts cannot be fully evaluated. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (aa) is intended to exclude such operations from the zones established to protect water-related values.

NECESSITY

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (a) states resource protection goals for every timber operation in a watershed with threatened or impaired water-related values. These goals are necessary to address those natural factors that are most critical for water-related values and are most likely to be affected by timber operations such as sediment loading, which is often the most severe water quality impact associated with timber operations. The rule changes are necessary to clearly establish a policy of non-interference with natural recovery rates and processes, requiring that timber operations result in no adverse changes in sediment loading, bank and channel stability, migratory passage, and stream flow. Additionally, the rules changes are necessary for the protection of beneficial functions of riparian zone vegetation and those values associated with the critical near-stream areas. Furthermore, the rule changes are necessary to address two other major impacts of timber management on water-related values in California, increased thermal loading and decreased stream recruitment of LWD.

The proposed additional rule language (policy statement) under 14 CCR §§ 916.9 [936.9, 956.9], subsection (b) is necessary to bring about institutionalized recognition and acceptance of the reality and importance of adverse cumulative watershed effects, and of the need to take responsibility for reducing them.

The proposed additional rule language (policy statement) under 14 CCR §§ 916.9 [936.9, 956.9], subsection (c) is necessary to clearly establish that the protection, maintenance, or restoration of critically important near-stream/riparian areas is the primary objective along Class I and II waters in watersheds with threatened or impaired values.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (d) is necessary to clarify the Board's intent regarding the use of nonstandard practices in watersheds with threatened or impaired values.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (e) is needed because the preponderance of relevant science indicates that the greatest benefits to water-related values are provided by the vegetation and soils closest to the stream.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(1) is needed to help ensure that the timber harvesting and yarding within a Class I WLPZ will conform with the goals in subsection (a).

Timber operations in a Class I WLPZ are among the most potentially deleterious to fish and other water-related values. Where these values are already threatened or impaired, the project proponents must demonstrate that such operations can take place without causing additional threat or damage. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(2) is necessary to allow such operations to

continue while that evidence is being developed. Over time, high-quality monitoring results can be used to further adapt timber management practices within Class I WLPZs so that practices are protective, but no more restrictive than necessary.

Inadequately designed, located, constructed, and maintained legacy roads and watercourse crossings have often been reported to be among the worst contributors to additional sediment loading and blockage of fish passage in forested watersheds. Knowing about them allows them to be upgraded or removed to offset other sources of sediment generated by a timber operation. Knowing how they will otherwise be used or maintained during timber operations to minimize risks to water-related values (especially fish passage) is critical to ensuring that they do not generate additional problems. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(3) is needed to provide such information.

Inadequately designed, located and constructed new logging road crossings (especially culverts) are often reported as among the worst contributors to additional sediment loading and blockage of fish passage. Full disclosure of specifications for any new or reconstructed Class I road crossings is needed to protect water-related values. Specific requirements are needed for culvert crossings of Class I waters because they are documented as often impairing fish passage. They should be designed, located, and built to cause essentially no alteration of stream hydrologic and biologic functions. This should be confirmed by either: (i) analysis by a California-licensed Professional Engineer or (ii) compliance with the conservative design standards set forth in this section. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (f)(4) is needed to provide such information.

Coho salmon often inhabit watercourses in areas of geologic instability. The hillslopes in these areas are often composed of soft, poorly consolidated sedimentary rock. The mass movement of soil and debris from slides originating on steep inner gorges in these areas often contribute significant amounts of sediment to the watercourses. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (g) is needed to prevent operations in these steep inner gorge areas that would lead to landslides and subsequent impacts to water quality and fisheries habitat.

Undersized culverts may fail during periods of peak flow. The failure could contribute excessive amounts of sediment and debris downstream. The deposition of sediment into the watercourse can increase turbidity and result in aggradation of the watercourse channel. This would result in adverse impacts to the beneficial use of water including impacts to drinking water and fisheries habitat. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (h) is necessary to ensure that culverts are of an adequate size to avoid failure during peak flow events.

Inadequately designed and maintained new permanent culverts are often reported as among the worst contributors to additional sediment loading and blockage of fish passage. Adequate minimum design standards are needed to protect water-related values. Specific requirements are needed for culvert sizing and installation for Class I

watercourses because these are documented as often impairing fish passage. They should be designed, located, and built to cause essentially no alteration of stream hydrologic and biologic functions. This should be confirmed by either: (i) analysis by a California-licensed Professional Engineer or (ii) compliance with the conservative design standards set forth in this section. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (i) is needed to ensure new permanent culvert installation does not impact fisheries habitat in Class I watercourses.

Harvesting directly adjacent to a watercourse can lead to soil disturbance, or the removal of trees that may be providing shade and potential large woody debris. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (j) is needed to protect resources directly adjacent to the watercourses.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (k) is needed to provide canopy retention standards for Class I waters that are consistent with CDF's "Coho Considerations" document.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (l) is needed because the waters flowing from Class II watercourses help to maintain adequate temperatures and could contribute significant amounts of sediment to the downstream watercourses. The minimum width of the Class II WLPZ is necessary to ensure the protection of the beneficial uses of water, and to provide benefits to water-related values by retaining the vegetation and soils closest to the stream.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (m) is needed to provide canopy retention standards for Class II waters that are consistent with CDF's "Coho Considerations" document.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (n) is needed to ensure added protection is provided for Class III in situations where the risk of accelerated erosion and sedimentation is inherently very high. This protection is needed because any sediment entering Class III waters will be delivered to Class I or II waters.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o) is needed to ensure the recruitment of adequate Large Woody Debris (LWD) needed to provide instream structure for proper hydrologic function and aquatic habitat to support water-related values. The specifications for the retained trees are needed to ensure that all or most of them will in fact become instream LWD. Allowing replacement of a marked tree enables timber owners to harvest more valuable WLPZ trees if they are replaced with suitable, less valuable material that either grows within the WLPZ or is placed there by the owner.

Most timber operations during the winter period (October 15 to May 1) inherently pose higher risks of erosion and sedimentation than other operations. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (p) require a full winter

period operating plan, which is needed to ensure that all relevant information is evaluated in developing appropriate winter period forest practices. Soil disturbance during the winter period is especially likely to lead to erosion and sedimentation. The risk to water-related values is further increased when such disturbance is located on steep slopes or near to watercourses. The restriction on skid trail use and construction during the winter period is needed to eliminate this double jeopardy. Any sediment generated during the winter period that enters the area inundated during bankfull flows is very likely to be picked up by the stream within the season. This provision is needed to ensure that this does not happen.

Equipment operations during saturated soil conditions will cause soil disturbance that is highly likely to generate sediment and/or concentrate erosive surface runoff. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (q) is needed to ensure that this does not happen.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (r) is needed to minimize erosion and sedimentation from tractor roads during occasional heavy rains which may occur at any time of year. The rule language is necessary to ensure that tractor road construction and use does not get so far ahead of drainage facility installation that installation of needed facilities cannot be completed prior to the start of heavy rains.

It is highly likely that any soil eroded from within a WLPZ or Equipment Limitation Zone (ELZ) will enter the adjacent waters. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (s) is necessary to prevent soil movement and erosion in these critical zones. These soil stabilization treatment standards are needed to prevent accelerated soil erosion or movement within these zones.

The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(1) is needed in order to provide the reviewing agencies the necessary information related to WLPZ/ELZ soil stabilization treatments so their adequacy can be ensured during plan review. It is also necessary to establish time limits for doing the treatments to ensure that soil disturbance does not get so far ahead of treatment that treatment cannot be completed prior to the start of heavy rains.

Treatment of the traveled surface of roads is needed to prevent generation of sediment or concentration of surface runoff during periods of use. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(2) is necessary to establish such treatment.

Treatment of other disturbed areas that, by their location and nature, threaten to discharge sediment or concentrated runoff into waters is needed to prevent that from occurring. Coverage of at least 90% is needed to ensure successful treatment. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(3) is necessary to establish such treatment.

Treatment of an undisturbed area is needed where its natural ability to filter sediment, minimize soil erosion, and stabilize banks of watercourses and lakes and otherwise buffer waters from the effects of a timber operation is low. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (o)(4) is necessary to establish such treatment.

To reduce sediment loading from existing active erosion sites in the logging area, they need to be identified, their significance and the feasibility of remedying them needs to be evaluated, and a remedial action plan and schedule developed. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (t) is necessary to establish the requirement that the plan preparer do the needed work and submit the remedial action plan as part of the required plan so the adequacy of the work and plan can be evaluated.

Inadequate road maintenance has repeatedly been identified as a chronic source of sediment loading. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (u) is necessary to provide the perpetual maintenance that would significantly reduce this impact on water-related values. Three years is the maximum duration of the erosion control maintenance period allowed by statute.

Opportunities for offsetting sediment or thermal loading or other cumulative watershed effects may exist throughout a planning watershed. Sometimes, a timber operation may need to use such offsets to ensure that it does not deleteriously interfere with natural rates and process of recovery of water-related values. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (v) is needed to allow the use of such offsets where they are fully described and the parties responsible for implementation are identified in the required plan. Those measures that most directly mitigate the timber operation's impacts are given preference.

Streamside salvage logging removes dead and dying trees, trees that are the most likely to provide LWD and habitat for riparian-dependent species. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (w) is necessary to ensure that proposed WLPZ salvage logging is fully described and subject to agency evaluation through agency review of a required plan or SYP, other review by DFG, or NMFS review of a Habitat Conservation Plan.

Consistent with other Rule sections, the proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (x) is necessary to provide allowances for the use of alternative practices where needed to achieve the goals of protection and restoration in watersheds with threatened or impaired values.

Because they conduct sediment directly into Class I or II waters, any activities that cause sediment disturbance in the channel or sediment movement into the channel need to be prohibited. Similarly, LWD often buttresses the toes of colluvial slopes leading into Class III channels, provides in-channel sediment retention/detention structures, and minimize accelerated channel scour and downcutting. Prescribed site preparation

burning can consume this LWD, causing large amounts of erosion and sedimentation. Therefore, burning prescriptions need to minimize loss of Class III LWD and the measures to accomplish this need to be submitted in the required plan for evaluation. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (y) is needed to tighten the restrictions on site preparation in Class III watercourses.

Water drafting in small watercourses can adversely affect aquatic species in several ways: (i) too much water can be withdrawn to allow continued migration or reproduction, (ii) individuals can be sucked up through water intakes, (iii) construction and use of water holes and approaches can generate sediment and allow petroleum or other contaminants into the water. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (z) is needed to prevent these adverse effects on water-related values.

Emergency and exempt timber operations are not subject to interagency review, so their potential impacts cannot be fully evaluated. The proposed additional rule language under 14 CCR §§ 916.9 [936.9, 956.9], subsection (aa) excludes such operations from the zones established to protect water-related values.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives to these proposed regulations were presented to, or considered by the Board at this time.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

The Board staff estimated that this regulation could potentially result in a significant adverse economic impact on businesses. However, the costs associated with the requirements imposed by the new regulations are difficult to estimate as they vary greatly. The Board staff estimated that this regulation could potentially result in long-term costs that would vary greatly depending on, but not limited to 1) the current condition of the watershed, (i.e. beneficial uses of water, riparian habitat, or others), 2) the topographic and geologic features affecting harvesting practices, 3) the affected area under the control of the plan submitter, and 4) the long-term land management goals of the plan submitter. The protection measures currently provided in the rules and those that are proposed under this rulemaking package are anticipated to provide the means to secure restoration over a long period of time in most instances. Therefore, some cost will be incurred over time and will not significantly impact overall cost of land management. However, some costs, such as those associated with the design and implementation of

long term monitoring programs could result in substantial costs, both short term and long term. However, these costs can also vary widely depending on numerous factors including, but not limited to the type of parameters targeted for monitoring, the frequency of monitoring, the types of equipment necessary and available to conduct the monitoring, and numerous other factors. Broad estimates for monitoring indicate that average yearly monitoring cost could range from $30,000.00 to $50,000.00, and may exceed $100,000.00 depending on the extent of monitoring required, and the size of the area to be monitored. Considering the broad range of circumstances that would affect costs associated with the new requirements, the Board has determined that estimations of the potential cost for this regulation would difficult to present in a format that would provide for meaningful public disclosure. However, the following estimations of costs associated with various portions of the proposed rules are provided for consideration:

One cost associated with the rule changes is related to opportunity costs, or impacts to Long Term Sustained Yield (LTSY). Expanding the Class I Watercourse and Lake Protection Zone (WLPZ) minimum width to 150 feet is likely to affect almost all standard-width Class I WLPZs, since very little is currently be at 150 feet. (Nearly all WLPZs on >50% are probably cable and thus the table value of 150 feet is usually reduced to 100 feet.) The effect is to increase WLPZ area by about 50% or more, with that increase coming from timberland whose productivity and yield are otherwise largely unconstrained by stream protection considerations. It is estimated that this change will impact long term sustainable yields, which may be reduced by one or two percent for ownerships on the north coast.

In addition, the requirement for long-term effectiveness monitoring could also cause timberland owners to avoid operations within a Class I WLPZ to avoid the cost of the monitoring. However, it will be hard to entirely avoid timber operations within the Class I WLPZ in most cases. If the timberland owner chooses to avoid operations within the WLPZ, they will be affected by cost associated with the reduction in LTSY, if they choose to operate within the WLPZ, they will be affected by the costs of long-term effectiveness monitoring. Costs estimates for monitoring along ¼ to 1 mile of Class I could include:

> For water temperature, one year of pre-harvest baseline data and one year of post-harvest data could cost about $1,000 to $3,000, including instruments, labor, data processing, and reporting, if done by an RPF. This cost could double if done by a scientist, and could triple if a consultant does the work.
>
> For no net increase in sediment, longer post-harvest monitoring would be needed, maybe 5 to 20 years. If the approved completion report equals the end of THP enforceability (except stocking and erosion maintenance), then the extent of “long term” may not be very long. Collection and analysis of sediment data is more costly than for temperature data. A short two- or three-year program may cost $4,000 to $10,000. A thorough long-term project over many years could run up to $20,000 or more.

For no net loss of LWD or recruitment potential, that should just be counting down and standing-future LWD, before and after; the cost could be $1,000 to $2,000.

The cost associated with describing existing Class I crossings, including RPF planning and writing time, could be as much as $150 per crossing.

The cost associated with providing specifications for construction and use of new Class I crossings could be as much as $200 per crossing considering the RPF's time.

Establishing a Special Management Zone (SMZ) for inner gorges could result in impacts to LTSY as described above. This could result in an additional ½ to 1- percent loss of regional LTSY similar to that from increasing the minimum Class I WLPZ.

Establishing a Special Management Zone for inner gorges could result in expenditure of RPF time to evaluate and flag the SMZs. This could result in a cost of $500 to $2,000 per plan in some areas. A review by a Certified Engineering Geologist (CEG) could cost $500 to $4,000 per plan, depending on complexity and whether the geologist was an employee of the landowner or whether the landowner would have to hire a consultant.

Depending on the circumstances and previous management of a parcel, the proposed change in crossings from 50-year to 100-year could result in increased cost of $500 to $2,000.

Redesigning culverts on Class I watercourses to collect bedload, including the requirement that the culvert be as wide as the channel may lead to use of non-round culverts (e.g. elliptical), or to more use of bridges and arches on large streams. These structures are more expensive to buy and install than round pipes. Stream cross sections tend to be wider than they are deep, so a round pipe sized for discharge capacity alone probably won’t meet the requirements of this rule. This change in the rules could result in an average cost increase of 15% per new Class I crossing, or $500 to $5,000 per plan.

The 20% countersink requirement could reduce the cross sectional area of the culvert by a little over 14%. Getting this 14% back requires increasing the pipe diameter by about 7% (although 20% of this additional diameter would also have to be buried). These increases are similar in scale to the effect of going from 50-year to 100-year sizing, but are cumulative. There could be an additional cost of the 20% countersink of Class I culverts at between $300 and $1,500 per plan, when you consider many plans with no culverted Class I crossings, and a few with rather expensive crossings.

In order to prevent headcutting that could result from dropping the pipe, the landowner may have to use riprap, maybe stairstepped to allow fish passage. The average crossing may need 10 tons at $25 per ton delivered, plus $250 for placement. This would result in a cost of $500. If this cost were averaged over many plans without new Class I crossings, it may only be $100 per plan.

The canopy retention requirements for Class I watercourses could result in an additional loss of LTSY; perhaps as much as ½ to 1% loss.

Establishing a minimum 100-foot WLPZ for Class II watercourses could result in an additional ½% loss of LTSY.

The canopy retention requirements for Class II watercourses could result in an additional ½% loss of LTSY.

The requirement for permanent retention of Large Woody Debris (LWD) recruitment trees may require time by an RPF to analyze the WLPZ stand and mark trees. This could take an additional two days of fieldwork per plan. Depending on the cost to retain an RPF, the additional costs could range between $500 to $2,500 per plan.

The requirements for operations during extended wet periods could result in additional costs to the LTO due to stopping-starting, waiting, and extended winter shutdown periods. These costs could be as much as $2,000 to $10,000 per plan. Putting rock on roads and landings might cost $5,000 to $20,000 per plan. The wet road provisions could also result in delays, or a requirement for road rocking. This could result in an additional cost of $500 to $5,000 per plan.

The requirements pertaining to the installation of drainage facilities could be fairly unpredictable because they require waterbars before even unpredicted rain. To fully comply could cause the operator to expend a few extra hours of tractor time every week at $75 per hour. This could result in an additional cost of $500 for a small tractor plan to $3,000 for a large one.

The soil stabilization measures could result the use of a surface coating with oil or some similar material that won't wash away in the winter, and will last through the 3-year erosion maintenance period. It could also lead to side sloping and heavy mulching of abandoned road sections. Rocking could cost $20,000 per mile. These requirements could result in a huge range of costs from $0 to $50,000 per plan (although a lot of existing WLPZ road is already rocked). The oil or other super-stabilization could add half of what the rock cost (i.e. up to $10,000 per plan).

Mulching other disturbed areas, particularly the additional areas and skid trails in the EEZ/ELZ, will cost $500 to $2,000 per plan.

In regard to erosion remediation, the work required would be very site specific. However, there could be significant RPF and consulting CEG time, as well as operational costs. Considering the development of the plan, and implementation costs, these requirements could result in additional costs of up to $100,000, if included with a large plan.

In regard to the requirement for 3-year erosion maintenance; if one year is normal, then additional costs could be from $500 for a few inspections to $5,000+ if things need to be fixed.

In regard to limits to site preparation activities, protection of vegetation and duff in the ELZ/EEZ means very expensive control lines around Class III watercourses, and burning only during cool prescriptions when incomplete site preparation will result. The impact will be higher site preparation and planting costs. This could result in additional costs of $5,000 per evenaged regeneration plan.

Considering the above cost estimates, the Board staff has determined that the proposed regulations are likely to have an adverse economic impact on businesses, and such impact may be significant.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has not identified any adverse environmental effects from the proposed action.

14 CCR §§ 923.9 [943.9, 963.9] **Roads and Landings in Watersheds with Threatened or Impaired Values**

PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS

In 1996, the State Fish and Game Commission listed Coho salmon south of San Francisco Bay as threatened under the State Endangered Species Act (ESA), and the Department of Fish and Game subsequently executed a 2090 agreement with the California Department of Forestry and Fire Protection (CDF) to provide additional protection for Coho salmon. In 1997, the National Marine Fisheries Service (NMFS) listed Coho salmon as threatened throughout its range in California under the Federal ESA, and Steelhead trout have been designated as candidate species.

Additionally, the U.S. Environmental Protection Agency (USEPA) has listed nineteen North Coast streams as water quality limited under Section 303(d) of the Federal Clean Water Act (CWA); many of the listings are for factors that can be affected by timber operations. The *1988 California 303(d) List and TMDL Priority Schedule* indicates that many of the streams listed are impaired due to “sedimentation/siltation”. In forested watersheds suffering from excessive sediment loading, most of the sediment from human sources is associated with the road system. The *1988 California 303(d) List* specifically cites “Logging Road Construction/Maintenance” as a source in regard to the impairment of many of these streams. In 1997, USEPA entered into a court-mandated consent decree requiring that Total Maximum Daily Loads (TMDLs) be established for these streams over the next 15 years according to a specified schedule. Upon establishment of a TMDL by either USEPA or a California Regional Water Quality Control Board (RWQCB), the

RWQCB must develop an implementation plan to ensure attainment of the TMDL. In watersheds with significant silvicultural activity, the implementation plan will address timber operations and may require forest practices that are different than those in the Forest Practice Rules (Rules).

The Z'berg-Nejedly Forest Practice Act of 1973 established the legislature's intent to protect and give consideration to the public's need for long-term watershed protection, fisheries and wildlife, and it directed the State Board of Forestry (BOF) to adopt regulations to control unreasonable effects on the beneficial uses of the State's waters. Since the listing of many watersheds in the state as impaired due to sedimentation or siltation, much of which has been attributed to the construction of roads in association with timber harvesting activities; it now appears appropriate to establish regulations that specifically address roads and landings in watersheds with threatened or impaired values. The changes in the Forest Practice Rules are necessary for maintaining the beneficial uses of water (which include aquatic habitat for threatened or endangered species) where they are in good condition, protecting them where they are threatened, and restoring them where they are impaired.

SPECIFIC PURPOSE OF THE REGULATION

The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (a) is intended to require the disclosure of the locations and specifications for road and landing abandonment or other measures to achieve no net increase in road density within the ownership within a watershed, so that the adequacy of the measures can be evaluated and perhaps compared for consistency with other proposals of adjacent landowners.

The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (b) is intended to establish appropriate standards for the width of logging roads, and to include appropriate specifications for road drainage in watersheds with threatened or impaired values.

The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (c) is intended to provide information on the limiting factors associated with road construction, and on road designs, which will help to determine if the specified provisions for road construction are adequate to reduce the risk to water-related values. The rule is also intended to provide specifications related to road construction and the deposition of spoils, as well as requirements for recountouring of slopes if fills are removed.

The proposed additional rule language under 4 CCR §§ 923.9 [943.9, 963.9], subsection (d) is intended to ensure that roads with excessive grades will be adequately surfaced.

The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (e) is intended to ensure that the proposed measures regarding the location, design, placement, and removal of drainage structures and erosion control features, and the rationale used to develop them are included in the plan and can be evaluated. The rule

language is also intended to establish specific minimum requirements for drainage structures and erosion control features in watersheds with threatened or impaired values.

NECESSITY

In forested watersheds suffering from excessive sediment loading, most of the sediment from human sources is associated with the road system. Reducing (or not increasing) a watershed's road density is an important way to achieve the goals of 14 CCR 916.9 [936.9, 956.9](a). Currently, there is no regulatory mechanism to achieve watershed-scale road planning and management, but road systems within ownerships within watersheds can be managed. The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (a) requires the disclosure of the locations and specifications for road and landing abandonment or other measures to achieve no net increase in road density within the ownership within a watershed. This is necessary so that the adequacy of the measures can be evaluated and perhaps compared for consistency with other proposals of adjacent landowners.

The wider the road (and inside ditch) the higher, and therefore less stable, the cutbank and the more spoils will be generated. Inside ditches concentrate and divert runoff into areas not adapted to receiving the additional flows. The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (b) is necessary to minimize mass wasting potential. New roads must be as narrow and hydrologically invisible as possible. Rolling dips are generally preferred because they do not need to be removed for road use and are not as easily damaged as water bars. Field observations indicate that rolling dips lose their effectiveness where road grades exceed 7 percent.

Fill and cutslope failures are primary sources of sediment delivered from roads. Where new roads are to cross steep slopes, information is needed on the limiting factors and on road designs that are needed to reduce the risk to water-related values. The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (c) is needed to provide such information.

Roads with steep grades transport water at higher rates of speed, which could result in damage to the road's surface, and the transport of road surface materials into a watercourse. The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (d) is necessary to ensure that roads with steep grades are adequately surfaced to prevent the breakdown of the road's surface, and the subsequent transport of sediment to a watercourse.

The proposed additional rule language under 14 CCR §§ 923.9 [943.9, 963.9], subsection (e) is needed to address those situations that pose threats of additional sediment loading, either directly or through inability to perform needed maintenance. The rule is needed to reduce this elevated risk where it exists by removing, oversizing or reinforcing drainage structures and erosion control features, or designing them to be self-maintaining. This provision is necessary to ensure that the proposed measures and the rationale used to develop them are included in the plan and can be evaluated.

ALTERNATIVES TO THE REGULATION CONSIDERED BY THE BOARD AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES

No other alternatives were presented to, or considered by the Board at this time.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

The Board has not identified any alternatives that would lessen any adverse impact on small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON ANY BUSINESS

The Board staff estimated that this regulation could potentially result in a significant adverse economic impact on businesses. The protection measures currently provided in the rules and those that are proposed under this rulemaking package are anticipated to provide the means to secure restoration over a long period of time in most instances. These costs can vary widely. Considering the broad range of circumstances that would affect costs associated with the new requirements, the Board has determined that estimations of the potential cost for this regulation would difficult to present in a format that would provide for meaningful public disclosure. However, the following estimations of costs associated with various portions of the proposed rules are provided for consideration:

In regard to maintaining or reducing the density of roads in a watershed, this regulation may not significantly impact landowners with established extensive road systems. These landowners would be faced with additional costs associated with road abandonment. Road removal project costs can vary widely depending on hillslope angle, road width, the types of treatment, equipment and manual labor, and replanting costs. Road removal costs could average about $2,000.00 per mile. Basic road decompaction and re-seeding costs about $500.00 per mile; ripping, decompaction, sidecast removal, and stream excavation (crossing removal) costs approximately $2,000.00 per mile; while the price for full recountouring with hydromulching and re-vegetation approaches $15,000.00 per mile. One benefit of road removal is savings in road maintenance, estimated at $300.00 to $500.00 per mile annually.

Landowners that are just starting to develop a road system on their property within a watershed may be forced to consider helicopter logging. In those cases, the cost of this rule could be very high, ranging between $150 to $200 per mbf.

For operations on slopes greater that 50%, this could require the work or review of work by a Certified Engineering Geologist (CEG). This could cost from $500 to $4,000 per plan, depending on complexity and whether the geologist was an employee of the landowner or whether the landowner would have to hire a consultant. Additionally,

excavator/end-haul road construction could range from $2,000 to $5,000 per mile higher than dozer/side-cast construction. However, current operations are typically planned to avoid 50% slopes with new road construction. Therefore, the cost per plan for full bench construction could be less than $5,000. This is also likely true for those roads with grades in excess of 20% for distances greater that 500 feet. Again, the average plan maybe less than $5,000.

In regard to areas with problem crossings, this is very site specific. The additional costs to replace, armor, or remove marginal crossings could be in excess of tens of thousands of dollars on a single plan. It is difficult to estimate how often this rule would be applied in the state.

Considering the above cost estimates, the Board staff has determined that the proposed regulations are likely to have an adverse economic impact on businesses, and such impact may be significant.

POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS

The Board has not identified any adverse environmental effects from the proposed action.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDY, REPORTS, OR DOCUMENTS

The Board of Forestry and Fire Protection consulted the following listed information and/or publications as referenced in this *Statement of Reasons.* The information was provided by the California State Water Resources Control Board, the California Regional Water Quality Control Boards, the California Department of Fish and Game, the California Department of Forestry and Fire Protection, the Monitoring Study Group of the California State Board of Forestry and Fire Protection, the Board staff, and other sources to address potential adverse impacts to watercourses with threatened or impaired values (available upon request). Unless otherwise noted in this *Initial Statement of Reasons*, the Board did not rely on any other technical, theoretical, or empirical studies, reports or documents in proposing the adoption of this regulation.

1. Letter to Mr. Robert Kerstiens, Chairman, Board of Forestry and Fire Protection from California Environmental Protection Agency and the Resources Agency, with proposed rules, June 30, 1999.
2. Interim Report to the California State Board of Forestry and Fire Protection, Hillslope Monitoring Program: Monitoring Results from 1996 through 1998 (June, 1999)
3. Explanation and Justification for Proposed Forest Practice Rules Addressing Watersheds with Threatened or Impaired Values
4. Coho Salmon Biological Opinion and 2090 Agreement for Timber Harvest Plans South of San Francisco Bay, May 7, 1996.

5. Coho Salmon (*Oncorhynchus kisutch*) Considerations for Timber Harvests under the California Forest Practice Rules, April 29, 1997.
6. Special Order to Provide Incidental Take of Coho Salmon South of San Francisco Bay during Candidacy Period, May 9, 1994.
7. Draft Rule Language, Coho Considerations, 1999.
8. Proposed Forest Practice Rule Modifications; affected sections, May 10, 1999.
9. Public Resources Code §§ 4551, 4513, 4514.3, 4551.5, 4551.7, 4552, 4553, 4562.5, 4562.7, 4562.9, 4582, and 4584 *et seq*.
10. Barclays Official California Code of Regulations
11. Letter to the State Water Resources Control Board from USEPA, May 12, 1999.
12. 1998 California 303(d) List and TMDL Priority Schedule, May 12, 1999.
13. Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska; Lee H. MacDonald, Smart Alan, W., and Wissmar, Robert C., 1991.
14. California's Nonpoint Source Pollution Control Program, Public Release Draft including cover letter, July 2, 1999.
15. Report of the Scientific Review Panel on California Forest Practice Rules and Salmonid Habitat, Scientific Review Panel, June 1999.
16. TMDLs-What are they and how do they work?, NCRWQCB.
17. Current Treatment of Slope Stability Issues in the THP Process, Report to the Board of Forestry, William C. Stewart, February 1999.
18. Note 45-Guidelines for Geologic Reports for Timber Harvesting, California Department of Conservation, Division of Mines and Geology, Rev. 7/97.
19. Note 50-Factors Affecting Landslides in Forested Terrain, California Department of Conservation, Division of Mines and Geology, Rev. 6/97.
20. Matrix of Riparian and Watercourse Prescriptions, July 1999.
21. Estimated Costs Associated with Proposed New Forest Practice Rules, CDF; June, 1999.
22. Sensitive Watersheds with 1% or More Private Forest Land, Map, FRAP.
23. 303D TMDL Priority Watersheds and River Reaches, Map, USDA.

Pursuant to Government Code § 11346.2(b)(6): In order to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues as those addressed under the proposed regulation revisions listed in this *Statement of Reasons*; the Board has directed the staff to review the Code of Federal Regulations. The Board staff determined that no unnecessary duplication or conflict exists.

PROPOSED TEXT

The proposed revisions or additions to the existing rule language is represented in the following manner:

> UNDERLINE indicates an addition to the California Code of Regulations, and
>
> ~~STRIKETHROUGH~~ indicates a deletion from the California Code of Regulations.

All other text is existing rule language.

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