

**ASSISTING THE BOARD OF FORESTRY IN RULEMAKING FOR THE  
SENSITIVE WATERSHED AND RELATED RULE PACKAGES**

**Completion Report**

**Contract No: 8CA17184  
Andrea E. Tuttle**

**Contract Period: May 25, 1992 - March 31, 1994**

**Submitted to:**

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**Submittal Date:**

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The purpose of this report is to summarize work completed during the 23-month period of this contract. Also enclosed are copies of the written materials prepared by the consultant in conjunction with work on the Sensitive Watershed Rule Package.

**Background**

Following the defeat of the Forest Forever initiative in November, 1990, the California Legislature engaged in intense debate concerning the harvest of timber on private lands. The process was intensely political and complex, and resulted in the defeat of two major legislative efforts, one by gubernatorial veto, the other by defeat in the Assembly. During the height of the debate, deep rifts formed within the environmental community and the timber industry. As the arena shifted from the Legislature to the Board of Forestry, attention focused on developing a regulatory framework that was, to the extent possible, based on scientific information.

This contract was formulated in early 1992 while the second legislative effort, the "Grand Accord", was still under consideration in the Assembly. During this period the Board undertook an independent program to formulate new forest practice rules administratively. Rule-making concentrated on four subject areas extracted from the proposed legislation: sustained yield, old-growth and late-seral protection, sensitive watersheds, and watercourse protection.

Both the "Grand Accord" and the earlier "Sierra Accord" contained the concept of designating certain watersheds as "sensitive" to further timber operations. The concept called for providing special protection measures to watersheds that, for various reasons, are particularly susceptible to damage from timber-related activities. Although the approach for regulating harvests within sensitive watersheds was substantially changed, the concept of designating watersheds as "sensitive" remained an integral part of the Board's rule package.

The intent of this contract was to provide technical assistance in formulating and implementing a Sensitive Watershed rule. It was anticipated that the rule would be adopted sometime during the

course of the contract, and that assistance would be provided in the review of one or more nominated watersheds. For reasons primarily related to problems with the sustained yield portion of the package, the date at which the Sensitive Watershed rule became effective was delayed to March 1, 1994, which was the end of the contract period. In spite of one contract extension, no watersheds could be nominated within the period of the contract.

Substantial technical support was contributed by the consultant during the development of the rule and preparation for implementation, as described below. To supplement the scope of work, however, tasks related to other watershed activities of the Board were added, especially related to the development of the Pilot Monitoring Program.

### **The Sensitive Watershed Rule**

In its final form the Sensitive Watershed rule provides a process for the public and agencies to bring watersheds with special protection needs to the attention of the Board. The rule allows the Board to write rules that are tailored to specific problems within a watershed that will reduce the adverse impacts of further timber operations.

The rule depends upon nominations being submitted to the Board by the public or agencies. Nominations will be evaluated by a committee appointed by the Board, and forwarded to the Board for public hearing and decision. In designating a watershed as sensitive, the Board is required to make findings that there is a reasonable potential that further timber operations will cause or contribute to ongoing, significant adverse cumulative impacts, and that mitigation of those effects requires the application of protection measures not otherwise required by the Forest Practice Rules.

The rule does not prescribe specific protection measures, but rather requires the Board to specify measures that are appropriate to the identified problems at the time a watershed is designated. The protection measures will be adopted as Board rules, and will be enforced as a condition of approval for THPs within the watershed, similar to special treatment rules.

Prior legislative versions called for specific harvest limits within sensitive watersheds. For example, early provisions would have limited even-aged management in sensitive watersheds to a maximum of 15% in any ten-year period, and limited harvest to 27% of the weighted average basal area within a decade. During the course of the public hearings the Board eventually eliminated these options on grounds that such specific prescriptions may not be effective for all watersheds, would be difficult to administer, and could not be scientifically justified in all cases.

It is hoped that operation of the new rule will result in information being submitted to the Board for areas in which the public has the most concern, and for which true problems can be demonstrated. The analyses will provide the information necessary for targeting mitigation and monitoring efforts, thereby increasing the effectiveness of the THP review process, and improving the protection of watershed resources.

The state program of Sensitive Watershed designation should not be confused with the Key Watersheds program of the federal Forest Ecosystem Management Assessment Team (FEMAT). The state process depends on the nomination of watersheds by the public or agencies, and is specifically geared to making revisions in the state forest practice rules for areas designated as sensitive. All privately-owned, commercial timberland in California is potentially eligible for nomination.

In contrast, as currently proposed, the federal program depends on selection of key watersheds by an interagency technical group. Key watersheds will be the focus of an interagency watershed analysis program, and the target of restoration efforts. Key watersheds are limited to the range of the northern spotted owl, and will primarily lie within federal lands.

Over time, some geographical overlap of the two programs may occur if a Sensitive Watershed is designated within the same drainage as a Key Watershed, particularly within areas of mixed public-private ownership. In such cases, cooperative efforts should be explored to enhance basin-wide resource protection.

Further information on the Sensitive Watershed nomination process and a description of characteristics that contribute to watershed sensitivity can be found in the background staff paper, the public guidance document, and the rule language which are appended to this report. Copies of the public guidance document and the "Stream Reach" newsletter describing watershed and water-quality monitoring programs of the Board can be obtained from the Board office.

### **Reviewing Sensitive Watershed Nominations: The Nominations Review Committee**

On March 2, 1994 the Board adopted a policy concerning the review of sensitive watershed nominations. The policy calls for Board appointment of a Nominations Review Committee consisting of one member from each of four state agencies (CDF, Dept. of Fish and Game, Regional Water Quality Control Board, and Division of Mines and Geology), one person representing the public, and one representing forest landowners. Additional members may be appointed at the discretion of the Board. This committee structure replaces the one specified in the rule which called for participation of the District Technical Advisory Committees. These committees have been discontinued due to budget constraints.

The Nomination Review Committee is charged with the following:

- 1) Screening nominations for compliance with the informational requirements of the rule
- 2) Determining whether the nomination is supported by substantial evidence
- 3) Forwarding a recommendation for approval or denial to the Board within 120 days of the date of receipt by the committee (or longer as provided by the Board)

Recommendations from the Committee to the Board must be accompanied by:

- 1) A description of the substantial information contained in the nomination;
- 2) Reasons why the current forest practice rules are inadequate to protect the resource at risk;
- 3) Information concerning the additional protection measures needed, such as: on- or off-site mitigation; additional standards for timber operations; methods to monitor mitigations; additional information required in THPs; additional exemptions etc.

The Nominations Review Committee will need to meet at least twice under the provisions of the rule. The purpose of the first meeting is to determine whether the nomination complies with the informational requirements of the rule. If it does, a statement must be published providing public notice of the nomination. The notice should also provide information on the time and place of the workshop (or other meeting format) that will be held to formulate the committee's recommendation.

The Committee must forward its recommendations to the Board within 120 days of receiving the nomination from the Board (or longer as provided by the Board). The Board must then consider the committee recommendation at a public hearing to be held within 60 days of receipt from the committee.

### **Activities Conducted During the Contract Period**

Throughout the development of the Sensitive Watershed rule the consultant provided technical assistance to the Board and staff on watershed processes and design of a watershed nomination program. Following rule adoption, the consultant drafted a Public Guidance document to assist in rule implementation. The consultant also participated in development of the Pilot Monitoring Program to evaluate the effectiveness of the forest practice rules, since monitoring will be one of several elements considered during the watershed nomination process.

#### **1. Assistance in Rule Development**

During the period of May, 1992 through March, 1994 the consultant participated in most meetings of the Forest Practice Committee and the Board when the Sensitive Watershed Rule was discussed. Specific dates and tasks are listed in the progress reports submitted during the contract period. The consultant participated in staff discussions on each version of the rule as different options were formulated and amended by the Board.

In addition, the consultant participated in discussions with individual Board members, CDF and state agency staff, the U.S. Forest Service, and members of the public concerning various aspects of the rule. For example, assistance was provided to members of watershed associations in Paradise and northcoastal areas, and other state agencies.

In the early stages the consultant contributed to preparation of a staff paper, in cooperation with Peter Cafferata, CDF watershed specialist, entitled "Sensitive Watersheds Background

Paper", submitted to the Board in June, 1992. The paper presented the rationale for a Sensitive Watershed program, summarized the legal and regulatory situation, suggested criteria for designating watersheds, described mitigation measures that could be appropriate, and summarized the characteristics of specific watersheds that might be considered for sensitive designation. This document was incorporated as a portion of the Board's technical record supporting the rule.

## **2. Response to Comments**

A substantial period of time was spent drafting written responses to comments submitted during public hearings as required by the rule-making process of the Board and the Administrative Procedures Act. The consultant participated in preparing approximately 100 pages of comments for the Sensitive Watershed rule, containing approximately 700 comments from 120 letters and persons presenting oral testimony.

## **3. Public Guidance Document**

Following final adoption of the Sensitive Watershed rule the consultant participated in drafting a Guidance Document for public distribution. The document is designed to provide a "plain English" explanation of the rule to assist members of the public and agencies who may be considering a watershed nomination.

The guidance document describes the requirements of the rule, the findings required by the Board to make a designation, and the process by which nominations will be handled. It presents a suggested format for preparing watershed nominations, and describes each of the required elements. A suggested cover sheet and format for the required newspaper notice are included.

The document will be available at CDF offices throughout the state. Announcements concerning the availability of the document will be made in "Stream Reach", a Board-sponsored newsletter targeted at persons interested in water quality and watershed issues. The CDF Public Affairs specialist has also been requested to help in public notification.

## **4. Pilot Monitoring Program**

Pursuant to the federal Clean Water Act, the Board of Forestry is required to develop a regulatory program to protect water quality from non-point sources of pollution, which includes timber operations. Since 1977 the Board has been engaged in a process that will eventually result in certification of the forest practice rules as "Best Management Practices".

Work is currently underway on a program to monitor rule effectiveness. It became clear that monitoring of mitigation measures would potentially be an important element in the

Sensitive Watershed program, and therefore the inclusion of these tasks within the contract was justified. The consultant joined the Monitoring Study Group (MSG) and participated in the design of the pilot program to develop monitoring methods.

The consultant participated in the review and revision of the MSG report submitted to the Board in April, 1993. This report laid out the framework for a pilot and long-term monitoring program, including suggestions for site selection, parameters to be tested, evaluation techniques, and sampling protocol. The consultant also participated in the development and field-testing of forms to be used in evaluating the hillslope aspects of timber operations.

## 5. Additional Tasks

In addition to the above, the consultant participated in a variety of tasks which relate to watershed processes. Specifically, the consultant participated in task formulation, review of bids, and/or progress reports for five watershed-related contracts: 1) the CalWater contract for delineating administrative units on privately-owned timberland known as "planning watersheds"; 2) the Domestic Water Supply contract for identifying domestic water supplies with 5 or more connections located in commercial timberland; 3) the Highly Erosive Watershed contract for identifying watersheds in California timberland with a high intrinsic potential for erosion; 4) the Pilot Monitoring Program Oversight contract to provide outside objective review of the water-quality monitoring program; and 5) the geological mapping portion of the Pilot Monitoring Program to provide geologic information on the three watersheds used to test monitoring methods.

In addition, the consultant attended Committee and Board meetings on fisheries issues, especially those concerning stocks at risk and the recent petition to list the Coho salmon under state and federal law.

The consultant reviewed and commented on draft versions of the "Stream Reach" publication, particularly on articles related to the Sensitive Watershed process.

## Written Materials Submitted

The attached materials are to be considered as products submitted in partial fulfillment of the requirements of this contract.

- o Staff paper: "Sensitive Watersheds Background Paper" June, 1992
- o Public Guidance document: "Guidance for Nominating Sensitive Watersheds" March, 1994
- o Text of Sensitive Watershed Rule as approved by Office of Administrative Law, January 7, 1994.

6/09/92

## **SENSITIVE WATERSHEDS BACKGROUND PAPER**

**Staff paper prepared for the California State Board of Forestry  
to accompany the Sensitive Watersheds Rule Package - Option #1  
by A.E. Tuttle and P. H. Cafferata**

To facilitate Board consideration of the new Option #1 for the Sensitive Watersheds Rule Package, Board staff with help from the Department has prepared the following summary of relevant portions of the literature. Also attached is a letter from William Kier reflecting the experience of the Best Management Practices Effectiveness Assessment Committee. This effort was developed at the direction of the Board in 1991 to design a program for monitoring the effectiveness of Board rules in protecting water quality. In addition, a memorandum from the North Coast Regional Water Quality Control Board on the subject is included.

### **SENSITIVE WATERSHEDS**

Watersheds may be considered sensitive for reasons related to their inherent physical characteristics, the natural resources they contain, or their history of use. Some basins contain soil or geologic types that make them prone to accelerated erosion or mass movement when the system is stressed by land-use activities. Some basins have been subjected to historically-intense resource use, and continue to experience significant impacts from past practices. Of particular concern are watersheds in which the beneficial uses of water, such as fish habitat and drinking water supplies, have been significantly degraded by past land-use activities. In some situations, watersheds may be considered sensitive if past or future management causes significant wildlife habitat degradation.

The assessment and mitigation of adverse cumulative effects is required under the California Environmental Quality Act and case law, and reflected in prior Board rulemaking (e.g. Technical Rule Addendum #2). The designation of sensitive watersheds would constitute an additional element in the Board's approach to assessing and mitigating the potential adverse cumulative effects of timber operations. The issues surrounding the difficult problems of cumulative impact assessment are exemplified in recent lawsuits filed against the Board, the Department and the timber industry (see for example, East Bay Municipal Utility District v. CDF et al., San Francisco County Superior Court No. 939640 (pending); North Coast Citizens for Sustainable Forestry v. CDF et al., San Francisco Superior Court No. 942767 (pending)). In these and other cases, plaintiffs allege failures on the part of the timber industry to disclose, analyze or mitigate significant adverse cumulative effects of timber harvest operations, or provide offsite assessment of collective impacts. Similarly, the Department is charged with a pattern and practice of failing to examine timber harvest plans within the context of larger planning units (such as watersheds), lack of capacity and data to adequately assess cumulative effects, and failure to adopt feasible alternatives or mitigation measures to substantially lessen environmental impacts.

In adopting the package, the Board would be establishing a public process for identifying watersheds where cumulative impacts are significant, providing a body of reference information for plan submitters and reviewers to use in conducting impact assessment of individual plans, and providing guidance concerning the scope and type of mitigation needed to reduce or eliminate significant cumulative effects. The process will therefore provide a substantive alternative to litigation for these contentious issues.

#### **A. Regulatory Framework**

For purposes of this rule package, a watershed will be considered sensitive if there is substantial evidence that further timber operations on the non-federally-owned portions of the land will create a reasonable potential for a significant adverse cumulative effect. For timber operations to continue without causing a cumulative effect, it may be necessary to require additional information to evaluate the incremental impact of the proposed operation, and mitigation beyond current forest practice rules. Mitigation is intended to lessen or avoid significant impacts by repairing degraded elements or protecting resources on- or off-site within the watershed, and by accelerating the recovery of the watershed back to a condition where standard forest practices provide adequate protection.

Guidelines for the California Environmental Quality Act recognize that cumulative effects can rarely be mitigated in the same way as the primary effects of an individual project. Section 15130 (c) provides that, for some projects, the only feasible mitigation for cumulative impacts may involve adoption of regulations rather than the imposition of conditions on a project-by-project basis. In designating a watershed as "sensitive" the Board will be adopting regulations identifying the resources that are sensitive to cumulative effects of further timber operations, and specifying the types of mitigation measures appropriate to protect those resources. Implementation of mitigation and/or monitoring will occur in the context of individual THP approvals, but will be considered in light of the entire watershed. Where possible, the Board will offer a performance standard approach, so that plan submitters will have flexibility in selecting mitigations or combinations of activities that will result in the desired offset or restoration.

The rule package will work in conjunction with the cumulative watershed effects assessment process (Technical Rule Addendum #2) by giving guidance to the Director as to additional information that may be required in a THP, and the types of mitigations that best address the cumulative effect. The designation may also result in requirements for monitoring programs so that feedback on the success or failure of different mitigation approaches can be used to improve resource protection.

#### **B. Criteria for Designating Sensitive Watersheds**

Comparable to other state and federal programs that designate lands or resources for special treatment, the sensitive watershed rule package will formalize the recognition of watersheds having characteristics that make them more vulnerable to the impacts of additional timber operations than others. The area designated as sensitive must encompass both the area subject to timber operations and the affected resource, therefore the size may range from a subwatershed

within a planning watershed (less than 3,000 acres), to a single planning watershed (typically 3,000 to 10,000 acres), or to several contiguous or "families" of planning watersheds (from 10,000 to 50,000 acres or more).

Sensitivity may be defined on the basis of the inherent physical characteristics of the basin, the history of land use, or the presence of specific resources.

**Inherent physical conditions:** The geologic, geomorphic and climatic history of a basin determine its potential for erosion and mass wasting. The sum of landscape-forming processes over time results in some basins having higher proportions of unstable features than others. Unstable characteristics include non-cohesive soils, steep slopes, and weak bedrock material along shallow or deep-seated failure planes. Slopes with high densities of horizontal concavities or topographic swales have also been recognized as natural sources of debris flows and a source area for timber harvesting-related sediment yields (Detrich et al., 1986, 1987). Problems with landslides or soil erosion attributable to timber operations in California are discussed by Durgin et al. (1989), Lewis and Rice (1989), Rice and Lewis (1991), Peters and Litwin (1983), Dodge et al. (1976), the Roads and Landings Task Force (1989) and the numerous references contained therein. Reid (1991) includes tables of over 100 references on sediment yields from logging and roads, and observes that studies generally show a 2- to 50-fold increase over background levels, with most of the increase associated with roads.

Maps of erosion hazard and susceptibility to mass wasting have been prepared for various regions in California and can be used to identify sensitive areas. For example, maps of geomorphic features related to landsliding have been prepared by the California Division of Mines and Geology (CDMG, 1983); and investigations of relative erosion susceptibility have been made on many watersheds including the South Fork Trinity River (Buer et al, 1979), Grass Valley Creek (Buer, 1984); Redwood Creek (Nolan et al., 1972) and many others. Currently under contract to CDF is a project to map highly erosive watersheds on private and state-owned timberland in California, integrating both surface and mass erosion processes. Minimum mapping units will be watersheds of 10,000 to 50,000 acres. The project is due in June, 1993 and can be used as a planning tool for identifying basins with high erosion hazard.

**Sensitive resources subject to cumulative effects:** It is anticipated that the resources most frequently cited in the nomination process as subject to cumulative effects will be those related to cold-water fisheries and domestic water supplies. Impacts on fisheries from excessive sediment, canopy removal, channel blockage and changes in stream morphology resulting from forest and rangeland use are well documented in the literature (see, for example, the extensive bibliography in the review text by Meehan, 1991). Twenty stocks of anadromous salmon and steelhead have been identified at high risk of extinction in California, with an additional eighteen at moderate risk or of special concern (Nehlsen, et al., 1991). Those stocks occurring within national forests in northern California are indicated by Johnson and others (1991). Fish stocks considered by the Humboldt Chapter of the American Fisheries Society to be at high risk of extinction in northwestern California include the spring race of chinook salmon in the Klamath River (Salmon River), the South Fork Trinity River, and Smith River; the fall race chinook in tributaries to Humboldt Bay, Shasta River and Mattole River; Coho salmon in Pudding Creek, Garcia River, Scott River, Mad River, Mattole River and Garcia River; and summer race

steelhead trout in the North Fork Eel River, Van Duzen River, South Fork Trinity River, Mad River, Redwood Creek, Salmon River, and Clear Creek (Higgins and Fuller, 1992). For the north coast stocks, Higgins and Fuller suggest that sediment and related channel changes are the principal underlying causes of decline, with dams, agricultural diversion and runoff, hatchery practices, exotic species and over-fishing also contributing.

Potential cumulative impacts on domestic water sources range from turbidity in the surface water supplies of individual diverters to accelerated sedimentation of storage reservoirs for large municipal water suppliers, such as the suggested impacts to Pardee Reservoir on the Mokelumne River (EBMUD v. CDF et al, supra.; Albright, 1991; Euphrat and Henly, 1991). Mitigation measures to protect drinking water from sediment-related aspects of timber operations are largely similar to those for fisheries protection, and may necessitate both on- and offsite actions and long-term monitoring.

In a few cases, watersheds may be considered sensitive when past or future management endangers wildlife species that have a narrow geographic range, low density, low reproductive rates, are highly dependent on particular macrohabitat types that are scarce or declining, have a threatened or endangered status, or are subject to intensive human exploitation. In most cases, however, watersheds are not the only useful unit for describing wildlife habitat needs. Wildlife management plans that cover a range of scales from the timber stand to the broad region are also needed to evaluate and prevent significant adverse cumulative effects of timber operations over time (Urban et al., 1987; Franklin and Forman, 1987). Normal habitat changes expected from timber operations would not generally be sufficient reason for designation when operations otherwise comply with wildlife rules. Examples where watersheds may be designated as sensitive for wildlife purposes include those containing special or rare habitat elements, stream networks in which significant portions of riparian vegetation has been lost, and areas where there is concern about a particular species' population status. A sample of literature references concerning wildlife habitat relationships in forestlands is appended.

Historically-intense resource use: Past land-use in a watershed may leave a legacy of chronically failing and eroding slopes, networks of rutted skid trails and landings, gullied roads, diverted channels at stream crossings, plugged and bottom-worn culverts, aggraded pools, braided channels, blocked tributaries, channels devoid of beneficial woody debris, sediment-filled gravels, and shallow warm estuaries. While current forest practices aim to minimize future occurrence of these impacts, some areas still suffer damage from past practices. Natural recovery attenuates the effect of damage over time, but processes of revegetation on poor sites or the transport of excess sediment through a stream system can be slow, and new harvest cycles may add to or reactivate past problem areas.

Designation of a basin as sensitive will place a watershed-wide perspective on the review of timber harvest plans within historically-impacted watersheds, and focus mitigation on upslope or instream areas where it will be most effective for accelerating recovery.

### **C. Mitigation Approaches**

Mitigation measures are actions that may be performed to avoid, reduce, rectify, minimize or compensate for impacts. The primary regulatory approach for preventing direct impacts of timber operations in California does emphasize -- and must continue to emphasize -- onsite best management practices (BMPs). However, while BMPs generally protect the beneficial uses of water under normal conditions, they are not always sufficient for all site conditions, particularly critical sites as defined by Rice and Lewis (1991) and Lewis and Rice (1989), and are sometimes not perfectly implemented (Rice and Datzman, 1981; CSWRCB, 1987).

The currently proposed monitoring program for BMPs required under the Management Agency Agreement with the State Water Resources Control Board (CDF, 1992; CSWRCB, 1988) will include an evaluation of both implementation and effectiveness to determine not only whether a given BMP had the desired effect, but also whether the resource at risk was correctly recognized, the proper BMP identified, and the activity carried out as planned. These findings will be important in completing the information feedback loop for improving onsite techniques to protect the beneficial uses of waters present.

Because on-site BMPs may not always be sufficient to mitigate potential cumulative effects, this rule package authorizes use of off-site mitigation and monitoring measures within the watershed. Repair, rehabilitation or restoration of problem areas should be considered appropriate offsets, particularly in watersheds identified as suffering from past damage. In most cases off-site measures can be performed within the ownership, but in some situations landowners may want to pursue cooperative agreements with other owners or agencies. Measures may include rocking road surfaces or abandoning roads, repairing headward expanding gully networks with checkdams, replanting riparian tree species, building gabion structures to control earth slumping problems, replacing worn-out culverts or upsizing to meet 50-year flood flows, enhancing fish habitat, stabilizing watercourse banks, retaining green trees for wildlife habitat or future recruitment of large woody debris along streams, and other stream and watershed restoration techniques.

For severely impacted watersheds a "zero net discharge" approach may be appropriate, requiring plan submitters to demonstrate that additional timber operations will result in no net sediment yield to the stream system. Such an approach has been initiated in the Grass Valley Creek watershed tributary to the Trinity River (USDA-SCS, 1986; Komar, 1992). It is acknowledged that implementation of such programs is still in its infancy, owing primarily to difficulties in accurately predicting the amount of sediment generated by specific practices and the amount "saved" by a mitigation technique, particularly since these are functions of the size of future storm events. Nevertheless, sediment budgeting is an established hydrologic research tool (Dietrich et al., 1982) and the approach provides a useful conceptual framework for matching impact to offset. By establishing baseline erosion rates and relative values for alternative treatment practices, quantitative approximations can be made to justify one mitigation approach over another and improve ad-hoc guesses.

In cases where watersheds are designated as sensitive for wildlife purposes, mitigation must be directed towards protection of the feature(s) indicated at the time the watershed is designated.

These may include changes in the timing, location, type or extent of operations as determined to be necessary for the needs of the species of concern.

#### **D. Case Studies Illustrating Sensitive Watersheds In California**

Several watersheds in California have been studied sufficiently to allow resource professionals to conclude that they merit the designation as sensitive. The following examples illustrate sensitive watersheds which could be nominated based on their physical characteristics and/or degraded beneficial uses of water.

**Grass Valley Creek** - Located in Trinity County, this watershed covers 24,240 acres and is tributary to the Trinity River. Approximately 80 percent of the basin is underlain by granite of the Shasta Batholith (Bedrossian, 1992). This rock is deeply weathered and the resulting decomposed granitic soils are highly erodible. Most of the old-growth timber was logged from 1940 to 1960. Historically, the Trinity and its tributaries provided excellent salmonid fishery habitats. Severe declines have been attributed to the construction of Trinity Dam, removing flushing peak flows and greatly reducing the mean daily flow rate of the river, and to stream sedimentation resulting from high rates of hillslope erosion in parts of the watershed (Thomas and Roos-Collins, 1991).

Grass Valley Creek is the largest contributor of sediment to the Trinity River. Estimates of sediment delivered to the channel range from 3.25 to 4.75 Tons/acre/year (T/ac/yr); this is roughly an order of magnitude higher than for average watersheds in the state. More than half of this material can be attributed to roads in the basin. Currently, special mitigation measures are utilized to reduce erosion from timber harvesting operations. This basin would be classified as sensitive both for its physical characteristics and its degraded beneficial uses.

**French Creek** - French Creek is a fourth order (20,584 acre) tributary of the Scott River, itself a major tributary of the Klamath River, located in Siskiyou County. Sixty-three percent of the basin is underlain by granitic rock. Forty percent of the soil eroded on hillslopes comes from road cuts, 20 percent from road fills, and 19 percent from skid trails. Sediment yield is about 1.3 T/ac/yr (Sommarstrom et al., 1990). Thirty to forty percent of the stream gravels are smaller than 6.3 mm, degrading salmonid spawning habitat. French Creek suffers from high embeddedness levels, low summer flows, and high summer temperatures (Maria, 1991). This basin could be classified as sensitive for both its physical characteristics and degraded beneficial uses.

**Grouse Creek** - This watershed is a 36,800 acre tributary of the South Fork of the Trinity River in Humboldt County. Three faults cut across the basin and cause mixed geologic formations. Much of the southwestern part of the basin is Franciscan sandstone and siltstone, while the northern and eastern parts are metasediments, schist, and diorite (Raines and Kelsey, 1991). Forty percent of the basin has been logged in the last 35 years. Construction of a sediment budget produced an estimate of 7 T/ac/yr for sediment production; this is among the highest for basins in the entire Pacific Northwest. Sediment production is dominated by mass landslide

failures, concentrated in areas of geologic instability and logging, and occurs during major storms. Sensitivity in this basin is dictated by its physical characteristics.

**Sproul Creek** - Sproul Creek is a 16,000 acre tributary of the South Fork of the Eel River, located in southern Humboldt County. Most of the basin was logged between the 1940's and the 1960's. Slopes are moderate to steep, with soils derived from Franciscan Formation sandstones and shales. Poor logging practices combined with three large floods in the 1950's-60's badly degraded anadromous fisheries habitat (Platts, 1991). Currently, salmonid biomass levels are low compared to other west coast streams. Recent logging operations are not thought to be significantly degrading water quality or stream channel stability (Rice 1991), but McLeod and Preston (1990) found that Sproul Creek does not have optimal conditions for salmonid spawning and rearing. Removal of large organic debris from the stream channels has limited habitat recovery in the basin. This watershed can be nominated as sensitive primarily due to its degraded beneficial uses, rather than its physical characteristics.

**Salmon Creek** - This 16,000 acre drainage located in central Humboldt County empties directly into the southern part of Humboldt Bay. Most of the old-growth timber was removed about 50 years ago. The majority of the watershed is part of the Wildcat Group of soft sedimentary rock units, with poorly bedded clayey siltstones and silty claystones, with some fine-grained sandstones. This formation is very prone to both small and large scale, shallow earthflows and debris slides (Huber, 1992). Streamside landslides are very common along the central portion of the channel and the stream system is dominated by very high fine sediment loads. Spawning and rearing habitats are thought to be in poor condition (Gonzales, 1991). This basin can be considered sensitive both for its physical characteristics and due to degraded beneficial uses.

**Lacks Creek** - Lacks Creek is a 10,880 acre watershed located in the Redwood Creek basin of Humboldt County. Redwood Creek is one of the most highly erodible basins in the United States (Madej, 1984). The watershed is underlain by rocks of the Franciscan assemblage, known to be highly susceptible to fluvial erosion and mass wasting. Most of the basin has been logged and was subjected to major floods in 1953, 1955, 1964, 1972, and 1975. The storm of December 1964 resulted in widespread landsliding. Approximately 50 percent of the sediment generated from the lower Redwood Creek drainage was the result of gully erosion and stream crossing washouts (Hagens and Weaver, 1987). Located above the Redwood National Park, Lacks Creek supports Douglas-fir and delivered 3 T/ac/yr of sediment to the channel over a 28-year study period (Pitlick, 1982). Tributary landslide contribution, such as from Lacks Creek, does not differ substantially from the contribution due to landsliding along the main stem of Redwood Creek in this area of the drainage. Private logging continues in the basin and the Park Service is monitoring sediment discharge. Natural drainage characteristics make this tributary sensitive.

**Mattole Canyon Creek** - This 5,700 acre tributary of the Mattole River is located in Humboldt County. The area is underlain by highly fractured graywacke sandstone and shale of the Franciscan assemblage. The majority of the old-growth forest here was cut prior to 1962; little logging has been done since 1984. This drainage is one of the heaviest contributors of sediment in the Mattole basin (Mattole Restoration Council, 1989). The braided and unstable channel has been diverted into the steep banks of the inner gorges, undercutting slopes and causing further

landslides. Mile-long stretches of the tributary are exposed to active streamside landsliding. Salmon numbers have declined in Mattole basin in the past ten years (Preston, 1990). This basin is sensitive both for its physical characteristics and its currently degraded beneficial uses.

East Branch of Soquel Creek - This watershed is an 8,640 acre tributary of Soquel Creek which empties directly into the Pacific Ocean in Santa Cruz County. Most of the old-growth was harvested in the basin 50-60 years ago and a second-growth forest of redwood and hardwood species now exists. The flow of Soquel Creek is described as highly variable, due to the nature of the steep canyons, intense precipitation, and soils present (Singer and Swanson, 1983). Landslide activity is prevalent during major storms, adding large quantities of organic and inorganic debris to the peak flows, increasing the destructive power of the floods (as occurred in January 1982). Most of the sediment in Soquel Creek originates from landslide features (Curry, 1984). Amaya Creek, a major tributary to the East Branch, has nearly continuous landslides along both banks for long stretches (Doty, 1984). Active landsliding, frequent floods, and steep slopes make this a sensitive basin.

Lone Rock Creek - This 6,818 acre basin is a tributary of Indian Creek, itself a tributary of the East Branch of the North Fork of the Feather River in Plumas County. Lone Rock Creek now empties directly into Antelope Reservoir. Ownership in the basin is approximately 1/3 Forest Service and 2/3 private. Most of the basin is covered with a mixed conifer forest. Nearly all of the watershed is underlain by highly weathered decomposed granite. Roughly three-quarters of the catchment was found to be in a disturbed condition, due to past grazing, logging and roading. Sediment delivery into the reservoir was estimated to be 3.3 T/ac/yr, decreasing storage space and hydro-electric generation potential (SCS, 1989). Bathymetric studies of the reservoir confirmed that this estimate is reasonable. Lone Rock Creek has the most degraded watershed condition in this part of the Indian Creek basin. It is sensitive both due to its physical characteristics and its degraded beneficial uses.

Forest Creek - Forest Creek is a 15,250 acre tributary of the Middle Fork of the Mokelumne River in Calaveras County. Three-quarters of the basin is in private ownership, while one-quarter is owned by the Forest Service. The watershed is underlain by both granitic rock and volcanic pyroclastic rocks. Aerial photograph analysis revealed that Forest Creek has reaches that are several hundred feet wide and were not present until the mid-1950's (Euphrat and Henly, 1991). Albright (1991) inventoried the entire main channel and found about 25 percent to be deteriorating in stability. These were low-gradient areas where the stream has cut laterally and created a wide, shallow channel. High summer water temperatures were documented.

The greatest contributors to currently produced sediment loads are thought to be roads in harvest areas, grazing, and non-harvest area roads. Most of the sediment in storage resulted from roading and logging activities that took place prior to the modern Forest Practice Act, as well as from non-logging related activities (Euphrat and Henly, 1991). Rich (1991) found pool and substrate size limited trout habitat in an upper reach, and reported a mixed quality of habitats in a lower reach of Forest Creek. Concerns have been raised by a downstream water district that water quality has been degraded and reservoir storage space depleted by recent harvesting. This

basin can be considered sensitive because of its physical characteristics and past practices that have degraded the beneficial uses present.

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March 1, 1994

**TO: MEMBERS OF THE PUBLIC**

**FROM: CALIFORNIA STATE BOARD OF FORESTRY**

**SUBJECT: GUIDANCE FOR NOMINATING SENSITIVE WATERSHEDS  
TITLE 14 CCR SECTIONS 916.8, 936.8 and 956.8**

The Sensitive Watershed process provides an opportunity for the public and agencies to bring watersheds with special protection needs to the attention of the California Board of Forestry. Designation as "sensitive" means that special treatments are needed for logging operations in that watershed, beyond the protections already provided by current forest practice rules. In essence, the rule allows protection measures to be tailored to the specific needs of a watershed.

The Board recognizes that all watersheds in California are sensitive to imprudent or excessive land disturbance, and that care must be taken to protect natural resources in all land-use activities. Current forest practice rules already contain many provisions for protecting water quality, fisheries, wildlife, soils and timber productivity. The Board also recognizes that additional requirements may be needed to address specific problems related to the natural characteristics or past history of a particular watershed. The additional requirements could include, for example, special standards for logging, specific guidance for on- or off-site mitigation, programs for monitoring, or measures to restore conditions significantly impacted by timber harvesting.

In general, nominations have two basic components: 1) a justification of why the watershed needs protections beyond those provided by current forest practice rules, and 2) recommendations as to what those additional protection measures should be. The additional protections must be developed within the context of timber operations since the Board's regulatory authority is limited to those activities.

To classify a watershed as "sensitive" the Board must find that there is a reasonable potential that further timber operations will cause or contribute to ongoing, significant adverse cumulative impacts, and that mitigation of those effects requires the application of protection measures not required by the Forest Practice Rules. Therefore the nomination should explain what the

impacts are, how further timber operations may contribute to them, and why present rules are not adequate.

This document summarizes the elements that should be included in a nomination. It is intended to provide a "plain English" summary of the Sensitive Watershed rule, but in no way to alter its meaning or substitute for the written rule. Persons preparing nominations should refer to the language of the Sensitive Watershed rule for specific requirements, and to the other forest practice rules that apply to the control and mitigation of impacts from timber operations.

It is suggested that nominators contact landowners within the watershed to inform them of the potential nomination and to obtain site-specific information. Please note that nothing in this rule provides immunity from trespass or other laws governing access to private property or records.

Nominations may be submitted to the Board at any time. Following receipt, nominations will be referred to a Nominations Review Committee. The committee will conduct initial screening to determine if the nomination complies with the informational requirements of the rule and whether the nomination is supported by substantial evidence. At the public hearing, the Board will determine whether the watershed warrants designation, and, if so, what additional mitigation measures are required.

#### ELEMENTS TO BE CONTAINED IN A SENSITIVE WATERSHED NOMINATION

The requirements for nominations under the Sensitive Watershed rule are summarized here. Persons preparing nominations should refer to rule language found in 14 CCR 916.8, 936.8 or 956.8 for the specific requirements of the rule.

General requirements that apply to all nominations include:

- o Areas to be nominated must conform to the boundaries of one or more "planning watersheds" as delineated on maps available for reference at the California Department of Forestry and Fire Protection (CDF). Planning watersheds are administrative units, generally around 10,000 acres in size, that have been delineated pursuant to Board rule.
- o Factual information should be substantiated with data and referenced as to source (e.g. literature citation, professional opinion, personal communication).
- o There is no limit on length. Supporting information and reference material should be included or be made available to the Board upon request.

To facilitate review, you are requested to organize the written and mapped information contained in a nomination with headings that correspond to the following:

1. **COVER SHEET:** All nominations should contain a completed copy of the attached cover sheet along with any necessary maps.
2. **RESOURCES AT RISK FROM TIMBER OPERATIONS UNDER CURRENT RULES:** The nomination must document and describe the specific natural resources that are significantly threatened by further timber operations occurring on private or state (i.e. non-federal) timberland within the nominated area. The discussion should describe, in a detailed manner, the specific resources, location, and characteristics that render them at risk from timber operations conducted under current Board rules.

For example, the specific resources at risk may include (but are not limited to):

- o particular species of fish or aquatic organisms, or unique biological characteristics of the aquatic or riparian habitat
  - o domestic or other water supplies, water quality or other beneficial uses, or stream system and channel morphology factors related to beneficial uses that are specifically identified
  - o downstream reservoirs, navigable channels, water diversions, estuaries, harbors
  - o wildlife species, or the habitat of species, listed under state or federal law as rare, threatened or endangered, candidate, or sensitive
  - o wildlife species with narrow geographic range, low density, low reproductive rates, and highly dependent on localized habitat features
3. **SENSITIVE WATERSHED CHARACTERISTICS:** The nomination should discuss the conditions in the nominated planning watershed(s), either natural and management-related, which pose a significant threat to the resources described in 2) above. This discussion should describe the sensitive characteristics of the watershed(s), and then make the link between the watershed characteristics, the resources that have been identified to be at risk from further timber operations, and the effects that specific types of timber operations would have upon the identified resources. The discussion should identify the types and locations of timber operations that would threaten the identified resources, and the conditions under which the potential impact could occur. Nominations should include maps indicating, to the extent possible, the geographic location of sensitive conditions, the resources at risk, and areas where timber operations would pose potential problems.

For example, the conditions in the watershed that make it sensitive to further timber operations may include (but are not limited to):

- o steep slopes and easily destabilized soils
- o continuing landslide or soil erosion problems related to past or ongoing land-use activities
- o extensive ground disturbance or drainage problems, particularly associated with roads, skid trails, landings, and watercourse crossings
- o accelerated aggradation, streambank erosion, and channel scouring
- o changes in the habitat or condition of wildlife species identified in 2) above
- o accelerated rates of proposed road construction or timber harvesting within the watershed or near streams or springs

4. **OTHER ENVIRONMENTAL MANAGEMENT PLANS:** The nomination must contain a discussion of the provisions in approved Habitat Conservation Plans, or other documents approved or under review by public agencies, which provide for maintenance or improvement over time of environmental conditions within or adjacent to the nominated area or forest district. These could include, for example, USFS forest management plans, cumulative watershed effects analyses, and other planning documents that address environmental conditions in and around the watershed area.

5. **MITIGATION NEEDED BEYOND CURRENT RULES:** The nomination should recommend feasible mitigation measures, in addition to current forest practice rules, that are needed to protect the resources discussed in 2) above. The discussion should include a) reasons why the current forest practice rules are inadequate to protect the resources at risk, and b) an explanation of how the suggested measures would improve resource protection. Where appropriate, site-specific locations for potential on- and off-site mitigation activities should be identified on maps.

For example, mitigation measures may include (but are not limited to):

- o prescriptive and performance standards for timber operations
- o additional information that should be required in THPs
- o specific monitoring programs
- o restoration or rehabilitation of degraded resources, including roads, within any portion of the nominated area.
- o voluntary mitigation agreements among ownerships

6. **OTHER PERTINENT INFORMATION:** Other information about the nominated area that may assist the Board in evaluating the nomination may be included.

7. **REFERENCES:** Literature citations, expert written opinion, and other relevant sources of information must be included with

the nomination. Where possible, copies of information used to prepare the nomination should be submitted; where not possible, the location where the material may be obtained should be specified.

8. PUBLIC NOTICE LIST: Names and mailing addresses of the following individuals and organizations must be listed in the nomination:
- o Landowners of 40 acres or more of lands zoned for timber production (TPZ) in the nominated planning watershed(s). (This may be obtained with the assistance of the county Assessor. A fee may be required.)
  - o Public water purveyors and known private purveyors within the planning watersheds. (This may be obtained from CDF.)
  - o Commonly known watershed associations within the planning watershed(s).
  - o Commonly known neighborhood or community associations within the planning watershed(s).
  - o Chairman, county board of supervisors.
  - o Chairman, county planning commission.
  - o Local manager for any public agency having custodial responsibility for timberland within the planning watershed(s).
9. DRAFT LEGAL NOTICE: The nomination must also contain a draft notice for newspaper publication in a form prescribed by the Department of Forestry. A sample is attached.

#### STANDARDS OF REVIEW

The Sensitive Watershed rule contains standards to be used by the Review committee and the Board in reviewing nominations. These standards provide additional guidance concerning information that should be contained in a nomination.

The Review Committee will screen nominations for compliance with the Sensitive Watershed rule requirements. The Committee will evaluate whether the nomination is supported by substantial evidence that further timber operations will create a reasonable potential to cause, or contribute to ongoing, significant adverse cumulative effects.

Within 120 days of the date the nomination is received by the committee, or such longer time as provided by the Board, the Review Committee will forward its recommendations to the Board with specific reasons for approval or denial of the nomination. A Committee recommendation for approval must include:

- o A description of the substantial evidence which supports the nomination;

- o Specific reasons why the current forest practice rules are inadequate to protect the specific resources at risk;
- o A list of the resources threatened by timber operations in the watershed, and a description of the kind, location, and conditions under which timber operations would threaten the resources.

Committee recommendations may also include, as appropriate:

- o Prescriptive and performance standards for timber operations that will avoid or mitigate new or continuing significant cumulative effects. This will include a consideration of the feasibility and cost of additional standards and alternatives;
- o A description of additional information that needs to be included in THPs in order to evaluate the impacts of proposed timber operations in the watershed;
- o On-site mitigation measures, in addition to the current rules, which can be required by the Director to mitigate the impacts of timber operations within the watershed;
- o Off-site mitigation measures that can be applied within or outside of the sensitive watershed area to offset adverse on-site impacts of timber operations. Mitigation measures that are proposed to protect fish, aquatic species, aquatic and riparian habitat, domestic water supplies, other beneficial uses of water, or factors related to stream system and channel morphology must be located within the same drainage;
- o Methods to evaluate the implementation and effectiveness of required mitigations (e.g. monitoring programs);
- o Exemptions that differ from those provided under the current rules.

The Board will consider the recommendations of the committee at a public hearing which will be held within 60 days of receipt from the committee.

Nomination packets should be submitted to:

Chairman, California State Board of Forestry  
P.O. Box 944246  
Sacramento, CA 944244-2460

Further information may be obtained by contacting the Board office at(916)653-8007.

**SENSITIVE WATERSHED NOMINATION COVER SHEET**

**1. NOMINATOR**

**Name: (Individual or Organization and Contact Person):**

**Address:**

**Phone:**

**FAX:**

**II. IDENTIFICATION OF NOMINATED WATERSHED**

**Name of watershed or major stream(s):**

**Planning Watershed Identification Number(s):**

**Name of higher order stream, if any, to which the watershed is tributary:**

**Quadrangle names of USGS topographic map(s) on which the watershed is located:**

**County:**

**Township and Range:**

**Approximate size of the nominated area (acres):**

**III. SUMMARY OF RESOURCES THAT ARE SIGNIFICANTLY THREATENED BY FURTHER TIMBER OPERATIONS IN THE NOMINATED AREA:**

**IV. SUMMARY OF MITIGATION MEASURES PROPOSED TO PROVIDE PROTECTION FOR RESOURCES IDENTIFIED IN ITEM III, ABOVE**

NOTICE FOR NEWSPAPER PUBLICATION

Nominations for Sensitive Watersheds must be accompanied by a draft notice for newspaper publication. Please prepare the notice according to the following format:

NOMINATION OF PROPOSED SENSITIVE WATERSHED

A nomination for designating a Sensitive Watershed has been submitted to the California State Board of Forestry for the watershed(s) of the \_\_\_\_\_ (name of major streams) located in \_\_\_\_\_ county(ies). The nominated area includes Planning Watershed number(s) \_\_\_\_\_ in \_\_\_\_\_ (Section, Township and Range (s)). These watersheds are tributary to the \_\_\_\_\_ (name of higher order stream, if any, to which the watershed is tributary) and are mapped on the \_\_\_\_\_ (names) USGS topographic quadrangle sheets. The nominated watershed(s) cover an area of approximately \_\_\_\_\_ acres.

Based on criteria in Title 14 of the California Code of Regulations, Sections 916.8, 936.8, and 956.8, and the Forest Practice Rules, the Board must determine whether nominated watersheds are "sensitive" to further timber operations on non-federal timberlands. For watersheds classified as "sensitive", the Board must identify the specific resources that are sensitive to further timber operations, and specific mitigation measures that will provide the necessary protection of those resources. The resources that are described in this nomination as being significantly threatened by further non-federal timber operations are (list):

Publication of this notice is a part of the notification process. [To be completed by the Nomination Review Committee: Description and notice of opportunities for public participation in the review process]. A public hearing will be conducted by the Board within 60 days of receipt of the Committee's recommendation.

Further information can be obtained from the California Department of Forestry and Fire Protection located at \_\_\_\_\_ (address and phone number of local Department Ranger Unit Headquarters).

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1. Adopt a new 14 CCR 916.8, 936.8, and 956.8 for Sensitive Watersheds as follows:

Sensitive Watersheds

The Board, at a public hearing, shall determine whether nominated planning watersheds are "sensitive" to further timber operations. Classification of a water shed as "sensitive" shall be supported by substantial evidence that a condition, or conditions, exist(s) where further timber operations within the planning watershed will create a reasonable potential to cause, or contribute to ongoing, significant adverse cumulative effect(s) on the resources identified in 916.8(a)(3) [936.8(a)(3), 956.8(a)(3)], and as set forth in Technical Rule Addendum No. 2 (14 CCR 912.9)[932.9, 952.9] and that mitigation of such significant cumulative effects requires the application of protection measures not required by the Forest Practice Rules. For all planning watersheds classified as "sensitive", the Board shall identify the specific resources which are sensitive to further timber operations and specific mitigation measures that will provide the necessary protection of the sensitive resource(s). A Board finding that a planning watershed is no longer sensitive shall be supported by substantial evidence that such conditions no longer exist. Unless and until a planning watershed(s) is classified as sensitive and any necessary rulemaking completed, the existing rules shall apply.

1 (a) Nomination process:

2 The Director, local, state, or federal agencies and the public  
3 may nominate planning watersheds to the Board and shall  
4 provide evidence supporting classification of the watershed as  
5 sensitive. The nominator shall discuss the effects that  
6 further timber operations will have on the specific resources  
7 identified in 14 CCR 916.8(a)(3)[936.8(a)(3), 956.8(a)(3)]  
8 which are at risk within the nominated watershed and specify  
9 those effects not sufficiently addressed under the forest  
10 practice rules and discuss the significance of the effects in  
11 light of the condition of the resources in areas adjacent to  
12 the planning watershed. Such nominations must be accompanied  
13 by the following information, descriptions, documents, or  
14 maps as appropriate:

15 1. Name, approximate size and location of the  
16 watershed(s) identified by county, township and range,  
17 and name(s) of USGS topographic map(s) on which the  
18 planning watershed is found.

19 2. The name of the higher-order stream, if any, to which  
20 the watershed is tributary.

21 3. Specific resources that are significantly threatened  
22 by further timber operations on non-federal timberland in  
23 the nominated watershed, including, as appropriate, but  
24 not limited to:

25 A. fish, aquatic organisms, aquatic habitat, or  
26 riparian habitat;  
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1                   B. domestic and other water supplies, water  
2                   quality, other beneficial uses of water existing at  
3                   the time of nomination or factors related to the  
4                   stream system and channel morphology.

5                   C. downstream reservoirs, navigable channels,  
6                   water diversion and transport facilities,  
7                   estuaries, and harbors;

8                   D. wildlife species, or the habitat of species,  
9                   listed under state or federal law as rare,  
10                   threatened or endangered, candidate, or sensitive,  
11                   including discussion of the habitat features  
12                   threatened by timber operations;

13                   E. wildlife species with narrow geographic range,  
14                   low density, low reproductive rates, (and) highly  
15                   dependent on localized habitat features, including  
16                   discussion of the habitat features threatened by  
17                   timber operations and a discussion of why  
18                   protective measures are required to prevent a loss  
19                   of population viability.

20                   4. Natural or management-induced conditions present in  
21                   the watershed which pose a significant threat to the  
22                   resources identified in 14 CCR 916.8(a)(3) [936.8(a)(3)  
23                   and 956.8(a)(3)], above, including, as appropriate, but  
24                   not limited to:

25                   A. steep slopes and easily destabilized soils;

26                   B. continuing landslide or soil erosion problems  
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related to past or ongoing land-use activities;

C. extensive ground disturbance, particularly associated with roads, skid trails, landings, and watercourse crossings;

D. accelerated aggradation, streambank erosion, and channel scouring;

E. changes in the habitat or condition of wildlife species identified in 14 CCR 916.8(a)(3) [936.8(a)(3) and 956.8(a)(3)], above.

F. accelerated rates of proposed road construction or timber harvesting within a watershed or near streams or springs.

5. Approved Habitat Conservation Plans or other documents approved or under review by public agencies within the nominated watershed which provide for maintenance or improvement over time of management induced conditions within or adjacent to the planning watershed or forest district.

6. Suggested, feasible mitigation measures needed, in addition to current forest practice rules, to provide adequate protection for resources identified in 14 CCR 916.8(a)(3) [936.8(a)(3) and 956.8(a)(3)], above, and to mitigate or avoid new or continuing significant cumulative effects related to timber operations, including, but not limited to, restoration or rehabilitation of degraded resources within any portion

1 of the proposed sensitive watershed.

2 7. Other information about the watershed that may assist  
3 the Board to evaluate the nomination.

4 8. Literature citations, expert written opinion, and  
5 other relevant sources of information and, where  
6 possible, copies of information used to complete the  
7 nomination.

8 9. A list of names and mailing addresses of the  
9 following:

10 A. landowners of 40 acres or more of lands zoned  
11 for timber production in the planning watershed;

12 B. public water purveyors and known private  
13 purveyors within the planning watershed;

14 C. commonly known watershed associations within  
15 the planning watershed;

16 D. commonly known neighborhood or community  
17 associations within the planning watershed;

18 E. chairman, county board of supervisors;

19 F. chairman, county planning commission;

20 G. local manager for any public agency having  
21 custodial responsibility for timberlands within the  
22 planning watershed; and

23 H. district or local representatives for review  
24 team agencies.

25 10. A draft notice for newspaper publication containing  
26 the information in (a)(1)-(3), a statement that a public  
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1 hearing will be scheduled before the Board within 60 days  
2 of Board receipt of a nomination forwarded by the  
3 committee, and a statement that further information can  
4 be obtained from the local Department Ranger Unit  
5 Headquarters.

6 (b) Notice Process

7 The Board shall mail notice of the nominated watershed, as  
8 provided in (a)10,) to the addresses of parties described in 9  
9 A-H and shall publish the provided notice one time in a  
10 newspaper with general circulation in the county containing  
11 the planning watershed. Such notice shall be provided  
12 following a determination that information contained in the  
13 nomination meets the requirements of 14 CCR 916.8(a)  
14 [936.8(a) and 956.8(a)], above.

15 (c) Screening Process:

16 Before consideration by the Board, nominations shall be  
17 screened for compliance with the informational requirements by  
18 a nominations review committee, which may consist of the  
19 appropriate District Technical Advisory Committee or other  
20 Board Committee, as determined by the Board. The nominations  
21 review committee shall consult with CDF, the appropriate  
22 Regional Water Quality Control Board, the Department of Fish  
23 and Game, the Division of Mines and Geology, and other(s) as  
24 deemed necessary to determine whether the nomination is  
25 supported by substantial evidence. The nominations review  
26 committee shall then forward a recommendation for approval or  
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1 denial of the nomination to the Board within 120 days of the  
2 date of receipt by the committee, or such longer time provided  
3 by the Board. The nominations review committee shall describe  
4 its specific reason(s) for recommending approval or denial of  
5 the nomination. In the event that the committee forwards a  
6 recommendation for approval, it shall describe the substantial  
7 evidence which supports nomination, including specific reasons  
8 why the current forest practice rules are inadequate to  
9 protect the specific resources at risk and shall provide the  
10 following information:

11 1. A list of which resource is threatened and by which  
12 timber operations;

13 2. if possible, performance standard(s) for timber  
14 operations that will avoid or mitigate new or continuing  
15 significant cumulative effects;

16 3. additional information that is needed for evaluating  
17 the impacts of proposed timber operations and is to be  
18 included in harvesting plans submitted in the planning  
19 watershed;

20 4. Onsite mitigation measures in addition to the current  
21 forest practice rules, which can be required by the  
22 Director to mitigate the impacts of timber operations  
23 within the watershed;

24 5. Offsite mitigation measures that can be applied  
25 within or outside of the sensitive watershed area to  
26 offset adverse on-site impacts of timber operations. If  
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1           such mitigation measures are proposed to protect the  
2           resource discussed in subdivision (a) (3) (A) and (B), they  
3           must occur in the same drainage. Such measures may  
4           include, but are not limited to, voluntary mitigation  
5           agreements among ownerships.

6           6. If needed, recommended alternatives to evaluate the  
7           implementation and effectiveness of mitigations required  
8           under this section.

9           7. Exemptions for ownerships, emergencies, or land-use  
10           classifications that are different than those provided in  
11           the current forest practice regulations and that may be  
12           applied in the watershed.

13           (d) Public hearing Process:

14           The Board shall consider the recommendations of the  
15           nominations review committee at a public hearing on  
16           classification of the planning watershed, which will be held  
17           within 60 days of receipt from the committee. The watershed  
18           nomination and recommendations of the committee will be made  
19           available to the public between the date of receipt by the  
20           Board and the public hearing. Recommendations adopted by the  
21           Board which have the effect of a regulation shall be processed  
22           in accordance with the Administrative Procedures Act (Section  
23           11340. et seq. Gov. Code).

24           NOTE: Authority cited: Sections 4551 4562.7, 21000(g), and  
25           21160, Public Resources Code. Reference: Sections 4512,  
26           4513, 4551.5, 21000(b), (f) 21002, and 21002.1, Public  
27           Resources Code; and 33 USC 1288(b)(2)(F).

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2. Adopt a new 14 CCR 916.10, 936.10, and 956.10 for the protection of domestic water supplies as follows:

916.10 Domestic Water Supply Protection:

a) When proposed timber operations may threaten to degrade a domestic water supply the Director shall evaluate any mitigations recommended prior to the close of the public comment period (PRC 4582.7) and shall require the adoption of those practices which are feasible and necessary to protect the quality and beneficial use of the supply.

(b) The Director may require a post-harvest evaluation of the effectiveness of the mitigations and practices designed to protect the domestic water supply as a condition of plan approval. The Director shall require an evaluation at the request of the California Regional Water Quality Control Board, or any affected water purveyor, if the necessity for the evaluation is supported by substantial evidence in the record. This evidence may include, but is not limited to, potential land failures, accelerated rate of road construction or harvesting within a watershed, concentration or intensity of harvesting activity near streams or springs. The design and implementation of the evaluation shall be done in consultation with the Director, appropriate RWQCB, and THP submitter, and the sufficiency of the information requested by the Director shall be judged in light of reasonableness and practicality.

NOTE: Authority cited: Sections 4551 4562.7, 21000(g), and

1 21160, Public Resources Code. Reference: Sections 4512,  
2 4513, 4551.5, 21000(b),(f) 21002, and 21002.1, Public  
3 Resources Code; and 33 USC 1288(b)(2)(F).

4 3. Add a new 1032.10 Request for information on domestic  
5 water supplies.

6 1032.10 Request for information on domestic water supplies.

7 The THP submitter shall provide notice by letter to all other  
8 landowners within 1,000 feet downstream of the THP boundary  
9 whose ownership adjoins or includes a Class I, II, or IV  
10 watercourse(s) which receives drainage from the proposed  
11 timber operations. The notice shall request that the THP  
12 submitter be advised of any domestic water supply from the  
13 watercourse. In addition, notice by publication shall be  
14 given one time by the THP submitter in a newspaper of general  
15 circulation in the area affected by the proposed project.  
16 Such letter and publication shall notify the party of the  
17 proposed timber operation and describe its legal location and  
18 identify the name, if any, of the watercourse it may effect.  
19 The letter and publication shall request a response by the  
20 property owner within ten days of the post-marked date on the  
21 letter or the date of publication as appropriate. The RPF may  
22 propose, with justification and explanation, an exemption to  
23 such notification requirements, and the Director may agree.  
24 Copies of either notice, proof of service and publication, and  
25 any responses shall be attached to the THP when submitted.  
26 If domestic supplies are noted the plan shall contain  
27 mitigations necessary to protect domestic water supplies.

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NOTE: Authority cited: Sections 4551, and 4582.3, Public Resources Code. Reference: 4551, 4581, 4582.3, 21080, and 21092, Public Resources Code.

4. Adopt a new 14 CCR 916.11, 936.11, and 956.11 as follows:  
916.11 (936.11, 956.11) Rule Evaluation.

In December 1994 the Director shall provide the Board with a report on the rules within this article. The report shall identify and discuss any problem in the implementation of the rules or in the effectiveness of the rules to assure maintenance of the quality and beneficial uses of water.

NOTE: Authority cited: Sections 4551 4562.7, 21000(q), and 21160, Public Resources Code. Reference: Section 4512, 4513, 4551.5, 21000(b),(f), 21002, and 21002.1, Public Resources Code; and 33 USC 1288(b)(2)(F).

**Andrea Tuttle and Associates  
1215 Union St.  
Arcata, California 95521  
(707) 822-3966 FAX (707) 822-5043**

March 24, 1994

Mr. Clay Brandow  
Strategic Planning Program  
Department of Forestry and Fire Protection  
P.O. Box 94244  
Sacramento, CA 94244-2460

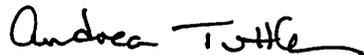
RE: Completion Report for Contract 8CA17184

Dear Clay,

Enclosed is the completion report for the contract "Assisting the Board of Forestry in Rulemaking for the Sensitive Watershed and Related Rule Packages". It summarizes the background of the rulemaking effort and tasks conducted during the course of the work. Also included are copies of the staff paper, public guidance document and rule language which I contributed to during the period of the contract.

It was a pleasure to work with you on this project. I appreciated your help and good humor, and look forward to keeping in touch.

Sincerely,



Andrea Tuttle