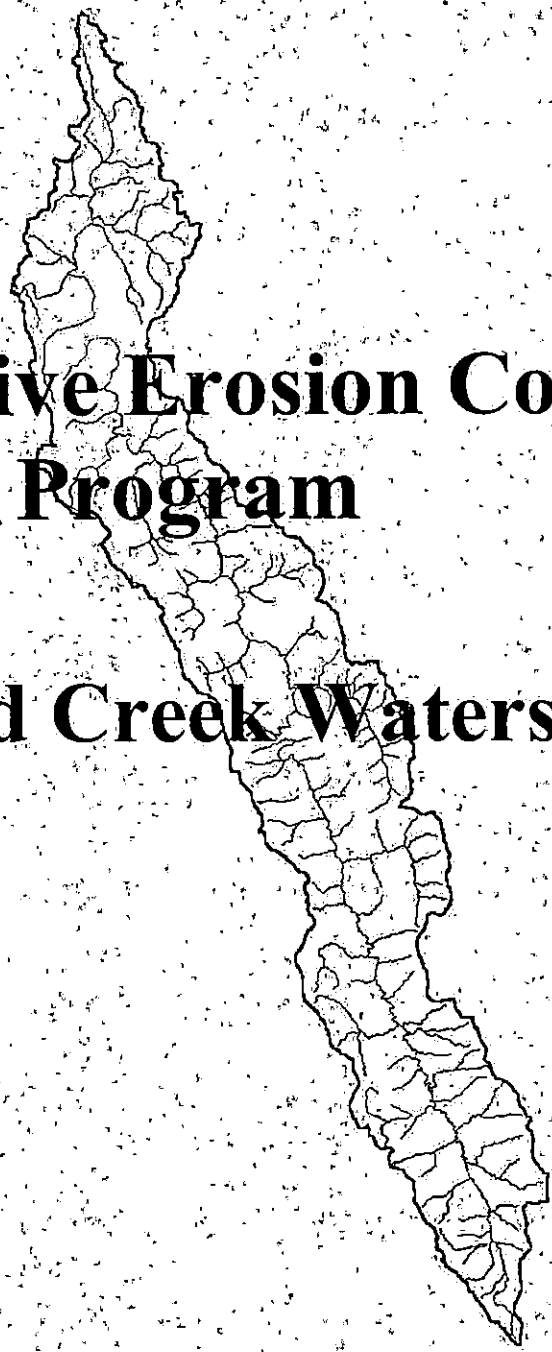


A detailed map of the Redwood Creek Watershed, showing the intricate network of creeks and rivers flowing through the region. The map is oriented vertically, with the headwaters at the top and the outlet at the bottom.

Cooperative Erosion Control Program

Redwood Creek Watershed

Prepared for The Redwood Creek Upper Basin Landowners Meeting
September 26, 2000



Minutes from Landowners and Redwood National Park Meeting
Stewart School, November 15, 1994

A meeting was held at the Arcata offices of Redwood National Park (RNP) between park staff and the primary, industrial timberland owners in the Redwood Creek basin. The meeting began at 9:15 am and ended at 11:30 am. An attendance list for this meeting is attached. Minutes were prepared by Greg Bundros and Barry Hill of Redwood National Park. If you find errors or omissions, please contact Greg or Barry (822-7611) with corrections.

Redwood National Park Superintendent Bill Ehorn opened the meeting by welcoming everyone and summarizing recent events regarding cooperative management efforts with the state park system and RNP's 25th anniversary. He discussed the history of the park in the Redwood Creek watershed and acknowledged the controversy associated with park establishment and expansion.

Bill then briefly outlined the state Board of Forestry sensitive watershed nomination procedure. RNP has been receiving public pressure to nominate Redwood Creek as a Sensitive Watershed under new state Forest Practice Rules (FPR's). Because of past impacts to park resources from large storms and our congressional mandate to protect park resources, RNP initially felt a Sensitive Watershed designation for Redwood Creek would be appropriate. Earlier this year, park staff began meeting with timber company representatives in an attempt to include industry in the nomination process. During these meetings, a cooperative management agreement or coordinated resource management plan (CRMP) was suggested as an alternative that could provide the same level of resource protection as sensitive watershed status without additional regulation of forest practices.

The purpose of this meeting is to explore possibilities for such a CRMP with major landowners in the Redwood Creek watershed. Bill suggested entering into a Memorandum of Understanding (MOU) that would provide a framework for cooperation, and reflect everyone's broadest objectives: resource protection for the park, and long-term timber production for industry.

Terry Hofstra described Redwood's enabling legislation that mandates the park to do what is necessary to ensure park resource protection. The legislation focuses on erosion, sedimentation, and park resource protection, and allows us to enter into cooperative agreements with private landowners and other government agencies, utilizing federal funds if necessary.

Erosion control projects on BLM and Stover properties are examples of past cooperative efforts. Such projects could be one of the objectives for our MOU. When performed on park lands where roads are not needed, erosion control projects must consider aesthetics as well as sediment reduction. On private lands, erosion control can focus on sediment reduction when treating abandoned roads or upgrading currently-used road systems.

Sharing of Geographic Information System (GIS) data, and industry participation in RNP's watershed analysis for Redwood Creek are other possible objectives for cooperative efforts.

Bob Barnum agreed with the concept of a cooperative effort.

Mike Risso explained the Sensitive Watershed Nomination process and pointed out that no written standards for a sensitive watershed exist. The Cumulative Watershed Impacts Assessment within the current FPR's may be an alternative to performing a watershed analysis. A drawback to the Sensitive Watershed nomination is that land uses other than timber harvest would not be addressed even if they cause erosion.

Tom Walz described the Grouse Creek MOU that was signed by several agencies but not by private landowners. There are too many meetings and no protection for individual landowners who may disagree with decisions made by some of the parties. Too much time is spent in meetings and analyzing data, and this reduces work accomplished on the ground.

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Neal Ewald asked if impacts from roads were our main concern.

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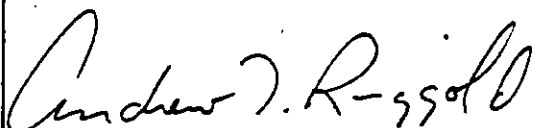
Jim Able asked how many miles of roads were in THP's reviewed by RNP staff.

Preface

Thank you for participating in this second meeting of private landowners in Redwood Creek and staff representing Redwood National and State Parks. It's hard to believe that five years have passed since our first meetings that culminated in a 'watershed' event. That event, of course, was the signing of Memorandums of Understanding that initiated our cooperative efforts to address erosion and sedimentation from roads on private lands, upstream of the parks, in the Redwood Creek basin.

In this second meeting we would like to renew our agreements. Significant work has been accomplished, and we hope to see these efforts continue and grow. During the past five years, a remarkable erosion prevention program has been established in Redwood Creek. Four pilot projects on different ownerships have been completed, and a basin-wide assessment of all roads on private lands is now underway. To date, these efforts have brought in over \$900,000 of outside funding for project planning and implementation. Most importantly, together we have shown that cooperative watershed efforts can work when built in a framework of trust.

We should all be proud of our accomplishments that, along with other information, are summarized in this booklet. The accomplishments provide the basis for increased protection of park resources and economic certainty for timberland owners. Through our continued cooperative efforts, road assessments, scientific studies and other projects performed inside and outside of the parks can be completed. We look forward to working with you and building on our successes during the next five years. We remain committed to applying our own resources and seeking outside funds to offset the costs of these very important efforts.



Andrew T. Ringgold, Superintendent
Redwood National and State Parks

Meeting Participants
Private Landowners and Redwood National & State Parks
Stewart School Building, September 26, 2000

Barnum Timber Company

Eel River Saw Mills, Incorporated

Herbert E. Russ Estate

Redwood National and State Parks

Russ Ranch and Timber Company

Sierra Pacific Industries

Simpson Timber Company

Stover Ranch Partnership

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Jim Able asked how many miles of roads were in THP's reviewed by RNP staff.

Greg Bundros stated nearly all plans submitted in the Park Protection Zone (PPZ) since the early 1980's had been reviewed by park staff, but staff review of plans in areas upstream from the PPZ relied on landowner permission which is not always granted.

Tom Walz stated that a MOU should focus on road-accelerated erosion.

Kim Browning asked what RNP was willing to do about road related problems, and how much money the park was willing to spend.

Greg Bundros described recent discussions with the Humboldt County Resource Conservation District. RNP hopes to be able to contract with private landowners through the district to perform erosion control work on private lands in the Redwood Creek basin. Initially, our budget would be about \$40,000 per year. We are currently working with Simpson to setup a small project to test the entire process before taking on large ones.

Barry Hill and Bill Ehorn said the amount could be as much as \$250,000 for any one year depending on priorities within the park and available funds.

Bob Barnum expressed the need for long-term monitoring and suggested that four "experts" could reach four different conclusions.

The discussion turned to road related erosion and the type of preventative measures that could be taken to reduce potential sediment sources from roads during a large storm.

Greg Bundros stated that preventing stream diversions at road crossings was the most cost-effective way to minimize sediment impacts from roads to streams during a large storm when culverts can plug. Typical waterbars or rolling dips may be inadequate to prevent stream diversions on roads with steep, continuous grades through stream crossings. During a large storm, stream sediment is often deposited on the road surface at crossings which buries the rolling dip or waterbar, rendering it ineffectual. Broad rolling dips that represent a permanent grade-break can prevent most stream diversions during a large storm.

Terry Hofstra described an approach to identify problem road areas that would utilize GIS information and analysis.

A concern shared by all was the personnel and money that would be needed to inventory roads. Several landowner representatives expressed concern about the government (RNP) telling them how to solve problems on their land.

Mike Kennedy stated that efforts must be cooperative and not prescriptive. He pointed out that the Department of Fish and Game was not present at this meeting, and its cooperation would also be needed.

Jim Able spoke to the past personality clashes with Redwood staff and the inappropriate

demands placed on industry by them.

Mike Kennedy echoed this concern and felt participation would have to be voluntary.

Allan Gradek questioned whether a CRMP would address fuels management.

Terry Hofstra replied that this could be a possibility, but that the main focus for the park was erosion control.

Erosion control or enhancement work should not require anything more than a 1603 Permit with Fish and Game.

In closing the meeting, Terry Hofstra offered to contact Fish and Game, draft the minutes of this meeting, and develop a sample MOU that utilizes Tom Walz's proposed language and intent:

"The following undersigned landowners agree to voluntarily cooperate to identify, prioritize, and correct, where economically feasible, potential sediment sources related to roads and other land uses within the Redwood Creek basin."

Attendance List
Landowners and Redwood National & State Parks Meeting
Stewart School Building, November 15, 1994

Michael Risso, Forester, California Department of Forestry

Kim Browning, Forester, Eel River Sawmills, Inc.

Jim Able, Principal, Able Forestry Consultants

Brian Graham, Forester, Western Timber Services

Lynda Roush, Area Manager, Bureau of Land Management

Allan Gradek, Forester, California Department of Forestry

Kevin O'Neil, Forester, California Department of Forestry

Tom Walz, District Manager, Sierra Pacific Industries

Terry Hofstra, Chief Research and Resources Management, Redwood National and State Parks

Marlan Stover, Partner, Stover Ranch Partnership

John Stover, Partner, Stover Ranch Partnership

Libby George, Stover Ranch Partnership

Richard Kelly, Stover Ranch

Bill Ehorn, Superintendent, Redwood National and State Parks

Michael Kennedy, Roads Foreman, Simpson Timber Company

Neal Ewald, Timberlands Manager, Simpson Timber Company

Eddie Mendes, Resource Manager, Barnum Timber Company

Bob Barnum, General Partner, Barnum Timber Company

Bill Kleiner, Principal, Western Timber Services (Russ Ranch and Timber Company)

Barry Hill, Geologist, Redwood National and State Parks

Greg Bundros, Geologist, Redwood National and State Parks

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- Redwood National and State Parks' Recommended Elements of an Aquatic Conservation Strategy

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- Map - Existing Roads in the Redwood Creek Watershed
- Map - History of Road Construction in the Redwood Creek Watershed
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- Tables Showing Costs and Lengths of Completed and Planned Erosion Prevention Projects
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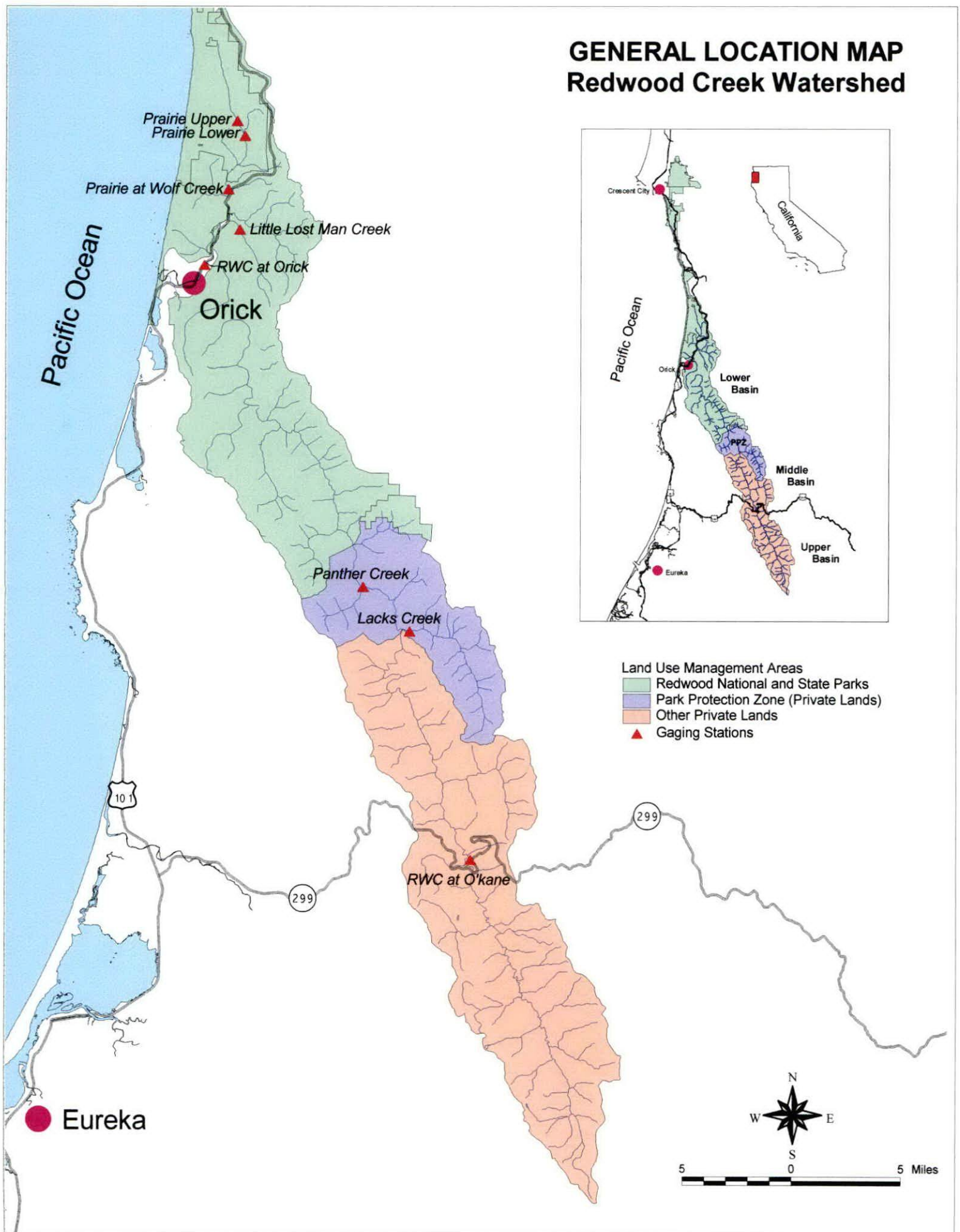
V. NATIONAL PARK SERVICE AND U.S. GEOLOGICAL SURVEY PARTNERSHIP

VI. ARTICLE FROM THE GEORGE WRIGHT SOCIETY BIENNIAL CONFERENCE DESCRIBING COOPERATIVE EROSION CONTROL ON PRIVATE LANDS IN REDWOOD CREEK WITH BACKGROUND AND HISTORY

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For downloading data and other items, visit the Parks' web site at
<http://164.159.21.1/redwpub/>

GENERAL LOCATION MAP Redwood Creek Watershed



Redwood National and State Parks' Recommended Elements of an Aquatic Conservation Strategy for Redwood Creek

- ***Prevent Road Related Erosion***
 - In cooperation with private landowners, conduct road assessments
 - Prepare basin-wide treatment prioritization plan
 - Implement identified erosion prevention measures (decommission or upgrade roads)
 - Work with county and state transportation agencies to identify fish migration barriers, if they exist, and reduce erosion from public roads
- ***Improve Timber Harvest Practices***
 - Retain greater numbers of large conifers in riparian areas (WLPZ's)
 - Improve protection of inner gorge and unstable streamside areas
 - Provide long-term maintenance of roads and erosion control structures
 - Improve cumulative watershed effects analysis
- ***Restore the Redwood Creek Estuary*** to a naturally functioning ecosystem
- ***Establish a Redwood Creek Watershed Group*** to address watershed issues
 - Develop a Redwood Creek CRMP
 - Establish a Redwood Creek data repository
- ***Complete a Watershed Analysis for Salmonid Species***
 - Collect baseline salmonid data and establish a trend monitoring program for salmonids
 - Assess Cumulative Watershed Effects
 - Implement Adaptive Management

Redwood National and State Parks' Cooperative Erosion Control Program Goal and Objectives

GOAL:

Protect the parks' aquatic and riparian resources (Tall Trees Grove) in Redwood Creek from accelerated erosion associated with logging roads and large storms.

The Parks' goal is grounded in scientific studies and in the legislation that expanded the park in 1978 that recognizes erosion from logging roads as a significant *external* threat to park resources.

...for the development of a program for the rehabilitation of areas within and upstream from the park contributing significant sedimentation ... to reduce risk of damage to streamside areas adjacent to Redwood Creek...(P.L. 95-250)

OBJECTIVES:

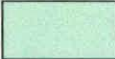
- **Cooperative Erosion Control from Logging Roads on Private Lands**
 - ***During the next 3 years*** and in partnership with private landowners, inventory active and potential erosion sites on all private logging roads in the Redwood Creek basin.
 - ***Within 4 years***, develop a single basin-wide erosion control/prevention plan for all private lands upstream of the park.
 - ***Over the next 15 years***, use the erosion control/prevention plan to secure additional funding and complete the implementation of the plan.
- **Local Timber Harvest Activities and Forest Practices**
 - Review timber harvest plans in areas upstream and adjacent to the park.
 - Cooperate with other agencies and industry groups for design of scientific watershed studies, data collection and management.
 - Contribute to science committees to improve the state's forest practice rules.

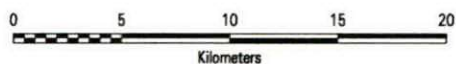
Pacific
Ocean

Map of Existing Roads in the Redwood Creek Watershed, 1992

Redwood National
and
State Parks



-  **Redwood National
and State Parks**
-  **Watershed Divide**
-  **Existing Road Network**
-  **Redwood Creek**



HISTORY OF ROAD CONSTRUCTION Redwood Creek Watershed Upstream of Redwood National Park

- LEGEND**
-  Roads
 -  Redwood Creek
 -  Upper Basin Watershed Divide
 -  Redwood National Park

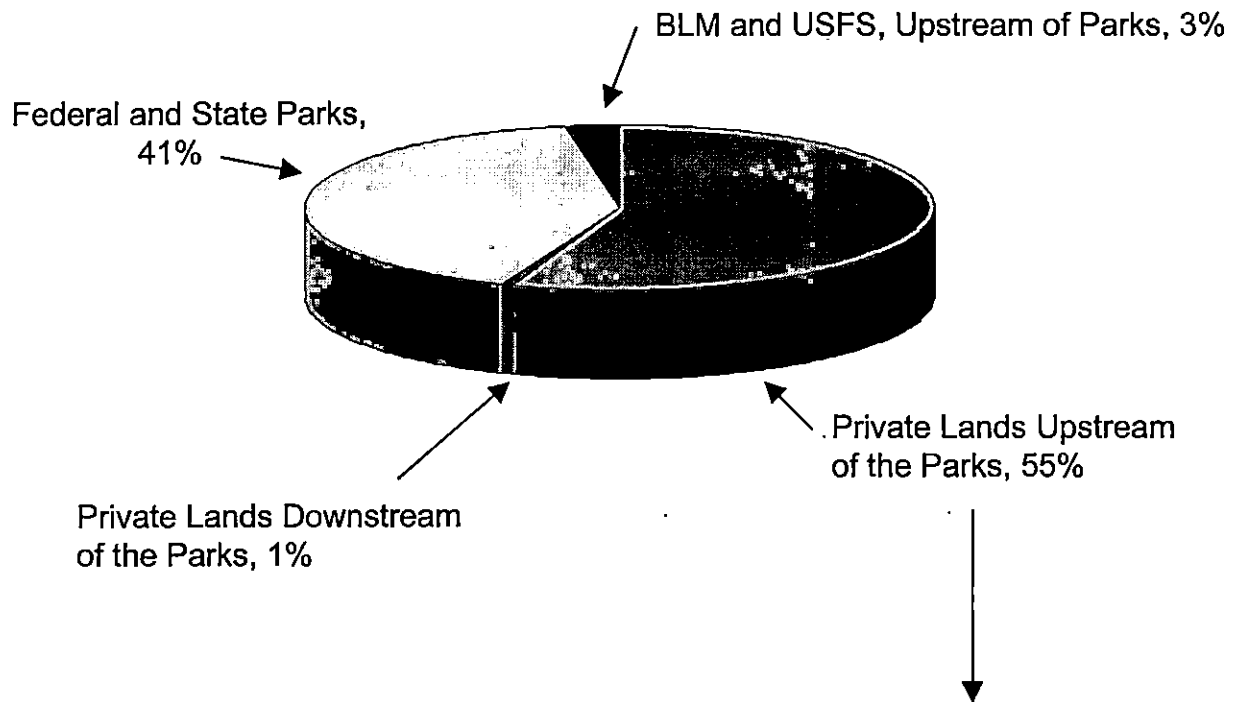
0 5 10 15 20
Kilometers



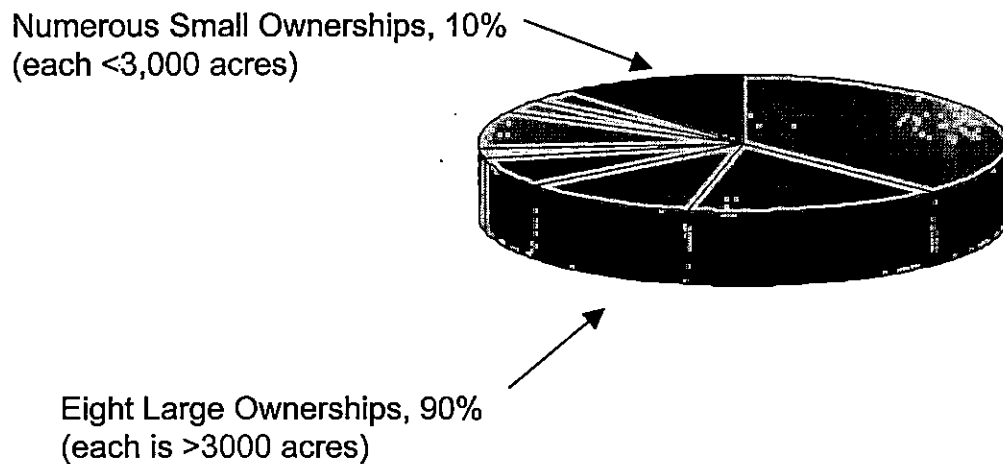
CONSTRUCTED: (A) PRIOR TO 1964 (66%) (B) 1964 - 1978 (14%) (C) 1978 - 1992 (20%)

Land Ownership in the Redwood Creek Watershed

Total Watershed Area 180,000 acres



Private Lands Upstream of the Parks 100,000 acres



Agreement #
Company Name

GENERAL AGREEMENT

between

NATIONAL PARK SERVICE

REDWOOD NATIONAL PARK

and

PRIVATE LANDOWNERS

REDWOOD CREEK BASIN, HUMBOLDT COUNTY

to

PROVIDE A FRAMEWORK FOR COOPERATIVE

EROSION CONTROL IN THE REDWOOD CREEK BASIN

GENERAL AGREEMENT
between
NATIONAL PARK SERVICE
REDWOOD NATIONAL PARK
and
PRIVATE LANDOWNERS
REDWOOD CREEK BASIN
to
provide a framework for cooperative
erosion control in the Redwood Creek basin

Article I. Background and Objectives

The National Park Service (hereinafter the SERVICE) administers Redwood National Park, established as a unit of the National Park System, United States Department of the Interior, pursuant to Public Law 90-545, as amended (16 USC 79). Established in 1968 to preserve significant examples of primeval coastal redwood forest and the streams and seashore with which they are associated, the park now occupies the lower-third of the Redwood Creek basin. Lands upstream from the park are primarily industrial timberlands managed by private landowners (hereinafter the LANDOWNER) for long-term timber production and ranching.

Timber operations on private lands are regulated by the State of California and the Z'berg-Nejedly Forest Practice Act of 1973. Since passage of this Act, timber harvest rules have been shaped by new state and federal laws, and court decisions. Critics of the forest practice rules suggest the rules fall short of adequate resource protection, while private landowners believe the rules have grown exceedingly complex and burdensome.

Cooperative efforts between the SERVICE and LANDOWNER can provide increased protection to park resources and economic stability to the timber industry. The SERVICE'S objective is to protect park resources from the potential impacts associated with large storms and timber harvest activities, like road construction. The LANDOWNER'S objective is to ensure long-term timber production from private lands and other management goals without additional state regulation. These objectives can be reached through cooperative efforts.

Section 101(a)(6) of Public Law 95-250 (16 USC 79c(e)) authorizes the National Park Service to enter into cooperative agreements with private landowners in the Redwood Creek basin for implementing a program for the rehabilitation of areas upstream from Redwood National Park contributing significant sedimentation.

Section 101(a)(6) of Public Law 95-250 (16 USC 79c(e)) also directs the National Park Service to undertake and publish studies on erosion and sedimentation originating within the

hydrographic basin of Redwood Creek.

Both parties therefore understand and agree as follows:

Article II. Statement of Work

The SERVICE and LANDOWNER shall voluntarily cooperate to identify, prioritize, and correct, where economically feasible, potential sediment sources within the Redwood Creek basin.

This General Agreement shall not be construed as a grant of permanent access to or interest in LANDOWNER lands or roads. Written permission shall be obtained from the LANDOWNER prior to entry.

The SERVICE shall summarize annual accomplishments as related to this General Agreement and distribute it to the LANDOWNER by January 31 of each year.

Article III. Term of Agreement

This General Agreement shall terminate December 31, 2005, at noon, California time, unless prior thereto it is relinquished, abandoned, or otherwise terminated pursuant to the provisions of this agreement or of any applicable Federal law or regulation. This General Agreement may be renewed or otherwise amended by the mutual written agreement of the parties. The effective date of the Agreement shall be the date of its execution by the Director (or his/her delegate).

Article IV. Key Officials

Superintendent
Redwood National Park
1111 Second Street
Crescent City, California 95531

Title
Company
Address

Article V. Property Utilization

Not applicable

Article VI. Prior Approval

Not applicable

Article VII. Reports

The Service shall provide data, maps and summaries of conditions to the LANDOWNER when inventories for potential sediment sources are performed by the SERVICE, or its cooperator, at the request, or by permission, of the LANDOWNER.

Article VIII. Termination

Either party may terminate this General Agreement prior to the expiration of its term by providing sixty (60) days written notice to the other.

Article IX. Required Compliance

During the performance of this General Agreement, the participants agree to abide by the items of Executive Order 11246 on nondiscrimination and will not discriminate in employment opportunities against any person because of race, color, religion, sex or national origin. The participant will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex or national origin.

No member or delegate to Congress, or resident Commissioner, shall be admitted to any share or part of this General Agreement, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

IN WITNESS WHEREOF, the Superintendent of Redwood National Park acting on behalf of the United States, in the exercise of the delegated authority from the Secretary of the Department of the Interior, has caused this Agreement to be executed this ____ day of _____, 2000.

NATIONAL PARK SERVICE
Redwood National Park

LANDOWNER/COMPANY

Superintendent

NAME
TITLE

Agreement Officer

ORIGINAL

FWS NO: 14-48-0001-95 **669**
Charge Code: 11420-1126-0000

DCN: 11420-5-0349

Amount Obligated: \$144,500

NPS NO: 14431A8480950001

INTERAGENCY AGREEMENT

between

U. S. Fish & Wildlife Service

Region 1

and

National Park Service
Redwood National Park

I. INTRODUCTION

The U.S. Fish and Wildlife Service has a shared responsibility with Redwood National Park and a variety of other federal and state agencies for the conservation of fish and wildlife, and their habitats. The U.S. Fish and Wildlife Service and Redwood National Park have a common goal of protecting, conserving, and restoring these natural resources held in the public trust. This Interagency Agreement acknowledges that fish and wildlife need healthy functioning ecosystems and that the sharing of personnel, expertise and other resources is necessary in order to be successful and effective in reaching this goal.

As cooperating agencies in the Record of Decision for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (also known as President Clinton's Forest Ecosystem Management Plan), the U.S. Fish and Wildlife Service and Redwood National Park also recognize the need to work cooperatively towards ecosystem restoration and facilitation of employment opportunities in the Redwood Creek watershed.

Under the guidance of President Clinton's Forest Ecosystem Management Plan and Congressional appropriations, this Interagency Agreement provides for limited interchange of services, personnel, equipment, facilities and funds to implement watershed-based restoration projects on private lands upstream of Redwood National Park, using labor secured from timber-dependent communities to the greatest extent possible.

II. AUTHORITY

This Interagency Agreement is hereby made and entered into by and between Redwood National Park, U.S. Department of the Interior, hereinafter referred to as the Park, and the Fish and Wildlife Service, U.S. Department of the Interior, hereinafter referred to as the Service, under the authority of Section 1 of the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq*) and Section 7 of the Fish and Wildlife Act of 1956 (16 U.S.C. 742 (a)(4)).

The National Park Service is authorized under Section 101(a)(6) of Public Law 95-250 (16 U.S.C. 79c(e)) to enter into agreements with other agencies and any political and governmental subdivision thereof to initiate, provide funds, equipment, and personnel for implementing a program for the rehabilitation of areas upstream from Redwood National Park contributing significant sedimentation because of past logging disturbances and road conditions.

III. PURPOSE

This Interagency Agreement is entered into between the Service and the Park for the purpose of funding the Park to design, engineer, implement, and monitor watershed restoration projects under the guidance of President Clinton's Forest Ecosystem Management Plan and employing workers from timber-dependent communities, to the greatest extent possible, in the Redwood Creek watershed.

IV. PERIOD OF PERFORMANCE

The period of performance of this Agreement is from June 1, 1995 through June 1, 2001.

V. OBLIGATION OF THE PARTIES

A. OBLIGATIONS OF THE SERVICE:

1. The Service shall provide funds in the amount of \$144,500 to the Park to design, engineer, implement, and monitor watershed restoration projects on privately owned lands in the Redwood Creek watershed
2. The Service shall allow up to 15% (overhead rate) of the total funding for costs associated with project administration, environmental compliance, monitoring, and applicable permits.
3. Service field staff will assist in the selection of watershed restoration projects.

4. The Service will provide technical assistance on contaminants, federal permits and federally listed threatened/endangered species issues. It should be noted, however, that the Park is ultimately responsible for compliance with and obtaining all applicable federal, state, and local permits for project work.

5. The Service will assist the Park in accessing a labor force from timber-dependent communities in Northwestern California, to the greatest extent possible.

B. OBLIGATIONS OF THE PARK:

1. The Park will use the funding for contract labor, equipment rentals, and materials through an existing Cooperative Agreement with the Humboldt County Resource Conservation District, hereinafter referred to as the District, to perform watershed restoration activities under this Interagency Agreement.

2. The Park will provide technical oversight for monitoring of watershed restoration projects.

3. The Park will provide a budget identifying activity categories and associated costs.

4. The Park, in cooperation with the District and private landowners, shall utilize labor obtained from timber-dependent communities in Northwestern California, to the greatest extent possible, to perform watershed restoration activities pursuant to this Interagency Agreement.

5. The Park will provide periodic progress reports to the Service documenting overall program activities and accomplishments, efforts to utilize labor from timber-dependent communities, and cost breakdown by activity. The Park will submit a final report to the Service within 90 days of completion of each project.

C. SERVICE/PARK COOPERATIVE OBLIGATIONS:

1. The Service, in cooperation with the Park, will ensure that all projects are consistent with the principles in President Clinton's Forest Ecosystem Management Plan and Congressional appropriations.

2. The Service and the Park will cooperate and share responsibilities for developing project specifications, estimating project costs, conducting land surveys, obtaining permits, and responding to information requests about watershed restoration activities under President Clinton's Forest Ecosystem Management Plan.

3. The Service, in coordination with the Park, will develop a public outreach program. The Service and the Park will inform each other of opportunities for tours and media events with: Congressional delegations, other dignitaries, members of scientific and academic communities, and the general public.

VI. PROJECT OFFICERS

A. PROJECT OFFICER FOR THE SERVICE

Bruce G. Halstead
Project Leader
U.S. Fish and Wildlife Service
Coastal California Fish and Wildlife Office
1125 16th Street, Room 209
Arcata, CA 95521

Phone: (707) 822-7201

B. PROJECT OFFICER FOR THE PARK

Andrew T. Ringgold
Park Superintendent
Redwood National Park
1111 Second Street
Crescent City, California 95531

Phone: (707) 464-6101

VII. FUNDING

1. Funds in the amount of \$144,500 are obligated to reimburse the Park for the work performed pursuant to this Interagency Agreement. A Standard Form 270 Request for Advance Payment or Reimbursement should be mailed to the Service Project Officer.

2. Method of Payment:

a. Following an advance payment equal to \$32,000.00 the Park hereafter, shall present to the Service requests for payment on a quarterly basis.

VIII. SPECIAL PROVISIONS

Nothing herein shall be considered as obligating the Service to expend funds or otherwise obligate the Service for the future payment of money in excess of appropriations authorized by law and administratively allocated for the watershed restoration activities associated with President Clinton's Forest Ecosystem Management Plan.

IX. MODIFICATIONS

Modifications to the Interagency Agreement may be proposed by either party and shall be effected by issuance of a written instrument using Standard Form 30 Amendment of Solicitation/Modification of Contract.

FOR THE U.S. FISH AND WILDLIFE SERVICE

Gerry A. Jackson

H. Dale Hall

Gerry A. Jackson 7/11/95
ARD-North Pacific Coast Ecoregion Date

H. Dale Hall JUL 11 1995
ARD-Klamath & Coastal CA Ecoregion Date

SERVICE CONTRACT SUFFICIENCY REVIEW

By: Robert M. Bice Date: 7/10/95

Title: Contracting Officer

FOR REDWOOD NATIONAL PARK

By: Cindus L. L. L. Date: 7/18/95

Title: Superintendent

CONTRACT SUFFICIENCY REVIEW

By: Marka Seidel Date: 7/18/95

Title: Agreement Officer

COOPERATIVE AGREEMENT
BETWEEN
U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
REDWOOD NATIONAL PARK
AND
HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT
FOR
EROSION CONTROL, WATERSHED REHABILITATION AND FISHERIES
ENHANCEMENT ON PRIVATE LANDS IN THE REDWOOD CREEK BASIN

ARTICLE I. BACKGROUND AND OBJECTIVES

WHEREAS, Section 101(a)(6) of Public Law 95-250 (16 U.S.C. 79c(e)) directed Redwood National Park to undertake and publish studies on erosion and sedimentation originating within the hydrographic basin of Redwood Creek; and

WHEREAS, Section 101(a)(6) of Public Law 95-250 (16 USC 79c(e)) authorized the National Park Service to enter into agreements with agencies of the State of California and any political or governmental subdivision thereof to initiate, provide funds, equipment, and personnel for implementing a program for the rehabilitation of areas upstream from Redwood National Park (hereinafter the PARK) contributing significant sedimentation because of past logging disturbances and road conditions; and

WHEREAS, the PARK has qualified personnel to conduct erosion control, watershed rehabilitation, and fisheries enhancement projects; and desires to implement a program for the rehabilitation of areas upstream from the PARK which contributes significant sedimentation because of past logging disturbances and road conditions; and

WHEREAS, the Humboldt County Resource Conservation District (hereinafter referred to as the DISTRICT) is organized under Division 9 of the Public Resource Code of the State of California as a special district of the State; and

WHEREAS, the DISTRICT is responsible for providing assistance to private landowners for the development and implementation of programs for the conservation and protection of soil, water, and associated biological resources within its area of consideration; and

WHEREAS, the DISTRICT is an ideal mechanism for bringing together various individuals from the Government and private sectors to affect conservation and rehabilitation; and

WHEREAS, the PARK and the DISTRICT are mutually interested in and desire to enter into this Agreement to affect resource conservation and rehabilitation through sediment reduction and habitat improvement efforts; and

WHEREAS, cooperative efforts in watershed rehabilitation on private lands in the Redwood Creek basin are valuable and necessary for the protection and enhancement of resource found in the PARK in particular and throughout the Redwood Creek basin in general.

NOW THEREFORE, in consideration of the above premises and in the interest of the mutual advantage in attainment of common objectives, the parties hereto desire to cooperate and therefore mutually agree as follows:

ARTICLE II. STATEMENT OF WORK

A. The PARK agrees to:

1. Identify willing landowners in the Redwood Creek basin who are interested in performing erosion control, watershed rehabilitation and fisheries enhancement projects on their lands.
2. Perform the necessary work to plan, design and specify erosion control, watershed rehabilitation and fisheries enhancement work in cooperation with willing landowners.
3. Prepare with landowners mutually agreed upon work plans, technical specifications, costs or cost-share arrangements that can be reduced, verbatim, into a contract between the DISTRICT and private landowners.
4. Serve as the technical representative for the DISTRICT to ensure work plans and technical specifications are adhered to.
5. Inspect completed work for authorization of DISTRICT payments to landowners or contractors/sub-contractors as described in the contract(s).
6. Facilitate project review by the DISTRICT Board of Directors and its employees before and after project completion.

B. The DISTRICT agrees to:

1. Develop and administer contracts between the DISTRICT and private landowners and contractors/sub-contractors that incorporate, verbatim, the work plans, technical specifications, costs or cost-share arrangements developed by the PARK and the landowners.
2. Disburse funds to landowners or contractors/sub-contractors for completion of erosion control, watershed rehabilitation and fisheries enhancement projects in the Redwood Creek basin as described in the contract(s).
3. Encourage private landowners and contractors/subs-contractors to utilize workers from timber-dependent communities, to the greatest extent possible, in accordance with President Clinton's Forest Ecosystem Management Plan and Congressional

appropriations (Option Nine funds).

4. Specify in each contract, charge a 10% (maximum) administrative fee, payable to the DISTRICT, from funds for erosion control, watershed rehabilitation and fisheries enhancement contracts, excluding any form of monetary or in-kind services committed by the private landowners.
5. Depend solely on the PARK technical representative for reports of satisfactory work completion and authorization for payments prior to issuing payments for work completed under the terms of the contract(s).
6. Keep adequate financial records to permit audit or review as in accordance with Articles XI and XII.

ARTICLE III. TERM OF AGREEMENT

This Agreement shall become effective upon the date the Agreement Officer's signature and shall remain in effect for a period of five (5) years from the effective date hereof, at noon, California time, or until terminated as provided in Article IX. The approximate five year term notwithstanding, this Agreement shall be subject to annual review, on or about June 1, of each year during the term of this Agreement to reconsider benefits, costs and possible modifications. The term of each erosion control, watershed rehabilitation or fisheries enhancement project will be set forth in each modification to the Agreement. This Agreement may be renewed or otherwise modified by the mutual written agreement of the parties.

ARTICLE IV. KEY OFFICIALS

A. The personnel listed below are identified as key staff and considered essential to the effort being performed under this Agreement.

1. PARK Personnel:

Superintendent
Redwood National Park
1111 Second Street
Crescent City, CA 95531

Gregory J. Bundros, Geologist
Redwood National Park
1125 - 16th Street
Arcata, CA 95521

Tekla Seidl Vines, Agreement Officer
Redwood National Park
1111 Second Street
Crescent City, CA 95531

2. DISTRICT Personnel:

Humboldt County Resources Conservation District
Mark Meissner
Acting District Conservationist
Eureka, CA 95503

B. Upon any changes in the DISTRICT'S key officials, the DISTRICT shall notify the Agreement Officer in writing.

ARTICLE V. AWARD, PAYMENT/INVOICES

A. Nothing in this Agreement shall be construed as obligating the PARK or the DISTRICT to expend any funds in excess of appropriations as authorized by law.

B. The financial assistance amount shall be specified in subsequent modifications.

C. The DISTRICT shall require landowners and contractors/sub-contractors to provide financial records documenting all project related expenditures. Records shall include, at a minimum, invoices containing the following information:

- A. Invoice date, landowner and sub-contractor names
- B. Cooperative Agreement Number
- C. Modification No.
- D. Description of work completed, unit price, and extended totals

D. Invoices for reimbursement shall be submitted upon acceptance of each Modification or no more frequently than monthly, as applicable, and addressed to:

Redwood National Park
Attention: Agreement Officer
1111 Second Street
Crescent City, CA 95531

E. Prior to issuing payment, the DISTRICT shall send all contractor/subcontractor vouchers to the PARK technical representative identified in each Modification for review and authorization of payment.

F. The PARK will issue a bill of collection to the DISTRICT for the return of funds in excess of those needed to complete any particular erosion control project.

ARTICLE VI. PRIOR APPROVAL

DISTRICT must be in accordance with OMB Circular A-102 "Uniform Administrative Requirements for Grants-in-Aid to State and Local Governments" and the "Common Rule", 43 CFR Part 12., Subpart C, Paragraph 12.70.

ARTICLE VII. REPORTS

A. Reports shall be submitted as required by the "Common Rule", 43 CFR Part 12., Subpart C, Paragraphs 12.80, 12.81 and 12.09.

B. Time of Delivery:

Delivery is required by the Government in accordance with the following schedule:

1. Special Technical Reports and/or Synthesis shall be submitted as set forth in each modification.

C. Correspondence

Copies of all correspondence and written notices between the PARK and the DISTRICT shall be sent to the cognizant Agreement Officer at the following address:

Tekla Seidl Vines, Agreement Officer
Redwood National Park
1111 Second Street
Crescent City, CA 95531

ARTICLE VIII. PROPERTY UTILIZATION AND DISPOSITION

Any tools, equipment, material, or other property supplied by the PARK shall remain the property of the Government.

ARTICLE IX. TERMINATION

Termination of this Agreement shall ONLY be in accordance with OMB Circular A-102 and the "Common Rule", 43 CFR Part 12, Subparts 12.83 and 12.84.

ARTICLE X. GENERAL AND SPECIAL/ADDITIONAL PROVISIONS

A. General Provisions:

1. OMB Circulars A-87 and A-102 and the "Common Rule", 43 CFR Part 12 are incorporated into this Agreement.

B. Special/Additional Provisions:

1. Drug-Free Workplace Requirements, 43 CFR Part 12, Subpart D, Chapter 12.600 through 12.630.
2. Restrictions on Lobbying Disclosure Requirements, for agreements over \$100,000.00 (43 CFR Part 12).
3. MBE/WBE Utilization Under Federal Grants, Cooperative Agreements, and other Federal Assistance Agreements, 505 DM 3.6(E)(2).
4. Limitations on Payments to Influence Certain Federal Transactions, FAR 52.203-12.
5. Civil Rights Assurance Requirements.

C. Certifications:

The following certifications are required in accordance with the above additional provisions and are attached hereto and made a part of this Agreement:

1. Drug-Free Workplace, DI-1956.
2. Lobbying Certification for all agreements which will total over \$100,000.00, SF-LLL.
3. MBE/WBE Utilization Under Federal Grants, Cooperative Agreements and Other Federal Assistance Agreements, SF-334.
4. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions, DI-1963.
5. USDI - Civil Rights Assurance Certificate, DI-1350.

Section 1. Civil Rights

During the performance of this Agreement, the participants agree to abide by the terms of Executive Order 11246 on non-discrimination and will not discriminate against any person on the basis of race, color, religion, sex or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to race, color, religion, sex or national origin.

Section 2. Officials Not To Benefit

No member or delegate to Congress, or resident Commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

In connection with and including the performance of work under this Agreement, the DISTRICT agrees not to employ, enter into any contract with, or provide any benefit arising from this Agreement to employees of the United States Government.

Section 3. Promotions

DISTRICT shall not publicize, or otherwise circulate, promotional materials (such as advertisements, sales brochures, press releases, speeches, still and motion pictures, articles, manuscripts or other publications) which states or implies Governmental, Departmental, bureau or Government employee endorsements of a product, service, or position which the DISTRICT represents. No release of information relating to this Agreement may state or imply that the Government approves of the DISTRICT'S work product, or considers the DISTRICT'S work product to be superior to other products or services.

Section 4. Public Information Release

DISTRICT must obtain prior Government approval from the Park Superintendent for any public information releases which refer to the Department of the Interior, any bureau, park unit, or employee (by name or title), or this Agreement. The specific text, layout, photographs, etc., of the proposed release must be submitted with the request for approval.

ARTICLE XI. FINANCIAL MANAGEMENT SYSTEMS

A. The DISTRICT shall maintain acceptable financial systems during the term of this Agreement. Such systems shall provide: accurate, current and complete disclosure of the financial activity under this Agreement; effective control over and accountability for all funds, property and other assets; comparison of actual outlays with budgeted agreement amounts; accounting records supported by source documentation.

B. The DISTRICT shall arrange for an annual examination by an independent accountant in order to ascertain the effectiveness of the DISTRICT'S financial management systems and the internal procedure established to meet the terms of this Agreement.

ARTICLE XII. RECORDS RETENTION AND AUDIT

A. The DISTRICT shall retain pertinent books, documents, and papers including transactions and supporting documents, general accounting systems, internal controls, management practices, policies and procedures. Such books, documents, papers and records shall be retained by the

DISTRICT for a period of three years following the date of final payment under this Agreement.

ARTICLE XIII. LIABILITIES

A. The Government agrees to cooperate, to the extent allowed by law, in the submission of claims pursuant to the Federal Tort Claims Act against the United States by third parties for personal injury or property damage resulting from the negligent act or omission of any employee of the Government in the course of his/her employment (28 U.S.C., 2671, et seq.)

ARTICLE XIV. LAWS GOVERNING

A. This Agreement shall be governed by and construed in accordance with the laws of the United States Government and the State of California.

ARTICLE XV. ENTIRE AGREEMENT

A. This Agreement contains the entire agreement of the parties, and no representation, provision, warranty, term, condition, promise, duty or liability, expressed or implied, shall be binding upon or applied to either party, except as herein stated. No amendment or modification of any term, provision or condition of this Agreement shall be binding or enforceable unless in writing and signed by each of the parties.

IN WITNESS HEREOF, the parties hereto have signed their names and executed this Agreement.

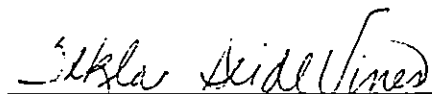
NATIONAL PARK SERVICE



William H. Ehorn, Superintendent
Redwood National Park

3-31-95

Date

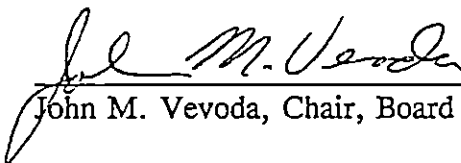


Tekla Seidl Vines, Agreement Officer
Redwood National Park

3-31-95

Date

HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT



John M. Vevoda, Chair, Board of Directors

4/27/95

Date

Reviewed by:

ID No.:

REDWOOD CREEK BASIN ROAD INVENTORY FORM

Redwood National and State Parks / Pacific Watershed Associates

Version 5/6/00

Check _____

ASAP _____

SECTION I: GENERAL SITE INFORMATION

Road Name: _____ Site # _____ Date: _____ By: _____
 Watershed: _____ Ownership _____ Year built: _____
 Quad ID: _____ Photo# _____ Photo date: _____
 Current road condition: Drivable [Maintained Abandoned Decommissioned]
 The road surface is: [Native Rocked Paved]
 Proposed Treatment: [Maintain Upgrade Decommission]

SECTION II: FLUVIAL SITE (CROSSINGS, RELIEF CULVERTS, GULLY, ETC.)

FEATURE: [Stream crossing Skid Xing *Ditch/road relief Road reach] Spring
EROSIONAL PROCESS: None Gully Streambank/channel eros. Collapsing Fill failure
DRAINAGE STRUCTURE: Bridge *Culvert: *metal *concrete *plastic
 Humboldt Fill Ford Armored fill Pulled
 Critical dip@xing? Y N Left ditch/road length _____ ft. Right ditch/road length _____ ft.
DIVERSION POTENTIAL: DP? Y N Now diverted Past diverted Rd grade _____ %
CONDITION OF FILL: Intact removed _____ % washed-out _____ %

CULVERT INLET INFORMATION:

*Diameter _____ in. Headwall height _____ in. Rust line: width _____ in. depth _____ in.
 Upstream channel: width _____ ft; depth _____ ft; grade _____ %

Stream class: I, II, III, or IV Sediment transport: H M L

Does culvert look undersized? Y M N Plug potential: H M L

*Inlet condition: OK Rust/holes Band separation Trash rack Drop inlet

*crushed _____ % *plugged _____ %

CULVERT OUTLET INFORMATION:

*Condition: OK Rust/holes Functional downspout %crushed _____ % Shotgun

Fish-outlet drop: now _____ ft. @bankfull _____ ft. Culvert grade _____ %

Pool dim.: length _____ ft. depth _____ ft. @bankfull: length _____ ft. depth _____ ft.

Comments:

SECTION III: LANDSLIDE SITE

FEATURE: Swale Road fill Landing fill Cutbank Hillslope
PROCESS: Slow, deep seated Fast, shallow debris slide Will it debris torrent? Y M N
SETTING: Streamside (<55%) Inner gorge (>55%) Headwall Break-in-slope Hillslope
 Distance to stream _____ ft. Slope _____ %
ACTIVITY: Failed in past? : Y N %failed _____ %
ASSOCIATION(S): Road related Water onto feature Spring Stream undercutting

SECTION IV: TREATMENTS (Circle all that apply)

Critical dip@xing Install culvert Replace culvert New culv: dia. _____ in. len _____ ft.
 Drop inlet Flared inlet Trash rack Remove sed@CMP inlet Brush inlet
 Reconstruct fill Excavate fill Ford Bridge Other None
 Armor fillslope: @inlet _____ ft²; Downstream face _____ ft² Downspout _____ ft.
 Armored fill: sill height _____ ft. sill width _____ ft. Check culvert size _____
 ***** URGENCY: H M L COMPLEXITY: H M L *****

ROAD REACH TREATMENTS

Clear/est. IBD _____ ft. Remove IBD _____ ft. Rock road _____ ft². Remove berm _____ ft.
 Rolling dips: # _____ OS w/out IBD _____ ft. OS w/IBD _____ ft. Inslope road _____ ft.
 Cross-road drains # _____ Ditch relief culvert # _____ ft.

SECTION V: FILL AND FUTURE EROSION VOLUMES

Dimensions of landslide or gully: length: _____ ft. width: _____ ft. depth: _____ ft.
 (Use Comment Section below to record dimensions of complex features)

Future erosion volume: _____ yd³ %delivery: _____ % Future yield: _____ yds³

Erosion Potential: H M L Potential for Extreme Erosion? Y N

Is the treatment likely to control or prevent erosion?: Y M N

Extreme Erosion Potential Volume (yds³): [<500, 500-1000, 1K-2K, 2K-5K, >5K]

DRAFT
Meeting Agenda
Private Landowners of Redwood Creek and Redwood National and State Parks
9:00a.m. September 26, 2000
Stewart School Building, Arcata

1. Welcome and Introductions – Andy Ringgold
2. Purpose of Meeting – Andy Ringgold
3. Summary of Accomplishments since 1995 MOU – Terry Hofstra
 - Review of minutes from November 15, 1994 meeting
 - Agreements, pilot projects, partnerships
 - George Wright Society Article describing our agreement and efforts
4. Existing Cooperative Efforts – Greg Bundros
 - Road assessments and road upgrade/decommissioning projects
 - RNSP involvement in THP planning and reviews
4. Possible Areas for New Cooperative Efforts – Greg Bundros
 - Share data and coordinate basin-wide monitoring/inventory efforts
 - Advocate a state-sponsored watershed analysis for salmonid species
 - Expand stream gaging network for Redwood Creek
5. Water Storage on Redwood Creek for Fire Suppression – Jim Able

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 - Expand stream gaging network for Redwood Creek
 - Communicate road improvements to the parks
 - Share data and coordinate basin-wide monitoring/inventory efforts
 - Advocate a state-sponsored watershed analysis for salmonid species
6. Water Storage on Redwood Creek for Fire Suppression – Jim Able

Road #	Site #	Project Description	Est. Cost	Actual cost	Actual cost	EP cu. Yds
		13 outslope landing	1500	1300		1200
		14 outslope landing	0	1282		372
		16 minimize fill	0	191		60
		17 remove xing de-comm rd	5265	1806		572
		18 Pull back landing de-comm rd	6680	10232		5950
		19 remove xing de-comm rd	100	682		120
		20 remove xing de-comm rd	200	1110		175
487.1		decomm .3 miles road				
		1 pull back landing	1210	2235		660
		2 pull back fill slope	945	964		630
487.2		decomm .3 miles road				
		1 pull back fill slope	1620	1250		1080
480		improve road prism 4.2 miles	9850	8892		
		18 pull back fill slope	1480	1097		135
		20.1 install 24" x 40' cmp	400	646	300	90
		21 install 24" x 40' cmp	1210	1560	300	160
		22 install 30" 40' cmp	2470	2260	371	813
		24 minimize fill at crossing	200	275		120
		26 install 48" x 60' cmp	2152	2784	1051	323
		30 install bridge place rip rap abutments	6500	9754	14,000	170
482		improve road prism	0	4140		
490		improve road prism	0	3968		
mobilization		move in	1500	2125		
463		improve road prism	0	50		
460N		improve road prism 3.0 miles	4265	8438		
		30 install 30" 40' cmp	1975	2930	370	800
		31 install 42" x 40' cmp	3135	1938	837	210
		34 install 42" x 40' cmp	3135	2466	837	255
		40 install 30" 40' cmp	2180	3120	370	315
41,47,48		install 3 18" x 40' cmp cross drains	1500	1050	740	50
		49 install 42" x 60' cmp	3820	4937	1220	540
53,54		install 2 18"x40' cmp cross drains	500	332	437	50
		55 install 24"x40' cmp	1475	694	300	100
		57 install rolling dip cross drain	360	232		50
		58 install 48" x 50' cmp	3940	5280	879	590
		59 install 18"x40' cmp cross drain	500	332	90	50
		60 install 30" 40' cmp	2730	3400	370	400
480-4		abandon road, pull culverts and fills	2500	6808		1350
480-4-1		abandon road, pull culverts and fills	2500	9632		1180
All roads		watering, haul pipe, strawing, labor etc.	0	7915		
Subtotal		End of Redwood Park Coop Project	\$ 126,552	\$ 187,567	\$ 22,772	37,302
		Total time and material cost			\$ 210,339	
		total income from grant and Simpson			\$ 100,525	
		Total SPI cost for Coop Project			\$ 109,814	
Ward road		Rock pit development (equip.+Blasting)	0	18921	25353	
430 3.3miles		Open road, brush, outslope and rolling dip	0	25022		
430		haul and spot culvert		2840		
430		0.1 install 18"x30'cmp	0	364	165	50
		0.2 install 18"x30'cmp	0	382	165	50
		0.3 install 18"x40'cmp remove cutbank slide	0	3864	215	50
		0.4 install 18"x30'cmp	0	232	165	50
		1 install 36"x40'cmp with rock armor	0	2500	715	100
		2 install 36"x50'cmp with rock armor	1710	3942	891	110
3*		dig out old Humboldt install 36"x50'cmp	3600	9196	891	60
5*		dig out old Humboldt install 54"x40'cmp	3000	4145	1090	590
6*		dig out old Humboldt install 36"x50'cmp	3000	2148	891	1816
		7 dig out old Humboldt install 24"x50'cmp	1050	2681	410	192
		8 dig out old Humboldt install 42" x 50' cmp	2450	4132	1027	105
		9 dig out old Humboldt install 36"x50'cmp	1710	2490	891	190
		10 dig out old Humboldt install 24"x40'cmp	1050	441	300	315
		12 dig out old Humboldt install 24"x40'cmp	1050	592	300	187
		14 dig out old Humboldt install 36"x30'cmp	1710	1342	540	100
457		waterbar temporary road	0	100		
450		restore outslope and rolling dips on 1 mile	0	5570		
324		abandon road, pull culverts	1750	15,506		5900
Subtotal		Lake Prairie and High Prairie Rehab	\$ 22,080	\$ 106,410	\$ 34,009	9865
		Total equipment and materials		\$ 140,419		
		Final total 1998 and 1999 expenditures		\$ 350,758		47,167

Redwood Creek Road Rehab Project						
Road #	Site #	Project Description	Est. Cost	Actual cost Equipment	Actual cost Materials	EP cu. Yds
460		de-commission 1.8 miles	1010	4251		0
460		1. Pull back landing	300	1934		630
460		2. Pull back fill slope	710	700		2470
460	3&4	Pull back landing remove xing	2000	2694		1000
460		5 remove 24" culvert	1500	587		328
460		6 install cross road drain	250	100		100
460		7 remove failed crossing	1050	696		180
460		7.2 install cross road drain	100	100		0
460		7.3 install cross road drain	100	173		0
460		8 excavate & end haul fillslope	1050	1056		350
460		9 Pull back landing	4000	4186		2500
460		10 install cross road drain	100	100		0
460		11 install cross road drain	100	100		0
460		12 install cross road drain	100	100		0
460		13 excavate crossing	1710	946		350
460		13.1 install cross road drain	100	100		0
460		13.2 excavate crossing	1200	682		350
460		14 install cross road drain	100	100		0
460		15 install cross road drain	100	100		0
460		16 Pull back fill slope	520	746		450
460		17 install cross road drain	100	200		0
460		18 excavate & end haul fillslope	1200	1338		450
460		19 install cross road drain	100	100		0
460		20 Pull back fill slope	475	632		450
460		21 excavate crossing	1260	2925		713
460		22 excavate & end haul fillslope	10260	8517		1800
460		22.1 Pull back fill slope	500	1233		197
460		24 Pull back fill slope	280	382		240
460		25 remove perched fill at bridge	1000	982		350
460		skid and bury removed cmp	0	164		0
460.1		de-commission .5 miles	1010	1000		
460.1		1 excavate crossing	610	264		150
460.1		2 excavate crossing	545	487		180
460.1		3 install cross road drain	100	100		0
460.1.1		1 Pull back fill slope	1340	1706		730
460.1.1		2 Pull back fill slope	1315	1051		460
460.1.1		3 excavate crossing	375	100		150
463		de-commission .6 miles	845	1696		
463		1 excavate crossing	715	482		250
463		3 Pull back fill slope	570	182		200
487		Improve road prism 1.6 miles	4225	7820		
		1 realign road through crossing	1525	4906		907
		7 minimize fill at crossing	500	1560		
		8 minimize fill at crossing	500	1260		
		9 Pull back landing	475	746		325
		10 install 24"x40"cmp	1635	1639	300	175
		10.5 remove slide and endhaul	0	4750		1200
		11 Pull back landing	595	1624		190
		12 minimize fill at crossing	600	2163		907

List of Company/Landowner Representatives
Landowner-Redwood National Park Meeting
September 26, 2000

Simpson Timber Company:

- Jim Brown, Vice President, General Manager
- Neil Ewald, Timberlands Manager
- *John Plantin, Operations Manager
- *Mike Kennedy, Forest Engineer
- Tharon O'Dell, Resources Manager, current Board of Forestry

Barnum Timber Company:

- *• Bob Barnum, President, General Partner
- Ed Mendes, Resources Manager
- *Steve Horner, Forester

Eel River Saw Mills, Inc.

- Dennis Scott, Vice President
- *Kim Browning, Resources Manager

Sierra Pacific Industries:

- *• Tom Walz, District Manager
- Bill Blackwell, Forester
- Steve Self, Biologist

Russ Ranch and Timber Company (managed by Western Timber Service)

- *Bill Kleiner, President, Western Timber Service
- Jack Russ, Principal
- Joseph Russ IV, Principal, past Board of Forestry

Herbert E. Russ Estate (managed by Natural Resources Management Corp.)

- *Gary Rynerson, Principal, NRM (current Board of Forestry)
- *Paul Grunden, Forester
- Bob Kelley, Forester
- Judy Dixon, Trustee
- Jim Russ, Trustee

Stover Ranch Partnership (managed by Abel Forestry)

- *Jim Able, President, Abel Forestry
- Dan Cahoon, Forester
- *• Marlan and Helen Stover, Partner
- *• John Stover (Uncle Bill), Partner
- *Tom Stover, family
- *Libby Stover, family

* most likely to attend

- signatory on agreement

Completed and Planned Erosion Prevention Projects in the Upper Redwood Creek Basin.

Table 1. Implementation Projects, 1995 – Present.

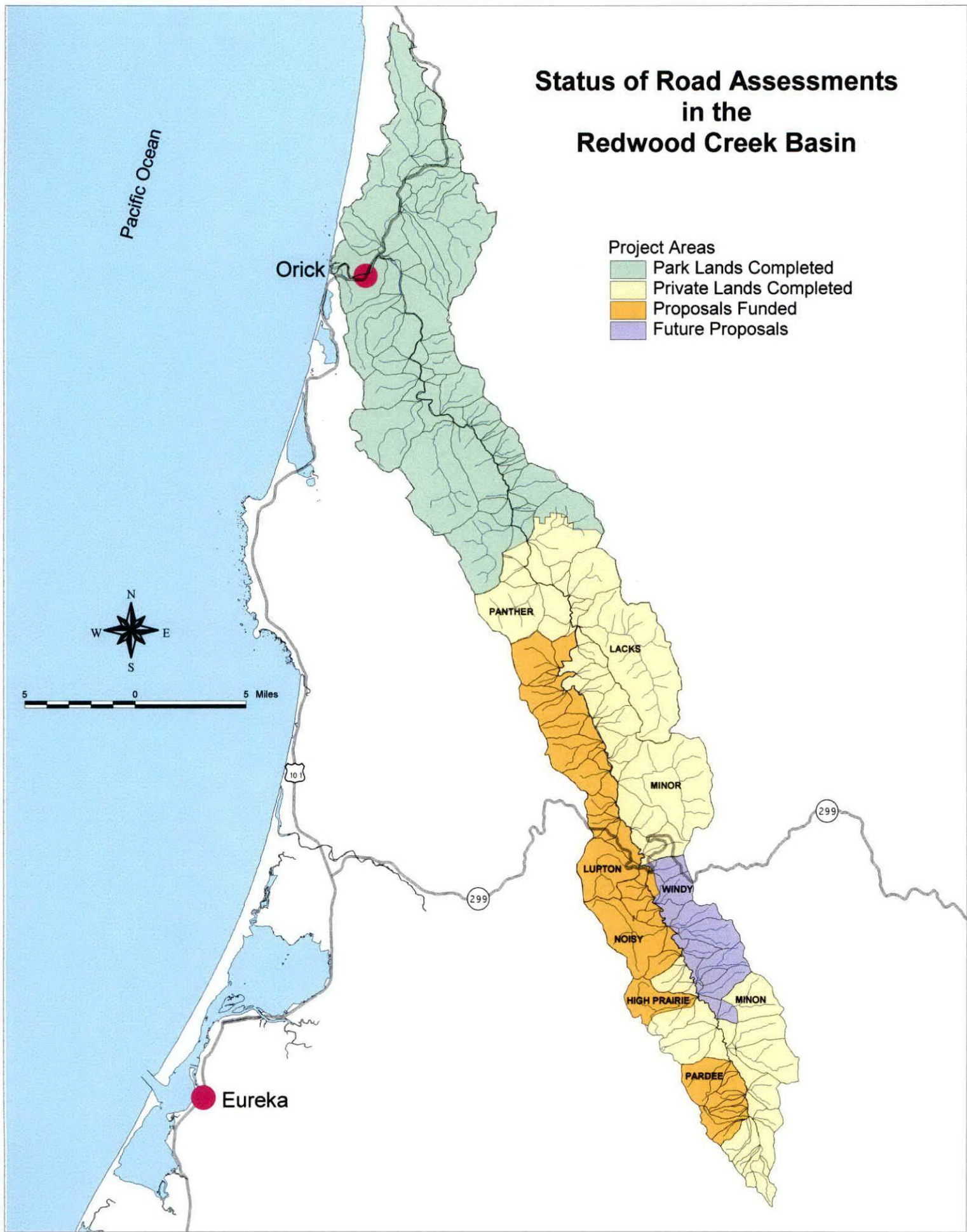
Miles Upgraded	27.3	
Miles Decommissioned	15.4	
Funding:		
Landowner	\$ 205,261	26%
JITW	299,262	38%
SB 271	195,461	25%
NPS Cash	31,000	4%
<u>NPS In-kind</u>	55,300	7%
TOTAL	\$ 778,784	100%

Table 2. Road Assessment Projects, 1996 - Present.

Acres	94,000	
Miles	851	
Funding:		
Landowner	\$ 23,000	4%
JITW	28,197	5%
SB 271	384,916	63%
NPS Cash	90,000	15%
<u>NPS In-kind</u>	86,000	14%
Total	\$ 612,113	100%

Status of Road Assessments in the Redwood Creek Basin

- Project Areas
- Park Lands Completed
 - Private Lands Completed
 - Proposals Funded
 - Future Proposals



Western Ecological Research Center <http://www.werc.usgs.gov>

Redwood Field Station

Northwestern California is home to the coast redwood, the world's tallest tree, which can reach a height of more than 365 feet. Virgin redwood forests once covered 2,000,000 acres, from Monterey to southern Oregon. Today, less than 90,000 acres remain uncut, and half of all old-growth redwood forests are protected within Redwood National and State Parks and the Headwaters Forest. Past timber harvest and road construction on steep hillslopes on surrounding lands have caused forest fragmentation and accelerated erosion, contributing to destruction of fish spawning and rearing habitat, loss of streamside shade, and increased stream temperatures.

The Redwood Field Station is located in coastal Northern California, and most research is conducted in redwood-dominated watersheds. Station scientists conduct research on issues related to timber harvest, effects of past watershed disturbances, watershed restoration, and recovery of disturbed ecosystems. The study results are applicable to restoration efforts in disturbed landscapes throughout the Pacific Northwest. The field station provides technical assistance to the National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, and other client agencies on developing inventory and monitoring plans, hillslope and channel stability assessments, and other issues.

The Redwood Field Station is currently involved in studies concerning restoration of the physical and biological landscapes in Redwood National and State Parks. The studies include inventory and monitoring of erosion, sediment transport, and stream temperatures; evaluating the effectiveness of various strategies for watershed restoration; assessing stream recovery following watershed restoration; and determining the influence of timber harvest and floods on riparian areas.



M. Madej

Science Expertise

Mary Ann Madej, Ph.D., Research Geologist,
Adjunct Professor, Humboldt State University

- Geomorphology
- Watershed restoration
- Erosion/sediment transport
- Ecological monitoring
- Riparian ecology
- Disturbance ecology

For more information, contact:

USGS Redwood Field Station
1655 Heindon Road
Arcata, CA 95521
Phone: 707.825.5148 Fax: 707.822.8441

Protecting Resources at Redwood National and State Parks through Co-operation and Understanding

TERRY HOFSTRA & GREG BUNDROS, *Redwood National and State Parks, P.O. Box 7, Orick, California 95555*

BARRY HILL, *U.S. Geological Survey, 677 Ala Moana Boulevard, Honolulu, Hawaii 96813*

Introduction

The environmental and economic consequences of timber harvesting in the Pacific Northwest have provoked controversy for decades. No place symbolizes this controversy better than Redwood National Park (RNP) which was the focal point of a bitter debate over its creation and expansion.

Background

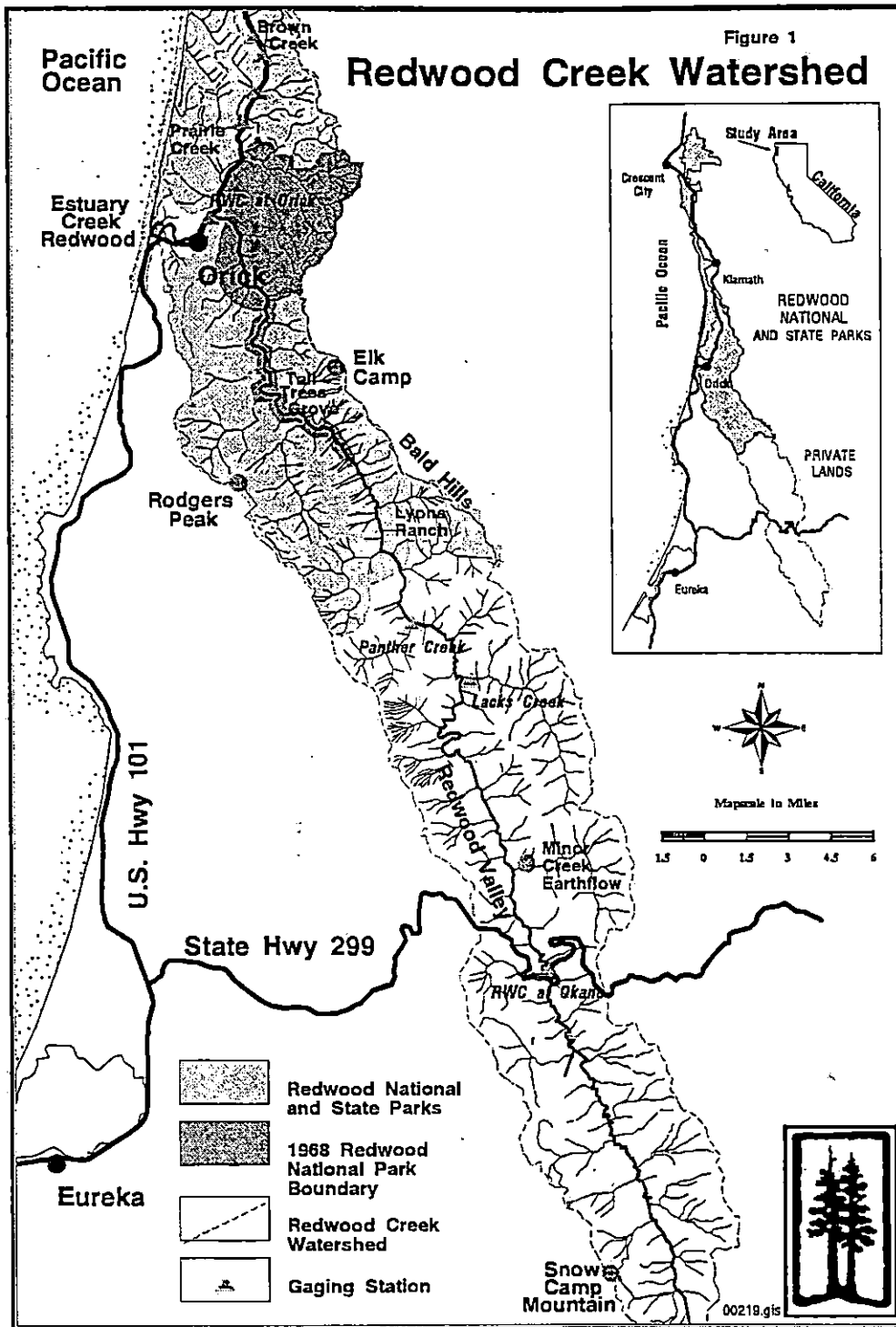
The original 1968 park boundary (Figure 1) encompassed a narrow 1/4-mile corridor along the lower reaches of Redwood Creek and was a compromise between intensely competing interests. On lands upslope and upstream of the park boundary the combination of timber harvest, logging road construction, and major storms greatly accelerated naturally high erosion rates. This resulted in a significant threat to the downstream park resources through increased sediment loads and accumulations in streams, elevated water levels, stream bank erosion, and impacts to biological resources (Ridenhour and Hofstra 1994). Conservation groups were concerned with loss of valuable park resources and filed a series of lawsuits demanding the Secretary of the Interior take action to protect park lands. After lawsuits, court decisions, contentious hearings, and considerable division among local communities, Congress expanded RNP in 1978. To reduce risk of damage to downstream park resources, this legislation authorized a program to rehabilitate areas within the park and to control erosion on private lands upstream of the park.

Erosion Control Program for Park Lands

Since park expansion, considerable progress has been made toward controlling erosion and sedimentation within the park. The focus has been on road removal because fluvial and mass wasting erosion associated with poorly located and designed logging roads are major contributors of sediment to aquatic systems. To date, approximately 173 miles of more than 445 miles of road within the Redwood Creek portion of the park have been removed. The program has gained national recognition, and methods developed at RNP (Spreiter et.al. 1995) have been applied on state and federal lands in many other locations.

Sediment Sources in Redwood Creek

Since 1978, scientific studies performed in the Redwood Creek basin have examined the quantity and origin of sediment transported by Redwood Creek and its tributaries. These studies revealed that for the period between 1981 and 1988, roughly 72 % of the total sediment transported by Redwood Creek originated from areas upstream of the park (Madej 1991). Other studies suggest that fluvial erosion of roads can account for 30 percent to more than 60 percent of all sediment entering a stream system, depending on the type of terrain and road (RNSP 1997; Best et.al. 1995; Hagans and Weaver 1987). Based upon inventories of road related erosional problems inside the park, the total erosion potential from all roads in the Redwood Creek basin is estimated at roughly 5,185,000 cubic yards of sediment. Of this total, 85 percent is associated with roads on upstream private lands (RNSP 1997). Clearly, the greatest human-influenced threat to park resources located along the mainstem of Redwood Creek is from the roads located upstream of the park.



Logging Roads in the Upper Redwood Creek Basin

Based on analysis of aerial photographs (RNSP 1997), roads upstream of the park totaled about 1,100 miles in 1992 (Figure 2). About 66 percent of these road miles were constructed before 1964, 14 percent were constructed between 1964 and 1978, and 20 percent were constructed between 1978 and 1992. Most of the upper basin roads, therefore, were built before enactment of the 1983 state forest practice rules which describe current-day road construction and erosion control standards.

Of the 1,100 miles of roads upstream of the park, about 340 miles were determined to be unmaintained and not driveable as of 1992. Another 180 miles were classified as unmaintained but still driveable. Almost half of the road network is therefore unmaintained in the upper basin. Unmaintained roads are more likely than the maintained roads to fail during a large storm as a result of plugged and rusted culverts, rotted woody debris contained in road fills, and diversion of streamflow. Current state forest practice rules do not require long-term road maintenance. Nearly 40 miles of new logging roads have been built since 1992.

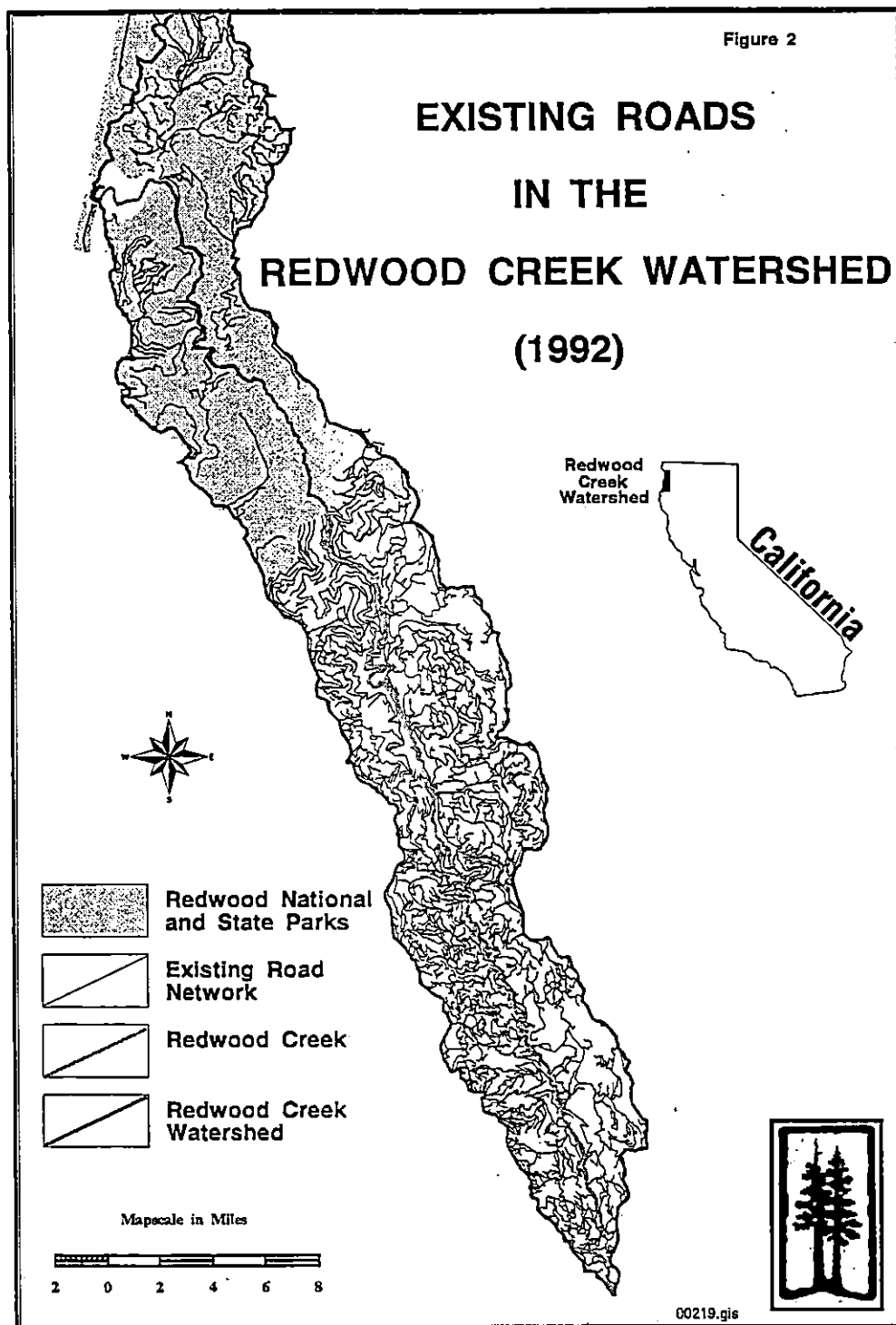
Early Attempts at Erosion Control for Private Lands (Confrontation)

Since park expansion the timber industry, private landowners, environmental activists, and government agencies have remained at odds over timber harvesting and road building practices on private lands upstream from the park. Early attempts by the park to implement an erosion control program on private lands were largely unsuccessful because of the poor relations between the park and private landowners following park expansion. The threats to aquatic and riparian resources from abandoned or poorly constructed/maintained roads also had not yet been fully understood or accepted by the general public or timber industry. The park made \$400,000 available to the California Forest Improvement Program for erosion control projects on private lands in the Redwood Creek basin but little of this funding was used. During this period, field review of timber harvest plans on private lands by park geologists was restricted. Disagreements about protective measures were often confrontational and managed to reinforce prevailing feelings of distrust. The park's ability to influence land use practices was limited.

Relations between the park and private landowners began to improve in the early 1990's. Several technical reports and professional papers describing erosional processes, sedimentation, and erosion control in the Redwood Creek basin had been published by park staff. Efforts were made to improve our public relations by personal contact with several of the landowners. As a result, between 1991 and 1993 erosion control work was performed on approximately 10 miles of roads on Bureau of Land Management (BLM) and private lands. Park geologists were also allowed to attend more field reviews of proposed timber harvest plans. While progress had been made toward improving relations and implementing an upper basin erosion control program, progress was still slow and landowner cooperation remained inconsistent and unpredictable.

Recent Attempts at Cooperative Erosion Control and Resource Protection (Collaboration and Cooperation)

In 1994, in response to public comment and newly established California Board of Forestry (BOF) Forest Practice Rules, the park decided to nominate Redwood Creek as a "sensitive watershed." Pursuant to the new BOF rules, sensitive watersheds receive added protection during timber harvest by the development and implementation of special timber harvest rules tailored to protect specific resources in a particular basin. We believed that attaining sensitive watershed status for Redwood Creek would be a great leap forward in fulfilling our legislative mandate of park resource protection.



In 1994, the park initiated meetings with representatives of timber companies operating in the watershed. The purpose of these meetings was to inform them of our intention to nominate Redwood Creek as a sensitive watershed, and to solicit their involvement in the process. Because additional forest practice regulations would result from a successful nomination, company representatives were opposed to this effort. As an alternative, they suggested the park's goals for resource protection might be realized better through cooperative and voluntary projects.

This suggestion was discussed during subsequent meetings with timber company representatives and landowners in the watershed. General agreement was reached in November, 1994, and a Memorandum of Understanding (MOU) between the park and individual companies and landowners was signed in March, 1995. The MOU's state the park and private landowners will "..... voluntarily cooperate to identify, prioritize, and correct, where economically feasible, potential sediment sources in the Redwood Creek basin." Thus, the MOU's provided a basic framework for cooperative erosion control on private lands in the upper Redwood Creek basin. These agreements were complemented by cooperative agreements with the BLM, U.S. Fish and Wildlife Service (USFWS), and Humboldt County Resources Conservation District (RCD).

Current Program for Erosion Control on Private Lands Upstream of the Park

Most of the ingredients for a successful erosion control program in the upper basin are in place today. Park and private landowner relationships have greatly improved, official agreements have been signed by the primary stakeholders, and there is an increasing awareness of the importance to control or prevent erosion from roads, especially in light of declining salmonid populations.

Two significant projects have been completed recently on private lands upstream of the park. These were cooperatively planned and funded projects involving the park, landowners, USFWS, state, and RCD. Nearly two miles of roads have been completely removed from unstable streamside areas and, with the completion of an on-going project this year, erosion control work will have treated an additional 12 miles of roads. In 1996, park staff also inventoried over 90 miles of roads on nearly 9,000 acres of private lands for erosion potentials. This is remarkable progress considering this area represents 10 percent of the upper basin and air photos had previously been our only source of information for many years.

Our participation during field reviews of proposed timber harvest plans on private lands has become more widely accepted. Besides attending most pre-harvest inspections, park geologists now perform detailed field mapping of areas proposed for timber harvest while foresters prepare their harvest plans.

By working together, resource concerns can be identified and protective measures incorporated into the harvest plan before it is submitted for filing and official review.

Continuing Obstacles

To date, funding to perform erosion control work on private lands has been provided primarily from the Jobs-in-the-Woods Program (administered by the USFWS as part of the Northwest Forest Plan (USDA and USDI 1994). While this funding has been useful, these opportunities are not always available, nor are they commensurate with the magnitude of problems found in Redwood Creek or in other watersheds throughout California and the Pacific Northwest. We believe monetary incentives for private industry in the form of tax credits or deductions for erosion control work are desperately needed to aggressively tackle the problems associated with the extensive road networks across the landscape. Tax incentives could create long-term jobs in the woods dedicated to the repair, removal and maintenance of roads on private forest lands.

There will seemingly always be some level of mistrust of government agencies among private landowners. Some landowners had lost land in the creation of Redwood National Park while others feel they have lost the use of their property through restrictive government regulation. However, much

mistrust stems from overly officious, aggressive, and confrontational experiences landowners have had with government at all levels and on a daily basis.

Summary

The goal of our present program in the upper Redwood Creek basin is to minimize erosion from private lands upstream from the park through the review of timber harvest plans, cooperative studies, erosion control projects, and coordinated resource management efforts that recognize resource protection and the long-term productivity of commercial forest lands. These cooperative efforts recognize that prevention of resource damage is more cost-effective than repair. The building of trust among various groups remains a high priority. Joint projects are designed to demonstrate that mutual benefits can result from cooperation without government interference or additional regulation.

Erosion control work on private lands differs from restoration on park lands. Private lands operate under a system of economy, and management decisions are based on project cost and need. In contrast, park lands are held in public trust and are managed under a different set of principles. Therefore, partnerships and cooperative agreements must respect and help protect each participant's need to manage their lands as necessary to achieve their long-term goals and objectives.

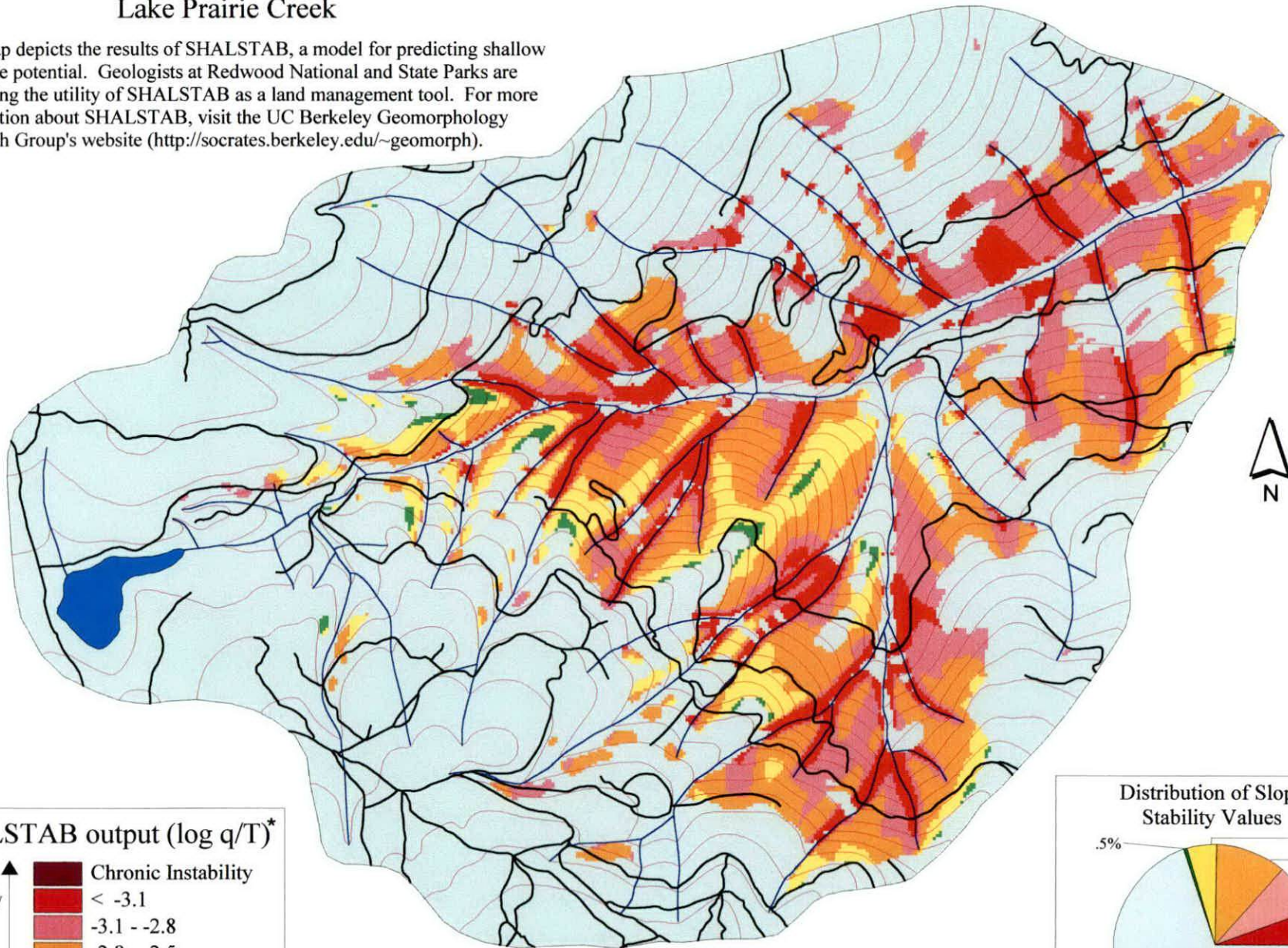
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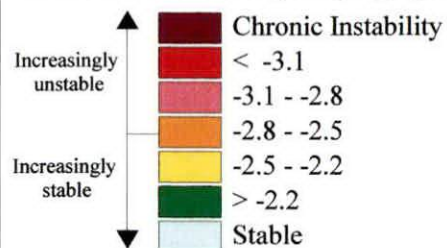
SHALSTAB Derived Slope Stability Index

Lake Prairie Creek

This map depicts the results of SHALSTAB, a model for predicting shallow landslide potential. Geologists at Redwood National and State Parks are evaluating the utility of SHALSTAB as a land management tool. For more information about SHALSTAB, visit the UC Berkeley Geomorphology Research Group's website (<http://socrates.berkeley.edu/~geomorph>).



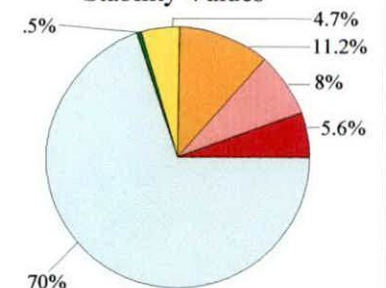
SHALSTAB output ($\log q/T$)^{*}



* SHALSTAB predicted slope stability using regional parameters:
 $\phi = 45$ degrees and soil bulk density = 1700 kg/cubic meter
 Contour interval = 80ft

0.2 0 0.2 0.4 Miles

Distribution of Slope Stability Values



GENERAL GEOLOGY

Lithology and Faults

Redwood Creek Watershed

DESCRIPTION of MAP UNITS

- [Qal] Modern Alluvium
- [Ql] Landslide Deposits
- [Qt] Stream Terrace Deposits
- [Qtc] Coastal Plain Sediments
- [Ti] Tertiary Intrusive Rock
- FRANCISCAN ASSEMBLAGE**
Sandstone & Mudstone
- [KJfl] Coherent Unit of Lacks Creek
- [KJfc] Incoherent Unit of Coyote Creek
- [KJfsc] Sandstone and Melange Unit of Snow Camp
- [KJfg] Metamorphosed Sandstone and Mudstone of the Grogan Fault Zone Schist
- [KJfr] Schist of Redwood Creek
- [KJfs] South Fork Mountain Schist
- [t] Tectonic Blocks
- [Sp] Serpentine
- KLAMATH MOUNTAIN ROCKS**
- [Ju] Serpentinites, Metavolcanics, and Metasedimentary Rocks

EXPLANATION

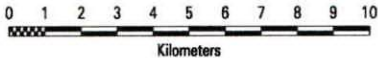
- Thrust Fault
- Approximately Located Fault
- Inferred Fault
- Concealed Fault
- Photo-geological Lineaments
- Approximately Located Contact
- Gradational and/or Sheared Contact
- Concealed Contact
note: Concealed Contact was not mapped in original manuscript
- Drainage Divide
- Area of common greenstone, chert, or sandstone
- Outcrops of metabasalt and metatuff
- Redwood Creek

0 5 10 15 20
Kilometers



SLOPE CLASS MAP

Upper Redwood Creek Watershed

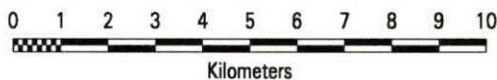


GENERALIZED EROSION PROCESSES BASED UPON SOIL TYPES Lower Redwood Creek Watershed

This map integrates soils mapping within Redwood National Park (in house) with published maps (California Cooperative Soil Survey-Soil Vegetation Survey) in the upper Redwood Creek basin. Soil types were grouped according to dominant geomorphic process, which are displayed here. Soil mapping in the upper basin is older, less detailed and less spatially accurate than that in the lower basin.



-  Existing Landslide
[Soil-Veg: 700S]
-  Susceptible to Fluvial Erosion
[Soil-Veg: 812, 821, 840]
[RNP: 121, 124, 125, 135, 224, 227, 228, 235, 238, 324, 327, 328, 338, 335, 424, 428, 438, 325]
-  Contains Active Earthflows
[Soil-Veg: 752, 823]
[RNP: 122, 123, 133, 323, 423]
-  Susceptible to Slumps and Soil Creep
[Soil-Veg: 839, 855, 91x, 849]
[RNP: 112, 120]
-  Relatively Resistant to Fluvial Erosion and Mass Movement (Older Landforms, Upper Surfaces, More Resistant to Erosion) [Soil-Veg: 813 - 816]
[RNP: 101, 115, 136, 200, 208, 214, 218, 318, 418, 308, 315, 414, 418, 312, 300, 307, 309, 329, 229, 219, 209, 319]
-  Susceptible to Debris Slides
(Course Soils having impaired drainage formed on Schist)
[Soil-Veg: 823m] [RNP: 421, 431]
-  Alluvial Soils
(Susceptible to inundation, deposition and re-working)
[Soil-Veg: 700w, 100 200 200w]
[RNP: 100, 102, 119, 213, 400, 401, 402 999]
-  Other
[Soil-Veg: 835, 834, 847, 7118] [RNP: 302]
-  No Data
-  Watershed Divide
-  Redwood Creek



GENERALIZED EROSION PROCESSES BASED UPON SOIL TYPES Upper Redwood Creek Watershed

-  Existing Landslide [Soil-Veg: 700S]
-  Susceptible to Fluvial Erosion [Soil-Veg: 812, 821, 840] [RNP: 121, 124, 125, 135, 224, 227, 228, 235, 238, 324, 327, 328, 338, 335, 424, 428, 438, 325]
-  Contains Active Earthflows [Soil-Veg: 752, 823] [RNP: 122, 123, 133, 323, 423]
-  Susceptible to Slumps and Soil Creep [Soil-Veg: 839, 855, 91x, 849] [RNP: 112, 120]
-  Relatively Resistant to Fluvial Erosion and Mass Movement (Older Landforms, Upper Surfaces, More Resistant to Erosion) [Soil-Veg: 813 - 816] [RNP: 101, 115, 136, 200, 208, 214, 218, 318, 418, 308, 315, 414, 418, 312, 300, 307, 309, 329, 229, 219, 209, 319]
-  Susceptible to Debris Slides (Course Soils having impaired drainage formed on Schist) [Soil-Veg: 823m] [RNP: 421, 431]
-  Alluvial Soils (Susceptible to inundation, deposition and re-working [Soil-Veg: 700w, 100 200 200w] [RNP: 100, 102, 119, 213, 400, 401, 402 999]
-  Other [Soil-Veg: 835, 834, 847, 7118] [RNP: 302]
-  No Data

 Watershed Divide

 Redwood Creek



This map integrates soils mapping within Redwood National Park (in house) with published maps (California Cooperative Soil Survey-Soil Vegetation Survey) in the upper Redwood Creek basin. Soil types were grouped according to dominant geomorphic process, which are displayed here. Soil mapping in the upper basin is older, less detailed and less spatially accurate than that in the lower basin.

0 1 2 3 4 5 6 7 8 9 10
Kilometers