

TENTH ANNUAL

# REPORT TO CONGRESS

In Compliance with Section 104(a), P.L. 95-250

on the  
STATUS OF IMPLEMENTATION

of the  
**REDWOOD NATIONAL PARK**

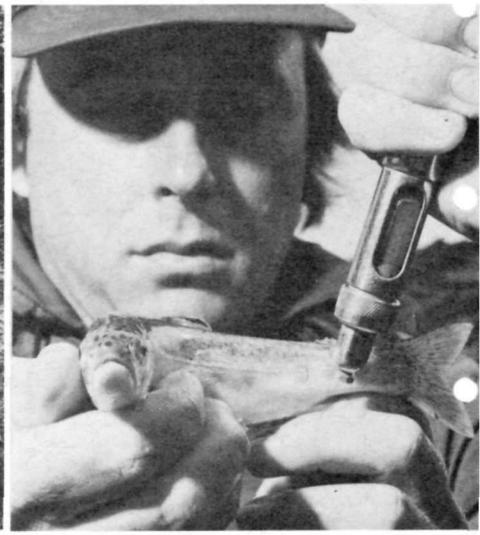
Expansion Act of March 27, 1978

Submitted by the Secretary of the Interior



This is the tenth of eleven annual reports, required by P.L. 95-250, covering Fiscal and Calendar Year 1987. It was prepared by Redwood National Park, 1111 - 2nd Street, Crescent City, CA. (707) 464-6101





TENTH ANNUAL REPORT TO CONGRESS

REDWOOD NATIONAL PARK

CALENDAR AND FISCAL YEAR 1987

This is the tenth of eleven annual reports to the Congress, as required by Section 104(a) of the Redwood National Park Expansion Act (Public Law 95-250) of March 27, 1978:

Section 104(a) The Secretary shall submit an annual written report to Congress on January 1, 1979, and annually thereafter for ten years, reporting on the status of payment by the Secretary for real property acquired pursuant to section 101(a)(4) and section 101(a)(2) of this amendment; the status of the actions taken regarding land management practices and watershed rehabilitation efforts authorized by section 101(a)(6) and section 102(b) of this amendment; the status of the efforts to mitigate adverse economic impacts as directed by the Act; the status of National Park Service employment requirements as authorized by section 103 of this amendment; the status of the new bypass highway and of the agreement for the donation of the State park lands as contemplated by section 101(a)(5) of this amendment; and, the status of the National Park Service general management plan for the park.

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## HIGHLIGHTS OF THE TENTH ANNUAL REPORT

Park programs germane to this report continued to attract increased levels of public recognition throughout Calendar Year 1987. Progress in rehabilitation of logged lands and restoration of aquatic habitats for salmon and steelhead trout are well represented in interpretive programs for park visitors. Resource management and rehabilitation activities were primary aspects of interest during an official visit to the park by Secretary General Olaf Saetersdal from the Norwegian Ministry of Environment during October 1987.

Pending litigation associated with the legislative taking of private lands for park expansion in 1978 made notable progress during the year covered by this report. On January 26, 1987, the Land Valuation Commission appointed by Judge Henderson of the Federal District Court filed its valuation report for financial compensation to the three major landholding corporations associated with the park's 1978 expansion. A formula for calculation of interest rates was also submitted by a three-member commission appointed by the court. Exceptions were filed for both the interest rate report and valuation report. Judge Henderson overruled all exceptions to both reports and entered judgments on August 10 and August 14, 1987.

During 1987, a total of 4,001 acres of watershed received treatment for rehabilitation, including 24.1 miles of logging roads and adjacent slopes. As part of this effort, more than 21,000 trees were planted on 28 acres of recontoured roadbed within four rehabilitation sites. Mapping and prescriptive surveys continued for recontouring and removal of the K & K Road, scheduled to begin in August 1988.

Review of Timber Harvest Plans by park staff for lands upstream of the park within the Redwood Creek watershed continued through 1987. A total of 18 Timber Harvest Plans were submitted for review for lands upstream of the park, of which only three were for lands within the Park Protection Zone. Park technical staff received no notification from the California Department of Forestry for pre-harvest inspection for ten of the 15 plans scheduled for the upper Redwood Creek basin, upstream of the Park Protection Zone.

Construction of the U.S. Highway 101 bypass at Prairie Creek advanced successfully through the fourth year of a six-year project. This alternate route is intended to separate commercial and pass-through traffic from park-related motorists using the scenic two-lane road through old-growth redwood groves. The project is considered to be on schedule in all major aspects.

Construction of the controlled-flow diversion culvert, located near the ocean outlet of Redwood Creek, was completed and ready for operational testing in December of 1987. This project comprises a partial mitigation for impacts to fish habitat associated with construction of a four-lane highway bypass around Prairie Creek Redwoods State Park. The culvert will

serve to restore critical aquatic habitat for anadromous salmon and steelhead trout.

On July 25, 1987, a dedication ceremony marked the formal opening for the Redwood AYH Hostel. This concession operation providing low-cost visitor accommodation is located in a refurbished two-story structure formerly known as the DeMartin House, a pioneer homestead of the Louis P. DeMartin family of Del Norte County, California. This turn-of-the-century structure now provides a 27-bed lodging facility for travelers along U.S. Highway 101.

Redwoods United, Inc., a non-profit organization for developmentally handicapped workers, continues to be utilized by the park as a supplemental work force. Projects accomplished during 1987 include removal of exotic plants, fence construction, mulching, and planting of seedling trees associated with restoration of logged lands within the park. During Fiscal Year 1987, a total of 5,514 worker-hours of labor was provided by Redwoods United, Inc. crews at an average wage rate of \$6.64 per hour.

STATUS REPORT FOR 1987

REDWOOD NATIONAL PARK EXPANSION LITIGATION

Pending litigation involving the Redwood National Park Expansion Act of 1978 (Public Law 95-250) falls into two categories: The 1978 legislative takings and the 1984 Highway 101 Bypass takings.

The 1978 Legislative Takings

The three largest ownerships in the Redwood National Park expansion involve Simpson Timber Company, Arcata National Corporation (Liquidating trustees are now the party), and Louisiana-Pacific Corporation. These former landowners sued the government, in federal court for the Northern District of California, for additional compensation (Civil No. 78-0868 TEH, Civil No. 78-0879-1196 TEH).

The valuation trial began in October 1985. A land valuation commission was appointed by Judge Henderson to try the case and write Findings of Fact. The presentation of evidence was completed on May 20, 1986, after 91 days of testimony from 43 witnesses. The parties subsequently submitted written proposed findings and replies, and, on August 12, 1986, made oral closing arguments.

The appraisal figures at trial, exclusive of any interest for delay in payment, are set forth below:

<u>Company</u>	<u>Company Appraisals</u>	<u>Government Appraisals</u>	<u>Paid to Date</u>
Arcata	\$300,000,000	\$150,000,000	\$109,541,385
Simpson	54,000,000	26,000,000	22,430,776
Louisiana-Pacific	464,000,000 405,600,000	214,000,000	224,932,712

On January 26, 1987, the Commission filed its valuation report in each of the three proceedings. The Commission's conclusions of value, exclusive of interest, were:

Arcata	\$275,731,000
Simpson	\$ 49,846,000
Louisiana-Pacific	\$363,950,050

An agreement on the issue of interest was reached between the Government and Louisiana-Pacific Corporation resulting in Louisiana-Pacific Corporation having an election to choose a measure of interest based either on 91-day Treasury bills, compounded, or on 52-week U.S. Treasury bills.

By order dated June 10, 1986, a three-member commission was appointed to sit as fact finders to determine the interest rate issue in the Arcata and Simpson cases. Trial commenced December 2, 1986 in San Francisco and concluded December 4, 1986. The government contended for 91-day Treasury bill rates or, in the alternative, the interest rate being paid on the date of taking, March 27, 1978, on United States Treasury bonds having a duration approximating the period during which any deficiency was unpaid. Arcata and Simpson contended for a rate based on a diversity of investments, including both debt and equity securities available in the marketplace. The court issued an instruction permitting the Commission to consider broadly based investments in debt and equity securities.

The interest rate commission entered an award on January 26, 1987 which permits interest to be calculated on the basis of the following array of investments:

Common stocks	42 percent
Long-term corporate bonds and government bonds	38 percent
Treasury (six-month) bills	20 percent

All of the parties filed exceptions to the Commission's valuation report. Only the government filed exceptions to the Commission's interest rate report. Judge Henderson overruled all exceptions to both reports and entered judgments dated August 10, 1987 and August 14, 1987. The government filed an appeal in each case on October 5, 1987. Each landowner subsequently also filed a notice of appeal. While Arcata and Simpson are opposing the government's objections on the interest issue, their appeals concern only the valuation aspect of these cases and do not address the issue of interest.

The government's appeal brief is due January 15, 1988. The landowner's briefs, which will include answering the government's appeal brief, are due March 4, 1988. The government's reply briefs are due May 9, 1988. A date for oral argument will then be set by the court.

#### The 1984 Highway 101 Bypass Takings

The Arcata Leasing Corporation case was settled for \$26,500, the amount of deposit. Judge Henderson sent Simpson Timber Company to State Court to prove title to approximately five acres of land in the right-of-way claimed by the State to be within Prairie Creek Redwoods State Park. Outcome of the pending State Court case will affect settlement negotiations in the Federal Court case. The Kahn case was settled for \$231,000, which is \$15,500 more than the amount of deposit.

Distribution of Appropriations as of 12/31/87:

	<u>Original</u>	<u>Additional</u>	<u>Additional</u>	<u>Additional</u>	<u>Total To Date</u>	<u>Final Settlement</u>
Louisiana-Pacific	\$128,561,032.	\$64,830,440.	\$12,966,088.	\$18,575,152.	\$224,932,712.	No
Arcata	60,347,443.	30,431,860.	6,086,372.	12,675,710.	109,541,385.	No
Simpson	9,395,025.	4,737,700.	947,540.	7,350,511.	* 22,430,776.	No
Save-The-Redwoods	400,000.		70,500.		470,500.	Yes
McNamara	2,500.		5,000.		7,500.	Yes
Van Voorhis	22,000.		109,850.		131,850.	Yes
Comstock	83,000.		252,000.		335,000.	Yes
Romanini	76,000.		434,150.		510,150.	Yes
Barger-Crum (Burl Brothers)	340,000.	570,000.	1,147,500.		2,057,500.	Yes
Hilton	16,000.		42,876.		58,876.	Yes
Kennedy	10,000.		46,000.		56,000.	Yes
Antonioli	300,000.		578,390.		878,390.	Yes
Bunfill	11,000.		35,500.		46,500.	Yes
Winn	62,000.		288,500.		350,500.	Yes
Harding	100,000.		45,583.		145,583.	Yes
McWilliams/Graves	20,000.		21,500.		41,500.	Yes
Grotzman	24,000.		26,000.		50,000.	Yes
Bank of America Trust (Lyons)	230,000.		383,140.		613,140.	Yes
Barlow			66,500.		66,500.	Yes
Francis	48,875.				48,875.	Yes
Plog	196,000.				196,000.	Yes
Merryman	33,000.				33,000.	Yes
TOTAL					363,002,237.	

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STATUS OF PAYMENT BY THE SECRETARY FOR REAL PROPERTY ACQUIRED PURSUANT TO SECTION 101 (a) OF THIS AMENDMENT

Distribution of Appropriations as of 12/31/87 (Continued):

	<u>Original</u>	<u>Additional</u>	<u>Additional</u>	<u>Additional</u>	<u>Total To Date</u>	<u>Final Settlement</u>
101 BYPASS PROJECT:						
<u>Arcata Leasing Corp.</u>	26,500.				26,500.	Yes
<u>Simpson</u>	1,057,000.				1,057,000.	No
<u>Kahn</u>	215,500.			15,000	231,000.	Yes
<u>GRAND TOTALS</u>	<u>\$201,576,875.</u>	<u>\$100,570,000.</u>	<u>\$23,552,989.</u>	<u>\$38,616,873.</u>	<u>\$364,316,737.</u>	

\*Includes K & K Road: \$2,011,959.

STATUS OF PAYMENT BY THE SECRETARY FOR REAL PROPERTY ACQUIRED PURSUANT TO SECTION 101 (a) OF THIS AMENDMENT

STATUS OF ACTIONS TAKEN REGARDING LAND MANAGEMENT PRACTICES AND WATERSHED REHABILITATION EFFORTS AUTHORIZED BY SECTION 101(a)(6) AND SECTION 102(b) OF THIS AMENDMENT

Down Tree Personal Property

The 1978 Redwood National Park Expansion Act provided for the orderly removal of down tree personal property.

During the years immediately following park expansion, approximately 7,330 MBF (thousand board feet) of down timber were removed from park lands by major corporate landholders. Louisiana-Pacific removed the majority, about 7,030 MBF. Simpson Timber removed 300 MBF. The Arcata Redwood Company removed no timber as part of the legislative provision for down tree personal property. Two private landowners, William Antonioli and Henry H. Harding (both of Orick, California), also removed small amounts of down tree property from formerly owned acreages within the park.

Where practical, down tree material has been salvaged from watershed rehabilitation sites and right-of-way lands acquired in association with the Highway 101 Bypass construction project and utilized either for park purposes or transferred to Redwoods United, Inc., a non-profit organization for handicapped workers, for purposes of manufacture and sale of handcrafted wood products.

No down tree personal property was revested to any affected woods employer (former mill or landowner) during 1987.

Timber Company Haul Road Access

Continued access to and use of the K & K Road by the Simpson Timber Company was provided by Section 101(a)(4) of the 1978 park expansion act. Subsequent negotiations between the National Park Service and Simpson Timber Company resulted in a monetary settlement on October 15, 1982 by which the company would retain rights for use and access for the K & K Road for a period not to exceed five years. Pursuant to this agreement, all such rights were extinguished on October 15, 1987.

Steep and unstable terrain traversed by the 9.7 miles of K & K Road comprises one of the park's most important sectors for erosion control and rehabilitation. Geological mapping and prescriptive treatment plans for major landslide zones along the road were undertaken by park technical staff during 1987. Rehabilitation crews are scheduled to begin road removal and slope stabilization in August 1988. Given present levels of funding, it is anticipated that rehabilitation of 3.2 miles along the road's most erosion-prone sector will comprise a project of three years' duration.

## Land Management Practices

Severe erosional problems occurring in the Redwood Creek basin are due to intensive land use, erosion-prone soils, and repeating cycles of intense winter storms. As a result, large quantities of sediment have been deposited in Redwood Creek, threatening riparian and aquatic resources. A team of technical experts (Geomorphology Branch) was formed in 1979 to undertake basin-wide studies to scientifically identify, quantify, and characterize erosion sources in the Redwood Creek watershed, both upstream of the park as well as within park boundaries. An inventory of erosional problems in the watershed is needed to assist the rehabilitation efforts and to assess potential future impacts to park resources from natural and man-induced erosion sources upstream. An inventory in the form of a "sediment budget" will quantify sediment sources in the basin, and measure changes in sediment storage in stream channels and sediment transport in the main stem and tributaries. A sediment transport model is being developed for the entire Redwood Creek basin that will provide the probability and magnitude of future sediment movement. The model will be based upon field data collected in the basin since 1972.

The major aspects and accomplishments of the Geomorphology Program are as follows:

1. Precipitation data is collected and recorded for determining rainfall distribution within the basin during storms and for documenting rainfall amount and intensity. These records are particularly valuable in evaluating large geomorphic changes (i.e., landslides) which occur during storms. In 1973, the U.S. Geological Survey (USGS) established a rain gaging network in the park. Redwood National Park expanded and updated that network to cover the entire watershed. Precipitation data is collected either continuously, daily or monthly, depending upon the site. In addition, interagency cooperation provides regional data to supplement the park data base.
2. Landslides and gullies are major sources of sediment entering Redwood Creek. Field surveys and aerial photographic studies are used to calculate volumes, dates of occurrence and causes of streamside landsliding throughout the Redwood Creek basin. At the same time an erosion study documents the timing, development and causes of gullies on grasslands and on forested and logged lands. The highest volume of sediment from landslides and gullies is derived from road networks associated with timber harvest areas. Landslides, gullies and road distribution have been mapped for the entire watershed. Also, a map of historical land use patterns within the Redwood Creek watershed has been completed. These maps are updated as new slides or gullies occur and as new roads are constructed upstream of the park.
3. When large volumes of sediment enter a stream channel, the stream bed undergoes elevation, or aggradation. This results in accelerated bank erosion, destruction of fish habitat and the burial or toppling of streamside trees. Channel cross-section surveys and longitudinal profiles along the channel bed document channel changes through time. The USGS initially established a cross section network in 1973. Redwood National

Park assumed responsibility for cross-section surveys in 1980. The park expanded this network and resurveys cross-sections after each major storm season. In addition, over 25 cross-sections are monitored on tributary streams. The "thalweg" (the lowest point in stream bed profile) in lower Redwood Creek rose 0.75 m (2.5 ft.) in 11 years. Bankside vegetation, originally above the high water mark, was flooded and eroded due to higher streambed elevations. Cross-section surveys show stream channel recovery as the creek flushes sediment to the ocean. Cross-sections will be monitored in future years to document both channel aggradation and stream channel recovery.

4. Sediment in Redwood Creek was mapped and categorized according to its potential mobility. Sediment residence times for different stream reaches were calculated. Calculated sediment residence times range from decades to millennia, depending upon the location and character of deposited sediment. A model for sediment movement was developed and tested. Future work will focus on an update of the sediment storage map and refinements to the model based on recent data.

5. A study of floodplain sediments was initiated to map sediment distribution, collect samples and analyze sediment deposits on alluvial terraces. The project will provide a record of prehistoric floods, the magnitude and frequency of flood recurrence over terraces and an evaluation of recent flood deposit quality. This project will provide insights for managing and preserving superlative redwood groves based upon an understanding of their relation to dynamic processes of flooding and sediment deposition.

Detailed stratigraphic mapping of the Tall Trees Grove was initiated in 1986; 20 additional cores were collected for analysis in 1987. Significant stratigraphic layers are being dated by Carbon-14 analysis. In the future, additional terraces will be studied and seismic profiles will be used to define the depth and extent of terrace deposits.

6. Large quantities of clean sand and gravel are required for a major highway being constructed adjacent to Redwood National Park. To meet these demands, the California Department of Transportation's highway construction contractor will excavate gravel bars from the lower 3.4 miles of Redwood Creek at Orick, California. This reach of stream is bounded by man-made flood control levees and is also bounded both upstream and downstream by Redwood National Park lands.

About 110,000 cubic yards of gravel were excavated in 1987 and a similar amount is expected to be extracted during each of the following three years. Each annual volume extracted is roughly equivalent to the annual quantity of sediment bedload flushed seaward through the mouth of Redwood Creek. Park geologists are documenting changes resulting from downstream gravel extraction. Cross-sections were established and detailed mapping of the reach was completed. Stream channel monitoring will continue until gravel extraction and stream recovery have occurred.

Study results were published in various technical reports, professional journal articles and presentations given at various scientific conferences. Papers dealt with the role of sediment storage in watersheds, the development and importance of cold pools to fisheries, the timing and causes of gully erosion and a summary of channel changes based on cross section surveys. (Plates 1 to 5)

Finally, data are currently being assimilated for development of a predictive model on erosion and sedimentation in the Redwood Creek watershed. Various studies undertaken by the Geomorphology Branch will culminate within several years in a thorough analysis of the causes, mechanisms and rates of erosion which occurred and could be expected to occur within the watershed. Such information will be invaluable for restoring damaged park resources and decreasing the risk of future degradation resulting from human and natural impacts in Redwood Creek basin.

#### United States Geological Survey Cooperative Studies

In February, 1973, the National Park Service and the U.S. Geological Survey (USGS) formed an interagency-interdisciplinary team. The objective was to delineate and describe particular parts of the terrestrial and aquatic ecosystems in the park, describe recent changes in the intensity of erosion and sedimentation, define processes which alter natural ecosystems and assess the impact of recent road construction and timber harvest. The study began in September, 1973. The USGS measured water and sediment discharge on 20 tributaries and at six stations on Redwood Creek. Technical personnel established a rain gage network, began monitoring earthflow movement, prepared strip maps of channel features, installed piezometers on floodplains and installed hillslope and streambank erosion pins. Other physical, chemical and biological measurements were taken in Redwood Creek, selected tributary streams, and Mill Creek near Crescent City. Some data were collected simultaneously at several sites during selected winter storms; other data were collected year-round. This study clearly documented increased sediment yields in Redwood Creek due to timber harvest upstream and upslope of park boundaries.

When Redwood National Park was expanded in 1978, the National Park Service assumed some monitoring tasks previously conducted by the USGS, but retained a cooperative agreement with the USGS to continue collecting water and sediment discharge data from the streams. (Map page 15) The USGS data collection program is vital to park resource management needs because: 1) it assists in the Timber Harvest Plan review process within the Park Protection Zone; 2) it assists in evaluating effects of any large-scale man-made activity in upper reaches of Redwood Creek; and, 3) it provides base-line information used in the other stream studies. This data collection effort provides delineation of areas which are prone to major erosional problems, and which are potentially major sediment sources.

Specific accomplishments for 1987 include:

- 1) Water and sediment discharge measurements at three stations along Redwood Creek, defining sediment coming from the upper reach, entering the park and leaving the park, respectively.
- 2) Water and sediment discharge measurements on the three major Redwood Creek tributaries located within the Park Protection Zone, (Panther, Lacks and Coyote Creeks), in order to monitor sediment production from timber harvest areas upstream of the park.
- 3) Water and sediment discharge measurements on Little Lost Man Creek, which drains a pristine redwood watershed. This station is used as a control against which the other sediment yield data are compared.
- 4) Storm sampling at all gaging stations to measure sediment yield and sediment movement during storms. Because most sediment transport occurs during floods, sampling at high flows is essential in defining total sediment output from Redwood Creek.

#### Watershed Restoration and Erosion Control

The watershed rehabilitation program authorized by Public Law 95-250 has the primary goals of minimizing man-induced erosion and restoring the Redwood Creek ecosystem to predisturbance conditions. Important objectives of the overall effort include: erosion control, stream channel restoration, road removal and reestablishment of native vegetation on cutover lands and former logging roads. Experimental watershed rehabilitation work was conducted during FY 1977, FY 1978 and FY 1979. This work led to development of the operational watershed rehabilitation program now under way.

A Watershed Rehabilitation Plan was completed in April 1981. The plan describes the approach to planning and implementing rehabilitation work, delineates critical areas, and prioritizes other areas needing rehabilitation work. Present planning and implementation is similar to that described in the 1981 plan, but is continually refined as more cost-effective methods are developed. Since the program's inception, the cost of implementing rehabilitation (per mile and per cubic yard of sediment) decreased significantly, and the annual amount of material excavated and area treated has increased.

Since 1978, 147 miles of major or secondary haul roads have undergone rehabilitation. With exception of the K & K Road, the east side of Redwood Creek is nearly complete. Most of the grassland prairie road scars have been obliterated. Devil's Creek and Bridge Creek tributaries along the west side of the basin are nearing completion of rehabilitation. Investigations are now underway to evaluate the stability, future access and rehabilitation needs for roads which were considered for removal late in the program. Research by Technical Services Division personnel and observations by the rehabilitation staff indicate that some logging roads which were assumed stable in 1981 (e.g., M-Line, C-Line) will need rehabilitation as they have

high potential for producing large volumes of sediment. Failure of these mid-slope roads could have serious impacts on rehabilitated areas downslope, as well as to Redwood Creek.

All work is documented in annual cost analysis reports. Many work sites are photographed before and after (Plates 12 to 15) to document overall changes in landscape. Selected sites are filmed using time-lapse movies or video. A report on updated techniques of rehabilitation developed at Redwood National Park is planned.

### 1987 Projects

#### Unit 87-1, 101 Bypass Roads and Slopes (306 acres)

This area is located in the headwater regions of three watersheds: Boyes Creek, May Creek, and Larry Dam Creek. These streams are major tributaries of Prairie Creek, one of the prime undisturbed anadromous fish habitat areas on the North Coast. The site contains 2.7 miles of haul roads which were rehabilitated. A total of 14,396 cubic yards of material were excavated from potentially unstable areas, including eleven haul road stream crossings, three skid trail crossings, and one landing. Access to this general area will be blocked with the completion of the U.S. Highway 101 Bypass alternate route around Prairie Creek State Park. Redwood National Park resources management staff will continue restoration of selected logged lands affected by the 101 Bypass project.

#### Unit 87-2, South G-6 Road (160 acres)

The rehabilitation of this unit involved removing, draining, and recontouring 1.2 miles of surfaced haul road lying within old-growth redwoods of lower Tom McDonald Creek. Three medium-to-large stream crossings and 5 small stream crossings were excavated, along with 31 crossroad drains, totalling 15,535 cubic yards of material. Due to a lack of stable storage sites along the roads, approximately two-thirds of this material was removed and trucked to a stable location near the junction of the M-Line and G-6 roads. The instability of a portion of the road bench and its impending failure would risk damage to old-growth forest and sediment flows to Tom McDonald Creek. Rehabilitation of these roads begins the return of this old-growth corridor on lower Tom McDonald Creek to its predisturbance setting and prepares the area for reestablishment of native redwood forest vegetation.

#### Unit 87-3, M-6 Roads (240 acres)

This 200 acre unit contained 2.3 miles of logging haul roads which crossed several tributaries to Bridge Creek, the most productive salmon and steelhead trout habitat in the Redwood Creek basin. Rehabilitation treatments focused on the removal of fill from six landings, five road benches and 13 stream crossings. A total of 43,000 cubic yards of fill material were excavated.

Unit 87-4, M-6 Slope work (35 acres)

The tributary streams to Bridge Creek on this 35-acre unit had been severely disturbed by tractor activity during timber harvest. Rehabilitation treatments removed 4,550 cubic yards of fill from 11 stream crossings to reduce sediment sources and prevent stream diversions. Units 87-3 and 87-4 complete all rehabilitation work on the M-6 Road system.

Unit 87-5, M-3 and M-4-1 Roads and Slopes (960 acres)

The site comprises 3.7 miles of unsurfaced main haul road in the upper Bridge Creek Watershed. Eighteen haul road and 27 skid trail stream crossings required excavation, totaling 38,817 cubic yards of material. All streams were excavated down to the original channel beds, with fill material being placed on nearby stable areas and shaped to match the surrounding hillslope topography. All unstable road sections were outsloped, totaling 26,295 cubic yards of material. Several of these outsloped areas showed debris torrent potential and thus required extensive treatment for stabilization. This work completes the entire M-3 Road system. The two remaining miles of the M-4 Road system (scheduled in FY 88) will complete rehabilitation for the entire headwaters of the Bridge Creek drainage.

Unit 87-6, North G-6 and C-9 Roads (368 acres)

These roads comprised lumber company access to the remaining old growth forests in the Tom McDonald Creek basin, adjacent to the Tall Trees Grove. Geotechnical work in the project area focused on mitigation of erosional problems associated with 2.9 miles of major logging haul road. It included excavation of 5,366 cubic yards of fill from seven major haul road stream crossings, 11,465 cubic yards of unstable road prism material for installation of 51 crossroad drains, disaggregation of compacted road surfaces and log deck areas, and removal of a log bridge and associated 3,000 cubic yards of approach ramps on the main stem of Tom McDonald Creek. Unit costs were improved over those experienced in similar heavy equipment projects through use of a large hydraulic excavator with 2.25 cubic yard bucket and blade-endhauling using D-8 bulldozers equipped with U-blades.

Unit 87-7, Little Bald Hills Trail Reconstruction Project (1,500 acres)

This site is comprised of 7.6 miles of road along ridge top grasslands and surrounding forest land which were recontoured by outsloping and subsequent trail tread construction. Sensitive soils, providing little enhancement of revegetation, and visual prominence of these roads, required additional rehabilitative efforts. This area will become part of Redwood National Park's backcountry trail system.

Unit 87-8, A-9-7 Roads and Slopes (432 acres)

This unit comprised 3.6 miles of major logging haul roads, where views of the mouth of Redwood Creek and the Pacific Ocean filter through the old-growth forest. Excavation of 25 unstable road prism stream crossings and 10 major landings was accomplished during the project, totalling approximately 35,000 cubic yards. Over 1.75 miles of the park's equestrian trail system follows this road alignment, and the route was completely reshaped to blend into the natural landscape. (Plate 16)

Unit 87-9, Fortyfour Creek (1/10th-mile stream crossing, 2 acres)

This unit comprises an extensive and unstable stream crossing in the Fortyfour Creek basin. Massive slope failure at this site was precluded through rehabilitation treatment that combined the excavation of 9,000 cubic yards of fill material with reshaping of local topography and streamside slopes to preroad conditions. This site lies adjacent to the park's equestrian trail and thereby offers visitors a meaningful example of stream and road rehabilitation. The Fortyfour Creek site was originally treated and documented during 1984. However, due to site instability and continued risk of erosion to the adjacent watershed, the area was reexcavated and recontoured during 1987.

Total Rehabilitation for 1987

The park's rehabilitation program successfully treated 24.1 miles of logging roads within the Redwood Creek watershed during 1987. These sites comprise 4,001 acres, with over 170,000 cubic yards of material relocated to stable sites within the park.

#### Vegetation Management

As part of the watershed rehabilitation program, revegetation treatments were implemented to accelerate the restoration of redwood forests and associated vegetation systems, to aid in the reduction of surface erosion and to enhance long-term slope stability. Highest priority for treatments was given to rehabilitated road surfaces with low potential for natural vegetation reestablishment.

Revegetation treatments have evolved from use of grass seeding, wattles, rooted and unrooted stem cuttings and field transplants to the almost exclusive use of nursery grown seedlings. Where a wide variety of native species were once planted, current methodology utilizes native tree seedlings, such as redwood, Douglas-fir and red alder. Use of compost and slow release fertilizer results in a significant increase of growth and vigor. Physical restoration treatments, such as decompacting road surfaces and salvaging side-cast topsoil also encourage natural revegetation. Straw mulch helps control surface erosion (Plate 19), and favors natural revegetation by protecting the seed bed. Since 1978, over 630,000 tree and shrub seedlings have been planted on more than 485 acres of former road beds as a part of the park's watershed rehabilitation program.

Other vegetation management activities conducted parkwide include identification and protection of threatened and endangered plants, exotic plant control, soils description and mapping, baseline vegetation studies, development and implementation of vegetation management plans, prescribed burning and technical assistance in the landscaping of park development sites with native species.

### 1987 Projects

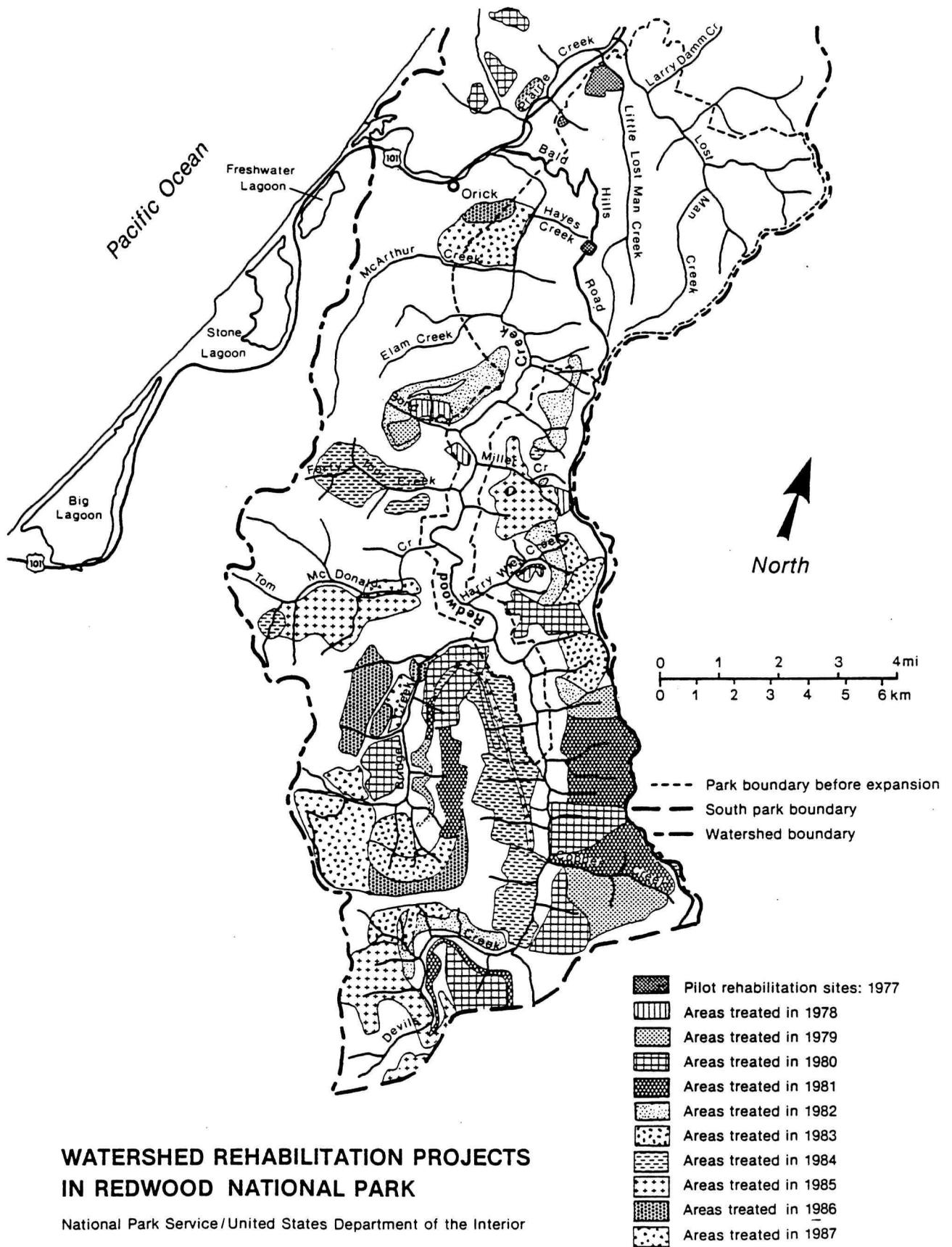
In 1987, approximately 21,000 trees were planted on over 28 acres of recontoured roadbed within four rehabilitation sites. Continued monitoring of these and previous sites shows a dense cover of native vegetation developing. Natural colonization of the disturbed areas minimizes the area to be planted with tree seedlings. Vegetation summary reports were prepared for the four rehabilitation sites planted in 1987. Redwood National Park Technical Report # 19, "An Evaluation of Experimental Rehabilitation Work," was prepared to document early erosion control and revegetation methodology.

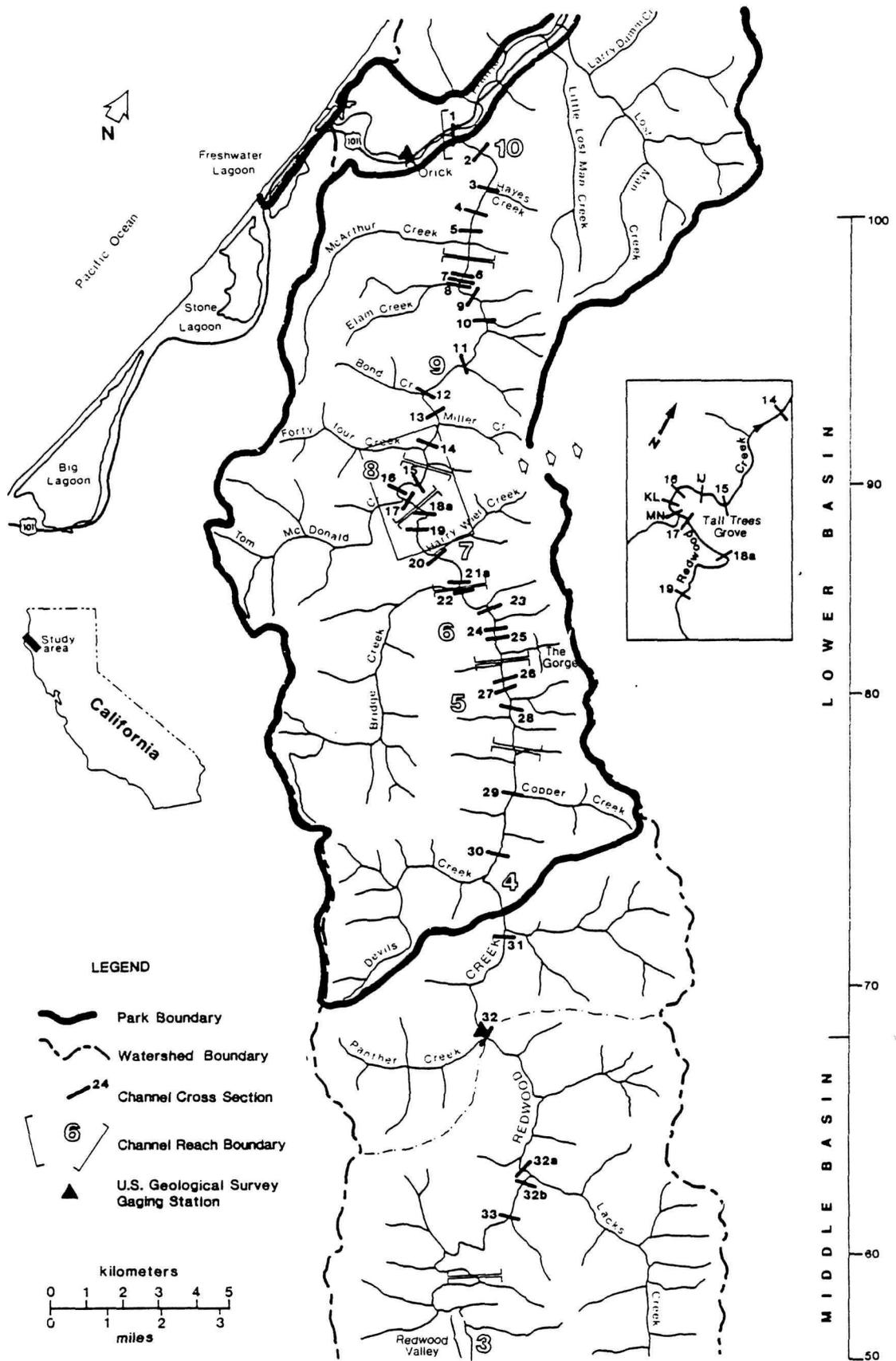
Soils of the rehabilitation sites within the Redwood Creek basin were mapped and reports prepared to facilitate the restoration and revegetation process. Eighty-five percent of the Redwood Creek watershed within the park has been mapped. Soil series and map units have been described for all of the forest soils. The work continues to be reviewed by the Soil Conservation Service in accordance with an agency-wide Memorandum of Understanding. Technical Report # 20, "Soils Series Descriptions and Laboratory Data From Redwood National Park," documents soils classifications accomplished to date.

Vegetation management studies continue in the park's prairies, oak woodlands, second-growth redwood forest, coastal scrub and spruce stands. Technical Report # 21, "Vegetation Ecology of the Bald Hills Oak Woodlands of Redwood National Park," was prepared to document the results of a field study of the park's oak woodlands. Portions of the results were also published in Madrono, the journal of the California Botanical Society. Vegetation Management staff presented two papers on oak woodland management at the conference entitled "Multiple-Use Management of California's Hardwood Resources" held in San Luis Obispo, California.

Three prescribed burns totalling nine acres were conducted in a coastal prairie, a Bald Hills prairie and an oak woodland to document the effects of fire on species composition and refine prescriptions and techniques for use of fire in vegetation management.

Tansy ragwort, a toxic plant which six years ago was a pervasive and serious problem, has been significantly reduced through use of biological control insects. The control program continues in a maintenance phase to prevent new invasions. Control programs for non-native Scotch broom, Monterey pine and pampas grass continued throughout 1987.





Stream Gaging Stations



Plate 1: Geologists drill at base of landslide for sampling of substrate.



Plate 2: Inspecting logging road failure and erosional outflow into Redwood Creek watershed.



Plate 3: Park Superintendent (left) and staff biologist inspect sediment impacts along Bridge Creek attributed to upstream logging prior to park establishment.

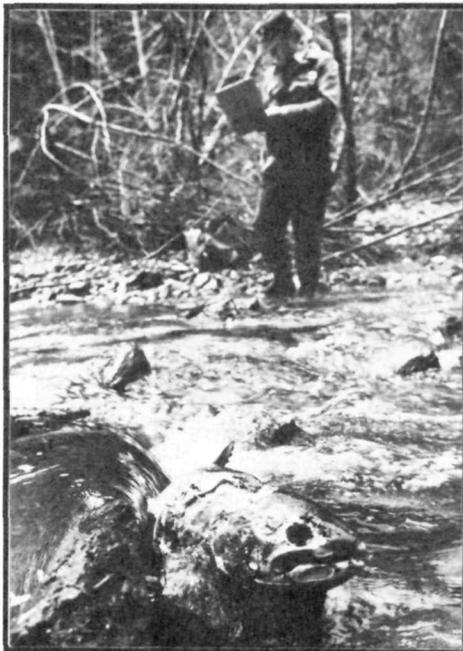


Plate 4: Park fishery biologist surveys salmon mortality related to spawning in Redwood Creek watershed.



Plate 5: Transport of stream sediment is monitored during peak flow conditions along the main channel of Redwood Creek.



Plate 6: Technical staff conducts a field survey of a major logjam across Bridge Creek, the park's most important tributary stream for fish production in the Redwood Creek watershed. Studies determined the logjam to be a barrier to steelhead trout and salmon on upstream migration to spawning habitats.



Plates 7 & 8: Fishery biologists trap salmon and steelhead trout in the Redwood Creek estuary for population estimates and growth rate data.



Plates 9 & 10: Park staff and members of the California Conservation Corps (CCC) dismantle portions of the Bridge Creek logjam. This project advances in measured annual increments to avoid uncontrolled outflow of gravel and sediment reservoir trapped upstream of the jam.



Plate 11: Biologists measure an adult steelhead trout returning to spawn in the Redwood Creek watershed.



Plate 12: Park geologists begin evaluation and prescription for rehabilitation of the M-3 logging road during 1987. The raised road prism, or "Humboldt crossing," was constructed in 1957 and crosses a headwater tributary of the Bridge Creek watershed.



Plate 13: Park Superintendent Douglas Warnock (left) and staff geologist Louise Johnson inspect progress in removal of the M-3 site's Humboldt crossing and recontouring of the stream's original topography.



Plate 14: Operation of track-mounted backhoes comprise an efficient means of recontouring hillslopes where old logging roads were constructed across streams.



Plate 15: Geologist Louise Johnson inspects completed recontouring and rehabilitation of the M-3 site. This tributary stream of the Bridge Creek watershed flows unimpeded for the first time since construction of the road's Humboldt crossing for logging purposes in 1957. Recontoured slopes and streambanks will be mulched with straw and planted with root stock of redwood and Douglas fir.



Plate 16: Earth-moving machinery, under supervision of park geologists, recontours a portion of the A-9-7 logging road into an equestrian trail.



Plate 17: Congressman Douglas H. Bosco (left) receives a progress report from Superintendent Douglas Warnock during a field inspection of the park's rehabilitation program.

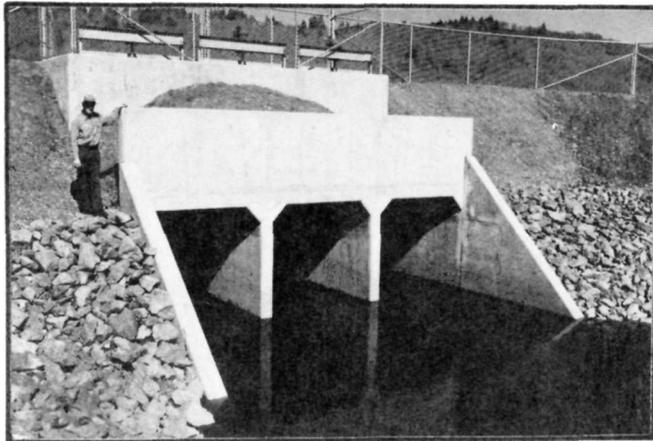


Plate 18: Construction of a controlled-flow diversion culvert on the south levee of the Redwood Creek estuary was completed in 1987.

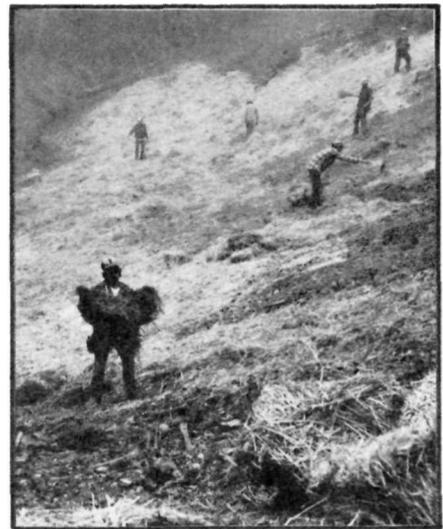


Plate 19: Redwoods United, Inc. work crews spread straw mulch on recontoured hillslope.



Plate 20: A controlled-flow diversion culvert (arrow) will provide downstream flow to the South Slough, formerly the main channel of the Redwood Creek estuary, for the first time since construction of the flood control levee in 1965. Renewed waterflow will revitalize aquatic habitats in the South Slough and thus aid in restoration of the watershed's population of anadromous salmon and steelhead trout.



Plate 21: The pioneer homestead of the Louis P. DeMartin family has been refurbished and opened to the public as the Redwood AYW Hostel in June 1987.



Plate 23: Congressman Douglas H. Bosco (right) inspects the park's new Visitor Information Center near Orick with Superintendent Douglas Warnock.

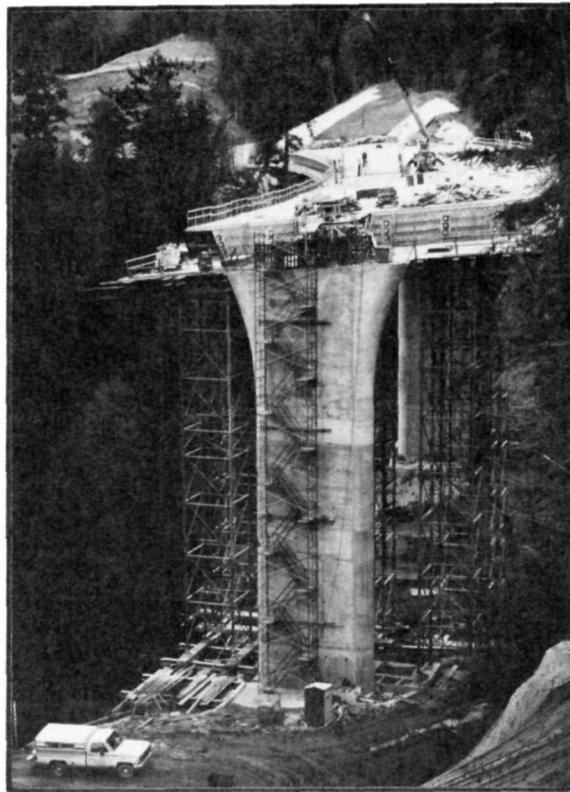


Plate 22: Boyes Creek Bridge, along the Highway 101 Bypass, spans 1,269 feet and rises at a seven percent grade.



Plate 24: Secretary General Olaf Saetersdal, from the Norwegian government's Ministry of Environment, inspects rehabilitation sites along Redwood Creek with wife, Dr. Barbro Saetersdal, of the Norwegian Institute of Education.



Plate 25: Professor Yang Hanxi (right) and assistant, Dr. Wu Yegang, both of the National Institute of Science in Beijing, China, inspect rehabilitation sites and the Tall Trees Grove.

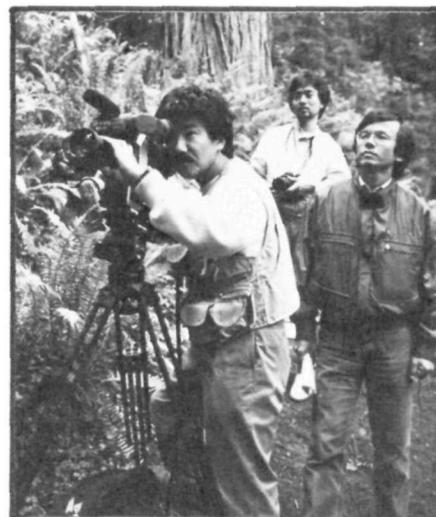


Plate 26: Film crew from the Japan Broadcasting Corporation shoot scenes amid park redwood groves for documentary film "The Miracle Planet."

### Benefits to Redwoods United, Inc.

Since 1980, Redwood National Park has enjoyed an effective and beneficial working arrangement with Redwoods United, Inc. (RUI), a nonprofit organization for the developmentally disabled. Public Law 95-250 authorizes the park to make available to RUI surplus wood material for purposes of maintaining employment and training opportunities for eligible workers. This arrangement has been guided by provisions of a Memorandum of Understanding relating to receipt and utilization of raw wood material, and a Cooperative Agreement for training and employment within the park, both of which were developed and approved in 1981.

During the past seven years RUI has received over 8,870,000 board feet of redwood, fir, and hardwoods for utilization by workshop personnel in the production and sale of clocks, tables, planter boxes, and other handcrafted items. Through 1985, the donated raw material was recovered from various rehabilitation sites and consisted largely of salvaged downed logs and nonmerchantable wood segments from prior logging operations. The wood provided during subsequent years derived from clearing and preparatory work associated with construction of 12 miles of four-lane roadway for the Highway 101 Bypass project adjacent to Prairie Creek State Park.

During 1987, the park conveyed to RUI 519,840 board feet of raw wood from along the highway project's right-of-way. The park also utilizes RUI work crews in rehabilitation and maintenance projects, thereby providing supervised on-the-job training as well as gainful employment. From the inception of this cooperative effort, it is estimated that RUI crews have planted 220,000 seedling trees and shrubs, spread straw mulch on 60 miles of rehabilitated logging roads, rock-lined several miles of stream channels to protect against erosion, removed thousands of exotic plants and constructed 15 miles of cattle fence for protection of recovering rehabilitation sites and fragile prairie plant communities. (Plate 19)

Crew members are paid salaries commensurate with individual abilities and performance. During Fiscal Year 1987, a total of \$5,514 worker-hours of labor was provided by RUI members at an average wage rate of \$6.64 per hour. In addition, RUI officials have cited the considerable therapeutic benefits of the hard but meaningful work in an outdoor setting as valuable beyond monetary compensation. Over 100 RUI clients have worked on park projects since 1980, and many have ventured to utilize their acquired skills and self-reliance outside the RUI organization.

### Interagency Agreement for Lacks Creek Watershed

The 1978 legislation expanding Redwood National Park established a 33,000-acre Park Protection Zone (PPZ), located upstream from park lands within the Redwood Creek Basin. The Act authorized the Secretary of the Interior to acquire lands and interests in lands within the PPZ, as may become necessary for protection of downstream park resources. The park expansion act also directed erosion and sedimentation studies to be implemented throughout the watershed and authorized rehabilitation of areas upstream from the park contributing significant sedimentation to the watershed.

Several years following park expansion, the Bureau of Land Management (BLM) prepared plans to consolidate scattered parcels into blocks of public land in order to achieve more cost effective management. One area chosen for parcel consolidation was the Lacks Creek drainage, a major tributary to Redwood Creek located within the PPZ.

In 1984, the BLM's Ukiah District Office and Redwood National Park entered into an agreement which called for interagency cooperation in achieving mutually beneficial resource planning and management objectives. Park technical personnel were to conduct erosion and sedimentation studies, evaluate and map erosion hazards, prescribe erosion control treatments, conduct archeological surveys, help fulfill environmental compliance requirements and assist with land use planning. The BLM, in turn, agreed to expedite public land consolidation in Lacks Creek, manage Lacks Creek lands to provide protection of downstream park resources, conduct rehabilitation of logged lands and cooperate with the park in allocation of funds to implement planning, land restoration and resource management programs of common benefit.

This local agreement between the BLM's Ukiah District Office and Redwood National Park was further reinforced by an interagency agreement between the Bureau of Land Management and National Park Service, signed into effect during 1987. Since inception of the local agreement, however, none of its provisions have been implemented.

#### PROPOSED LAND USE GUIDELINES FOR TIMBERLANDS IN THE PARK PROTECTION ZONE

Legislative history of the Redwood National Park Expansion Act of 1978 directs the Secretary of the Interior to develop land use guidelines to minimize downstream impacts of timber harvesting and other activities conducted on lands within the congressionally established 33,000-acre Park Protection Zone (PPZ). The proposed guidelines were intended to supplement existing regulations of the California Board of Forestry and rules of the California Department of Forestry. The overall objective was to provide a necessary measure of increased protection for the resources of Redwood National Park from the cumulative impacts of recurring timber harvest activities in upstream areas.

Future land management activities conducted on private lands within the PPZ were to be undertaken in full cognizance of the recommended erosion prevention measures and operating procedures outlined in the land use guidelines, as directed by congressional proceedings (Senate Report 95-528; October 21, 1977). These draft land use guidelines for timberland practices in the Redwood Creek watershed upstream from Redwood National Park were submitted in 1985 with the Seventh Annual Report to Congress for Departmental and Congressional review. There has been no assessment of the proposed guidelines forwarded to the park for implementation during 1987.

Ongoing erosion and sedimentation studies in the Redwood Creek basin, mandated by Public Law 95-250, have substantiated the need for additional and significant improvements in forest land use practices. Certain routine operating practices continue to contribute excessive amounts of eroded sed-

iment to stream channels in the watershed. The proposed guidelines are one attempt to bridge the gap between inadequate existing State forest practice regulations and more effective land protection measures needed to provide protection for downstream aquatic and riparian resources within Redwood National Park.

Chief among the needed forest practice improvements documented by National Park Service scientists are tighter controls for road location on steep, unstable stream-side slopes along Redwood Creek and its major tributaries, altered road building practices at stream crossing sites, and mandatory requirements for long-term maintenance of logging roads.

The impacts of land use activities and proposed solutions to these problems have been documented in recent public testimony as well as technical publications presented by park scientists. Such publications include: "Long-term On-site and Off-site Effects of Logging and Erosion in the Redwood Creek Basin, Northern California" and "Managing Forest Roads to Control Cumulative Erosion and Sedimentation Effects." Detailed recommendations were also provided to the California State Water Resources Control Board during their 1987 hearings for revision of the State's forest practice regulations.

#### CALIFORNIA FOREST IMPROVEMENT PROGRAM FOR THE REDWOOD CREEK BASIN

The California Forest Improvement Program (CFIP) is a State funded, cost-sharing program designed to assist small, private land-holders to develop and improve their forest resources. The cost of approved projects is split 75 percent and 25 percent between the State and the private landowner, respectively. Money is available for such projects as tree planting, thinning, brush control, wildlife habitat improvement, fisheries restoration and erosion control. Improvements conducted on private lands upstream from the National Park can have beneficial effects on downstream resources through their contribution to revegetation and erosion control.

Despite the cost-sharing funding, Redwood Creek landowner participation in the CFIP program has been marginal. In 1985, no projects were initiated; and in 1986 and 1987 only two small upper basin brush control projects were undertaken each year. In 1986, approximately \$500,000 was available for the California Department of Forestry's north coast region.

In the early 1980's the State's cost share was 90 percent; and for plans in Redwood Creek, the National Park Service contributed the remaining 10 percent share. Yet few landowners have chosen to participate in the program at the full reimbursement level. Each eligible landowner in the Redwood Creek watershed has been personally contacted by representatives of the California Department of Forestry regarding projects on their land, but the response remains low. It is not expected that this program will serve to significantly improve watershed conditions in the upper Redwood Creek basin.

## TIMBER HARVEST REVIEWS IN THE PARK PROTECTION ZONE AND UPPER REDWOOD CREEK WATERSHED

Redwood Creek drains a 280-square-mile basin in the steep, mountainous terrain of northern California. Since establishment of Redwood National Park in 1968, timber harvesting and road construction disturbances combined with inherently unstable soils, highly erodible hillslopes and exceptionally severe winter storms to pose threats of substantial damage to primary park resources in the lower Redwood Creek watershed. The protection of low-lying alluvial groves of old-growth redwood, including many of the world's tallest trees found in lower reaches of the watershed, was of greatest concern.

In July 1975, the Sierra Club initiated legal proceedings against the Department of the Interior to compel the Secretary to take actions to protect the resources of Redwood National Park. Evidence presented to the court established that continuing and substantial damage to park resources was directly related to logging activities in the watershed located upslope and upstream of park lands. The Department was directed by the court to take necessary steps to protect the timber, soils and streams within the park from adverse impacts of timbering on adjacent private lands.

### History of Pre-harvest Inspections

In 1976, the "Redwoods Agreement" was negotiated between the Department of the Interior, the Department of Justice, and the three major industrial timberland owners in the lower basin (Simpson Timber Company, Louisiana-Pacific Corporation and Arcata Redwood Company). The Redwoods Agreement stipulated that each company would submit plans for annual timber harvesting in Redwood Creek to the National Park Service for review and comment. The Agency's review included an evaluation of the proposed operations as well as field reviews of each harvest site to identify potential erosion problems. Following field reviews by agency scientists and technicians, mitigating recommendations were submitted to the companies and to the California Department of Forestry (CDF) for inclusion within the approved harvesting plan.

Field reviews of proposed harvest areas were specifically directed toward eliminating or substantially reducing the potential for increased erosion resulting from timber operations. Operations near stream channels and on unstable soils received rigorous attention. The objective of these inspections was to prevent permanent and irreparable damage to downstream resources within the park through modification of upstream land use practices.

To conduct these inspections, a multidisciplinary team of National Park Service hydrologists, geologists and foresters was assembled in 1976. The team began systematic reviews of proposed land use activities within a 77,000-acre area immediately upstream and upslope from Redwood National Park boundaries. The California Department of Forestry retained exclusive regulatory authority for timber harvesting operations conducted on these private lands and worked cooperatively with National Park Service professionals to assure that necessary recommendations were included as requirements within each plan of operation.

Accelerated erosion and sediment yield resulting from timber harvesting and road construction continued to threaten the downstream resources of Redwood National Park. Verification of these deleterious impacts within the Redwood Creek basin comprised a primary consideration in the Congressional action to enlarge the park in 1978. Over 48,000 acres, mostly former industrial timberlands in the lower Redwood Creek basin, were added to the park, both to preserve the remaining fragmentary stands of old-growth redwood and to create a protective buffer of stabilized land upslope and upstream of the park's superlative, but threatened, redwood groves along Redwood Creek.

#### Park Protection Zone

Although much of the land covered by the Redwoods Agreement was incorporated within the boundaries of Redwood National Park, Congress included the remainder in a 33,000-acre Park Protection Zone (PPZ), located immediately upstream of the national park boundary.

The PPZ encompasses four complete watershed tributaries to Redwood Creek. Within this area National Park Service geologists were directed, through the legislation and its legislative history, to continue to inspect all proposed land use activities, including timber harvesting and road construction operations, to detect potentially damaging practices and to provide protection to downstream park resources. As a last resort, if proposed harvesting or road building would likely cause damage to downstream park resources, and reasonable mitigations were not accepted by the landowner, the Department was directed to notify Congress as a first step in potential land acquisition proceedings.

Following expansion of the park in 1978, NPS professional staff continued to conduct office and field reviews of proposed timber harvest operations on private lands within most areas of the Redwood Creek basin. With few exceptions, all proposed operations within the PPZ were reviewed with the timber owner during detailed field inspections. In addition, plan areas on private lands upstream from the PPZ were also given field review if the terrain was judged erosionally sensitive or the results of operations could be potentially damaging to park resources.

## Cooperation with California Department of Forestry

In May 1978, following expansion of the park, the Deputy Regional Director, Western Region, National Park Service, negotiated an agreement with the California Department of Forestry (CDF), the State's regulatory agency for enforcing forest practice codes. The agreement stipulated: 1) the National Park Service would be notified by CDF of all proposed Timber Harvesting Plans (THP) submitted for lands within the entire Redwood Creek basin; and 2) Redwood National Park would be permitted to participate in CDF field reviews for harvest plans within the PPZ and on selected plan sites in the upper basin. NPS participation was to include both field inspections and office reviews of the proposed operations and subsequent formulation of recommendations to accept, reject, or modify specific operating proposals.

Beginning in early 1983, a change in administrative procedures implemented by the CDF effectively precluded NPS participation in the field review of timber harvesting and road construction plans on lands upstream from the PPZ, but within the Redwood Creek watershed. Currently, CDF allows park participation on timber harvest plan inspections outside of the PPZ only when the landowner's permission for access can be independently secured by park personnel prior to the field review. With rare exception, landowners regularly and routinely refuse access to park professionals for either pre- or post-harvest inspections.

Additionally, CDF regularly notifies the National Park Service of all harvest plan inspections within the PPZ, but many harvest plans for lands upstream from the PPZ have been field reviewed and approved by the State without notification to the National Park Service.

### Timber Harvest Reviews

While not all harvesting and road construction plans need park service input to assure adequate protection to downstream resources, certain proposed operations threaten to cause or accelerate severe landsliding which contributes to excessive sediment accumulations in downstream areas within the park. These operations need more review and field evaluation than is presently possible with the existing level of cooperation from the State and private landowners.

### Continued Access to Private Forest Lands

Assurance of continued access to private lands within the PPZ for purposes of field review and associated erosion studies could become even more uncertain in the future. Landowners upstream from the park have demonstrated a diminishing willingness to voluntarily allow access to park staff for inspection of land use practices or the collection of scientific data. Thus, since 1983, only a few park requests to participate in upper basin THP inspections have been honored. Any further reduction of State cooperation in securing access for plan inspections in the PPZ could further jeopardize land use reviews by park staff.

On April 22, 1977, the Secretary of the Interior testified that the 48,000 acre acquisition proposal for Redwood National Park is not self protective: "It is our best judgment that acreage in excess of 48,000 acres is not necessary to protect the park as long as timbering activities throughout the remainder of the watershed remain regulated by the State of California in concert with the National Park Service."

On October 13, 1977, the Senate Committee on Energy and Natural Resources acknowledged the need to protect park resources from potentially damaging land use activities upstream from the park. The committee recognized that the National Park Service had been provided the opportunity to pre-inspect company timber harvest plans pursuant to an agreement between the concerned companies and the Department of Justice. According to the committee, "this process appears to be working successfully and should be continued."

The Congress also directed the National Park Service to develop clear land use guidelines for critical lands adjacent to Redwood National Park. Draft Land Use Guidelines for the 33,000-acre Park Protection Zone have been developed by park staff and were submitted for review to the Department of the Interior on December 18, 1984. The guidelines address timberland operations on privately owned lands upstream of the park boundary which could be injurious to forest resources, wildlife and fisheries within the park's portion of the Redwood Creek watershed. When timber harvesting is proposed, the guidelines are to be used in conjunction with requirements of the State of California forest practices regulations. The objective of these guidelines is to protect downstream park resources while at the same time permitting orderly harvesting of timber on privately owned lands lying within the Park Protection Zone.

Future work directed toward protecting the resources of Redwood National Park from the potentially harmful effects of timber harvest on upstream lands will depend primarily on regaining access to private land either through participation within the State of California review process or through independent arrangements made with private landowners. While park efforts to secure access have continued throughout 1987, gaining adequate access to fulfill park resource protection objectives in the near future appears doubtful.

Restoring a high level of cooperation for timber management in Redwood Creek's upper basin is important for achieving sound and lasting protection for downstream park resources. The potential for impact from upper basin land use activities is as real today as it was in 1977 when the Secretary of the Interior and the California Secretary for Resources expressed assurances of mutual cooperation for the joint review of upper basin timber harvest plans. Both management and technical staff at the park level continue to express to CDF officials the urgency and willingness to reestablish joint evaluation of timber operations in the upper basin, as well as to institute post-harvest inspections for all operations upstream of the park boundary.

Timber Harvest Reviews for FY 1987

From January 1978 to October 1987, a total of 212 Timber Harvest Plans (THP) totalling 21,512 acres have been submitted to the California Department of Forestry for timber harvest and road construction within the Redwood Creek watershed (Table 1). Of these, 133 THPs totalling 12,769 acres were inspected by National Park Service professionals.

During 1987, 18 timber harvesting plans (totalling 2,496 acres) were submitted for lands within the Redwood Creek watershed upstream from Redwood National Park (Table 2). Only three of these (154 acres) were for operations in the Park Protection Zone.

National Park Service geologists conducted field reviews on all proposed harvest plan areas within the PPZ. The National Park Service was not notified of the CDF pre-harvest inspection schedule on 10 of 15 plans in the upper Redwood Creek basin, upstream of the PPZ.

TABLE 1. Summary of annual Redwood National Park timber harvest reviews conducted on lands upstream the National Park.<sup>1</sup>

	<u>1978</u> <sup>2</sup>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>TOTAL</u>
Plans Submitted	22	40	27	12	15	27	14	14	23	18	212
Park Protection Zone (PPZ)	13	26	14	4	11	15	4	7	13	3	110
Upper Basin	9	14	13	8	4	12	10	7	10	15	102
Total Acreage	2,213	2,759	3,510	977	750	2,777	1,619	1,534	2,877	2,496	21,512
Plans Inspected by National Park Service (PPZ/UPPER BASIN)	12/2	25/5	14/5	4/4	11/3	15/3	4/1	7/0	12/1	3/2	133
Acreage Inspected by National Park Service	1,365	2,292	3,084	625	630	1,614	335	563	1,624	637	12,769

1 By fiscal year

2 Does not include 24 timber harvesting plans covering 837 acres located on private lands in the 1978 expansion area which were field inspected but never harvested.

TABLE 2. 1987 Timber Harvesting Activity in the Redwood Creek Drainage Basin.

<u>Location</u>	<u>Plans Submitted</u> (No)	<u>(Acreage)</u>	<u>Plans Inspected by NPS</u> (No)	<u>(Acreage)</u>
PPZ	3	154	3	154
Upper Basin	<u>15</u>	<u>2,342</u>	<u>2</u>	<u>483</u>
Totals	18	2,496	5	637

Restoration of Redwood Creek's Aquatic Resources

Redwood Creek of three decades ago was well known regionally for its native populations of chinook salmon and steelhead trout. The waterway's production of these highly prized anadromous fish, however, incurred increasing impacts from habitat depletion in upstream areas logged prior to the 1978 park expansion. In addition to losses of spawning habitats, the fish populations were burdened further with reductions of important estuarine habitat utilized by juvenile fish in transition to ocean environment. The estuary sustained significant modification caused by channelization of the creek's ocean outlet associated with construction of 3.2 miles of flood control levees by the U.S. Army Corps of Engineers subsequent to the 1964 flood. (Plate 20) Reversing the effects of these cumulative impacts and restoring annual migrations of salmon and steelhead is one of the objectives of the park's program for rehabilitation of logged lands in the Redwood Creek watershed.

The park began active management of the remnant estuary in 1982. Management activities include habitat restoration and flood control for privately owned adjacent lands during periods of cyclic high water. Low creek flows of late spring and early summer months allow ocean wave action to form a natural sand berm, or barrier bar, at the estuary's outlet. The embayment formed by rising water within the barrier bar provides critical habitat for fingerling salmon and steelhead undergoing physiological adaptations for ocean environs. The natural entrapment of creek flow also threatens flooding of adjacent pastureland. Draining of the embayment by landowners, through breaching of the barrier bar, has occurred in the past. This unauthorized action reduced important fish habitat and prematurely discharges subadult fingerlings into the ocean, whereby their survival is diminished.

Management actions for embayment flood control continued through 1987 and included controlled breachings of the barrier bar when summer water levels exceeded 5.0 feet above mean sea level. These actions prevented flooding of adjacent pastureland while allowing only minimal losses of salmonid rearing habitat. Between June 1 and August 11, embayment water levels were lowered by controlled breachings a total of 19 times, at a cost of \$8,128. Comments received during meetings with local residents indicate that landowners,

fishermen and the interested public are generally satisfied with the park's estuarine management during the past year.

Research and monitoring were conducted during 1987 for water quality, water volume and circulation, and numbers and growth of juvenile salmonid utilizing the embayment during summer months. Water quality indicator samples of temperature, salinity, conductivity and dissolved oxygen were collected from 12 sites in the north and south sloughs of the estuary from July 15 to September 17. These samples indicated the north and south sloughs contained the estuary's least productive habitat, due to minimal circulation, lack of depth and proportionately high water temperatures. The south slough was formerly the main channel of Redwood Creek prior to its being isolated by levee construction.

Embayment fish populations and growth rate estimates derived from six seining operations performed between June 15 and September 22. (Plates 7, 8, and 11) Chinook salmon populations ranged from a mid-June high of 117,218 to a low of 66,690 on July 30. Steelhead trout populations were estimated from seinings on July 30 (25,458 fish) and August 27 (18,836 fish). The estimated population of salmon exceeded those of previous years, but the time period for rearing within the estuary was less than prior years. Shortened periods of residency for an expanding population of salmon is consistent with the embayment's limitation of habitat. Research findings indicate the stream channelization associated with levee construction constituted a 75 percent loss of original wetland and riparian habitats, along with accumulation of bottom sediments and deterioration of water quality.

The opportunity for restoration of portions of Redwood Creek embayment habitat came in April 1984 with a project for construction of a four-lane bypass to Highway 101 at Prairie Creek Redwoods State Park. Impacts to fishery associated with the construction project required mitigation measures to be derived from the project's \$112 million appropriation. The selected mitigation alternative for Redwood Creek was the construction of a controlled-flow diversion culvert through the creek's south levee. This culvert would restore anadromous fish habitat in the estuary's south slough, which had been part of the stream's main channel until deprived of natural flow by construction of the levee in 1968. (Plate 18)

The south levee diversion culvert was the subject of public meetings and comments prior to construction. There were generally favorable comments for benefits to Redwood Creeks's populations of salmon and steelhead trout. A single statement was received from a private landowner citing the possibility of erosional losses to private property adjacent to the construction site from reestablishment of stream flow within the creek's original channel. By year's end, an allocation of \$635,000 was made for the project. Design and planning work were also initiated by the U.S. Army Corps of Engineers. Construction began in July 1987, with completion anticipated in January 1988. The diversion culvert will be maintained and operated by Redwood National Park.

Studies associated with a hydrodynamic model of the estuary's south slough were performed for the park under contract by the Environmental Resources Engineering Department of Humboldt State University in Arcata, California. The project resulted in development of a two-dimensional mathematical model integrating such characteristics as water flow patterns, salinity and temperature gradients, and the estuary's response to tidal ebb and flow. The model derives from field data where actual circulation patterns were monitored. The model will be used to predict results of operation for the controlled-flow diversion culvert in the south levee. The contract cost for hydrodynamic modeling was \$21,000.

Overall, the levee modification project represents a significant step toward restoration of critical fish habitat contained in the estuary. As rehabilitation efforts improve aquatic habitats in upstream tributaries, the number of juvenile salmonids requiring the estuary as summer rearing habitat is expected to increase. Sound long-term management of the Redwood Creek estuary therefore continues to be an important factor in achieving the full potential of the park's watershed rehabilitation program.

#### Bald Hills Road

Members of the Humboldt County Board of Supervisors have in the past expressed interest in the transfer to the National Park Service of portions of the Bald Hills Road lying within Redwood National Park. This level of interest was duly noted in the Eighth Annual Report. However, no formal request for negotiations has taken place during calendar year 1987. Contact with individual supervisors indicates no desire at this time to pursue this issue.

#### Shuttle Bus Service

Redwood National Park operated the Tall Trees Shuttle Bus system for the ninth summer, providing transportation to the Tall Trees Grove and trailhead. The park contracted with North Coast Redwood Tours to provide shuttle service. The Tall Trees Grove is a major focus of visitation, and the shuttle bus is the only way for all but the hardiest visitors to gain access to the tallest trees. The park tours originate at the Redwood Information Center, two miles south of Orick. The bus route traverses a 35.5-mile round trip between the Redwood Information Center and the Tall Trees Trailhead. This route includes a portion of Highway 101 through Orick, seven miles along the Bald Hills Road, then down the park's gravel road to the trailhead. A one-mile walk remains to the Tall Trees Grove, where visitors can walk a quarter-mile loop nature trail along an alluvial terrace that is habitat for the tallest tree and several rivals. Visitors may also be picked up at the Redwood Creek trailhead parking area, where they can park their vehicles, ride to the Tall Trees trailhead, and hike eight miles back to their point of origin.

The Tall Trees Shuttle Bus began seasonal service on May 23, 1987. Three tours were operated on a daily basis. Tickets for the service were sold at the Redwood Information Center. On July 4, the service was extended to four

tours daily. This continued through August 15. August 16 through September 17, the service was reduced to three tours daily.

A total of 3,541 shuttle tickets were sold with 405 tours given. During the same time period in 1986, a total of 2,581 tickets were sold and 364 tours given.

During the shuttle bus trips the drivers (who are trained and monitored by NPS staff) tell the story of man's impacts on the Redwood Creek watershed, and the 1978 Congressional mandate for restoration of the park's logged lands. The route to the trailhead takes visitors through old-growth redwood forests, as well as logged lands rehabilitated by the park's resource management staff. The history of park expansion and the objectives and techniques of restoring the watershed are also explained.

A wide variety of programs communicate park resource management activities to visitors. Presentations, nature walks, and tours are provided to the general public as well as special groups, such as the Mathematical Society of America, the Society of Range Managers, and various other professional and student groups. During the year, wayside and indoor exhibits on watershed rehabilitation were installed at the Redwood Information Center. Several publications for the general reader are provided, and technical reports are made available to those seeking more detailed information on park programs.

#### Redwood Employee Protection Program (REPP)

This benefit program is administered by the California Employment Development Department (EDD). Regulation guidelines from the Department of Labor allowed EDD to begin the program under REPP on April 11, 1979. Previously, EDD used the Comprehensive Employment and Training Act (CETA) training program for CETA-eligible trainees.

The CETA office of Humboldt County administered the training program through subcontract from EDD from June 19, 1979 to November 30, 1979. Thereafter, CETA declined to extend the contract and EDD has provided this service directly since December 1, 1979.

With the end of Fiscal Year 1984, all entitlements to training, job search, job search allowances, and most entitlements to benefits have expired. Ongoing weekly benefit charges after September 30, 1984 consist primarily of weekly payments to elder employees (age 60 before October 1984) until age 65. Certain benefit charges will also continue for claims established through resolution of pending administrative and judicial appeals.

REPP benefit charges are expected to continue until September 30, 1989 for elder employees and for those whose eligibility has been resolved through administrative and judicial appeals. At the close of Calendar Year 1987 there remained 67 elders whose period of protection had not ended. In addition, there are 122 administrative appeals pending decision and three cases before the Ninth Circuit Court. There are also 90 individuals whose REPP eligibility is pending resolution by an Administrative Law Judge as a

result of a trade dispute with Louisiana-Pacific Lumber Company. A total of 432 qualified applicants have been processed for retraining through this program since its inception in 1978.

Redwood Employee Protection Program (REPP) - Employers

There are now 34 affected employers, and 15 affected contract employers. With regard to REPP employers, during April 1984, Redwood Construction, Redwood Coast Repairs, and Redwood Coast Trucking were recertified as affected contract employers.

Redwood Employee Protection Program (REPP) - Employee Benefits

The REPP began in Fiscal Year 1978. The first benefits were paid September 1, 1978 and totaled \$325,326. The following tabulation shows the annual increment of payments and total payments from September 1, 1978 through December 31, 1987.

<u>Year</u>	<u>Annual Increment</u>	<u>Total to Date</u>
FY 1978	\$ 325,326	\$ 325,326
FY 1979	11,073,702	11,399,028
FY 1980	12,647,830	24,046,858
FY 1981	21,136,221	45,183,079
FY 1982	24,553,918	69,736,997
FY 1983	17,275,644	87,012,641
FY 1984	7,669,683	94,682,324
CY 1985	4,679,344	99,361,668
CY 1986	2,345,716	101,707,384
CY 1987	1,464,224	103,171,608

REDWOOD EMPLOYEE PROTECTION PLAN STATISTICS THROUGH DECEMBER 31, 1987

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Applications received by Employment Development Department . . . . .	5,867
Number of Affected Workers determined eligible for Weekly Layoff Benefits . . . . .	2,850
Number of Affected Workers determined eligible for Severance Payment . . . . .	2,142
Number determined ineligible for Weekly Layoff Benefits and/or Severance . . . . .	2,109
Number of individual affected workers who have received Weekly Layoff Benefits (some workers have established eligibility, but have not made claims) . . . . .	2,850
Amount of Weekly Layoff Benefits Authorized . . . . . \$	63,408,386
Number of Severance Payments Authorized . . . . .	2,521
Amount of Severance Pay Authorized . . . . . \$	38,583,835
Distribution of Severance Payments	
Regular/Seasonal . . . . .	1,521
Short Service . . . . .	708
Retired . . . . .	289
Affected Workers who received Job Search Allowances . . . . .	112
Total Job Search Allowance . . . . . \$	20,974
Affected Workers who received Relocation Allowances . . . . .	139
Total Relocation Allowance . . . . . \$	392,687
Requests received for Retraining . . . . .	2,442*
Approved Requests for Retraining . . . . .	1,306*
Funds Dispensed for Retraining Totaled . . . . . \$	786,700
<hr/>	
Total Disbursements of REPP Benefits . . . . . \$	103,171,608

\* These figures include repeat requests by individuals as training for subsequent semesters.

## STATUS OF THE EFFORTS TO MITIGATE ADVERSE ECONOMIC IMPACTS

### Redwood Region Economic Development Commission (RREDC)

RREDC was established in 1978 to allocate and disburse Economic Development Administration (EDA) Title IX funds awarded to Humboldt County, to help mitigate the job loss resulting from Redwood National Park expansion in 1978. The Revolving Loan Fund Plan was established to assist businesses to fund projects which provide new and permanent jobs in the county. RREDC was also responsible for administering public works and technical assistance grants and monitoring the status of the County's economy.

RREDC completed disbursing the original \$10,500,000 from the Title IX Grant in September 1982. Of that amount, \$7,500,000 funded public works and technical assistance projects. The remaining \$3,000,000 provided the base capital and administrative funds for establishing the Revolving Loan Program.

As of June 30, 1987, RREDC had issued a total of 34 loans varying in amount from \$10,000 to \$600,000. Terms have varied from 5 years to 25 years. Interest rates started in 1978 at 9.5 percent, went up to 13.5 percent in 1982, then back down to 10.0 percent. Currently, five-year loans are being made at a 10 percent rate, and ten-year loans are being made at a 12 percent rate. RREDC loans have resulted in the creation or retention of 360 Humboldt County jobs.

Almost all of the loans (with the exception of six) have gone to businesses in the originally targeted categories of manufacturing, fishing, and tourism. Of the 33 loans made, five have been fully repaid. Twenty of the businesses are still in operation and current with their repayment. Manufacturing facilities of two former businesses with defaulted loans have been repossessed and subsequently leased to new operators who are providing new jobs (an activated charcoal manufacturing plant, and a small sawmill originally designed for hardwoods). Alternative collection efforts were completed or underway for the remaining four defaulted loans. The two loans delinquent as of August 31, 1986 are now current.

RREDC continues to have \$90,000 available each quarter to lend to Humboldt County businesses with job-creating projects. Since loan program interest revenue each year has exceeded administrative costs, RREDC continues to function as a financially self-sufficient agency.

In April 1987, RREDC completed a feasibility study for lodging and other tourist-serving facilities in the Orick community, adjacent to the southern boundary of Redwood National Park. Very little development has occurred in the Orick area since Park expansion, and the community has had little success in attracting or retaining park visitors or their expenditures. The feasibility study was done under a Community Development Block Grant planning subcontract with the County of Humboldt.

A 14-acre, privately-owned land parcel, located 2.5 miles north of Orick and currently available for purchase, has been identified as a potentially ideal site for a 75-room lodge. This site offers an excellent interpretive setting with views of the Lady Bird Johnson Grove, convenient access to Highway 101, and proximity to herds of Roosevelt elk at Prairie Creek as well as the scenic Bald Hills region of Redwood National Park.

Construction of a quality 75-room lodge in this attractive and secluded setting was preliminarily estimated to cost \$7.4 million. If 19,500 visitor-parties per year would purchase one night's lodging, the investment could be feasible under a private-public partnership financing structure. A \$600,000 infrastructure grant, a private equity contribution of \$1.4 million, and a long-term, government-guaranteed, low interest loan of \$5.4 million could generate adequate financing for development. Achieving the 19,500 annual visitor-party "capture" should raise enough revenue to cover operating costs, fully repay the loan within 30 years, and offer an attractive cash return to an equity investor as well.

The number of tourists passing through Orick on Highway 101 each year has averaged approximately 1.3 million over the past ten years. During this same period, visitation to park areas near Orick has grown five percent per year on average.

As availability of staff time and budgetary resources permit, RREDC is planning to continue efforts toward pursuing a lodge project on property adjacent to Redwood National Park. RREDC will be trying to find a development team interested in and capable of accomplishing the project and working to identify sources of commercial and subsidy financing.

In 1987, RREDC also assisted the Orick Economic Development Corporation in securing a grant of \$25,000 from the California "Rural Renaissance" economic development fund for a store front improvement revolving loan fund. It is anticipated that facade improvements, landscaping, and signing consistent with a coordinated design will increase the ability of Orick's business community to attract and retain tourists passing through on Highway 101.

RREDC continues to offer a monthly forum where representatives from all major Humboldt County jurisdictions coordinate economic development events, and are provided with information on new economic development opportunities, and sources of technical assistance and financing. The agency also continues to support affiliated efforts, such as free counseling service for small businesses, and responding to industrial location inquiries.

#### Tri-Agency Economic Development Authority (Tri-Agency)

Tri-Agency was formed December 9, 1975 by a joint powers agreement between the County of Del Norte, California, the City of Crescent City, California and the Crescent City Harbor District.

The Tri-Agency entered into a subgrant agreement on June 30, 1976 with the Area Independent Development Corporation (A.I.D. Corporation) to administer the business loan program. A.I.D. Corporation provides its staff to the Tri-Agency for administrative functions and also provides accounting and auditing services to the Tri-Agency in connection with its accounting and auditing services contract. Area Independent Development Corporation secured a change in name to Del Norte Economic Development Corporation early in 1987.

Neither the Tri-Agency, the A.I.D. Corporation, nor any other governmental function in Del Norte County, has applied for funding under the economic mitigation sections of the Redwood National Park Expansion Act of 1978 (Public Law 95-250).

#### In Lieu of Tax Payments

The State of California received \$11.1 million as Payments in Lieu of Taxes, or PILT payments, for Fiscal Year 1987. California's PILT payment was the largest among the States, with New Mexico second (\$10.6 million) and Utah third (\$9.9 million). With the exception of Rhode Island, all states, plus Puerto Rico, Guam and the Virgin Islands, received PILT funds for 1987. The amount paid to California in 1987 represents an increase of \$192,568 over the previous year's payment.

Humboldt County received payment of \$1,568,948--the highest compensation for 1987 among California's 58 counties. Del Norte County received \$45,842 as Payment in Lieu of Taxes for 1987.

PILT payments act as partial compensation for fiscal impacts of tax-exempt federal lands within the state and can be used for any governmental purpose. This distribution of federal funds is authorized by the Payments in Lieu of Taxes Act (Public Law 94-565) of October 20, 1976.

Del Norte County

LABOR FORCE TRENDS AND OUTLOOK

(Excerpts from: Annual Planning Information, Del Norte County 1987-1988)

Del Norte County's annual average civilian labor force made a small decline from 1985 to 1986, dropping by approximately 1.1 percent to reach 6,825 persons. This decrease was reflected in the annual average total unemployment. The annual average total unemployment dropped 150, reaching a total of 875 unemployed. The annual total employment rose by 75 workers. These fluctuations in the labor force figures for 1986 resulted in an approximate 1.3 percent rise in total employment and an approximate 14.6 percent fall in total unemployment. The resulting annual average unemployment rate for 1986 of 12.7 percent was 2.1 percentage points below the 1985 rate. The economic forecast for the two-year outlook period calls for substantial growth throughout the period. Del Norte County's labor force trends are expected to reflect the projected growth in industry wage and salary employment. The jobless rate will continue the downward spiral began in 1985, but at a slightly slower rate through the forecast period. The momentum for this continued improvement in the unemployment rate will be brought about by the start of construction of a State correctional facility in 1987. The net result is an expected drop of 2.4 percentage points over the two-year outlook period, to an 1987 annual average unemployment rate of 10.3 percent.

Civilian Labor Force, Employment and Unemployment  
1985 - 1986 Annual Averages  
1987 - 1988 Forecast  
Del Norte County

Items	Historical		Forecast	
	1985	1986	1987	1988
Civilian Labor Force <sup>1/</sup> . . .	6,900	6,825	6,975	7,550
Employment . . . . .	5,875	5,950	6,175	6,775
Unemployment . . . . .	1,025	875	800	775
Unemployment Rate <sup>2/</sup> . . .	14.8	12.7	11.5	10.3

March 1986 benchmark

<sup>1/</sup> Labor force by place of residence. Employment includes persons involved in labor-management trade disputes.

<sup>2/</sup> The unemployment rate is computed from unrounded data; therefore, it may differ from rates developed by using the rounded figures in this table.

Del Norte County  
 Annual Average Wage and Salary Employment  
 Historical 1985-1986  
 Forecast 1987-1988

Industries	Historical		Forecasts	
	1985	1986	1987	1988 <sup>1/</sup>
Total <sup>2/</sup> . . . . .	5,100	5,125	5,525	5,975
Total agriculture, forestry & fishing . . . . .	450	475	475	475
Total nonagricultural . . . . .	4,650	4,650	5,050	5,500
Construction & mining . . . . .	100	100	300	600
Manufacturing . . . . .	1,025	950	975	975
Food & kindred products . . . . .	200	200	225	225
Lumber & wood products . . . . .	800	725	725	725
Other manufacturing . . . . .	25	25	25	25
Transportation & public utilities . . . . .	250	250	275	325
Wholesale trade . . . . .	75	75	100	100
Retail trade. . . . .	850	850	875	925
Finance, insurance & real estate. . . . .	125	125	125	125
Services. . . . .	800	1,125	1,150	1,175
Government . . . . .	1,400	1,225	1,250	1,275

March 1986 benchmark

<sup>1/</sup> The 1987 forecast assumes construction will begin on the California Department of Corrections correctional facility during the year.

<sup>2/</sup> Employment is reported by place of work; it does not include persons involved in labor-management trade disputes. Detail may not add to totals due to independent rounding.

## Industry Trends and Outlook

Only a very slight wage and salary employment gain occurred in Del Norte County in 1986. The total number of jobs remained the same in all but four industry divisions. Total nonagricultural wage and salary employment remained stable between 1985 and 1986, although there were fluctuations in three of its industry divisions. These fluctuations counteracted each other causing total nonagricultural wage and salary to be unchanged from 1985. This left total agriculture, forestry, and fishing responsible for the slight wage and salary employment gain.

Service industry payrolls, the only nonagricultural wage and salary industry division to advance in 1986, increased by approximately 40.6 percent, an increase of 325 jobs, as a result of the transfer of a major medical facility from the local government sector, the County's local hospital district, to the private sector and substantial growth in the health service industry.

Government and manufacturing were the only industry divisions to decline in employment between 1985 and 1986. The government sector, which made the largest decline of any industry division, declined by 175 workers. This was mainly because of the transfer of a major medical facility as has already been mentioned. The manufacturing industry division, which declined by 75 workers, fell in employment due to staff reductions in sawmill and logging operations. This decrease was caused, primarily, by some company reorganization and lumber market conditions.

Agriculture, forestry, and fishing annual average employment increased by approximately 5.6 percent between 1985 and 1986. This increase in employment resulted from slightly improved agricultural marketing conditions.

## Outlook Through 1988

The two-year wage and salary employment forecast for Del Norte County calls for an increase of 775 workers. An annual industrial employment average of 5,900 is expected in 1988, the highest average since 1980. This rise represents an approximate 15.1 percent advance over the 1986 average. The majority of this growth can be attributed to the proposed correctional facility to be built in the County by the California Department of Corrections.

Employment in the County's construction and mining industry division is expected to demonstrate, by far, the largest increase of any industry sector, during the forecast period. This substantial increase, which will be caused by the construction of the planned correctional facility, will create an annual average gain of 500 workers for 1988, over 1986, an increase of 500.0 percent.

Manufacturing employment is projected to post a modest increase during the next two years of the forecast period. This small amount of growth is

anticipated to occur in the food and kindred products sector, more specifically, fish and seafood processing, increasing by 25 workers, to an annual average of 225 workers. It will remain at that level through 1988. Consumer demand for seafood is expected to continue to expand. The long-term outlook will depend on the resolution of environmental issues and government regulation of the fishing industry.

The transportation and public utilities industry sector in Del Norte County is expected to experience considerable growth during the forecast period expanding to a 1988 employment average of 325, an increase of 75 workers. Expansion in this division will be fueled by the needs of the state correctional facility construction coupled with the anticipated increase in the area's population.

Employment in the County's wholesale trade sector is expected to rise by 25 workers in 1987, reaching an annual average of 100 workers and staying at this level through the forecast period. Anticipated job gains in this industry division will result from the need of the correctional facility project for wholesale goods, such as building supplies. Also, the project workers' need for retail goods will spur retailers' demand for wholesale goods.

Payrolls in the area's retail trade sector is predicted to expand by 75 workers, an approximate 8.8 percent increase over 1986. This growth will mainly result from increased demand for food and other retail goods brought about by the increase in construction payrolls and a growing population in the County.

The levels of employment for finance, insurance, and real estate are projected to remain stable for the next two years. The 125 worker employment level reached in 1980 will be maintained through 1988.

Service industry payrolls are forecast to expand, gaining a total of 50 new jobs over the two-year period. Motels and other lodging places, amusement parks, and private health services are the major components of this industry group. All of these components should experience an employment increase, resulting from a direct influence of the correctional facility project and a favorable outlook for tourism.

Government payrolls are expected to expand by 50 jobs during the two-year period, reaching an annual average of 1,275 workers in 1988. This gain will primarily be the result of increases in state government due to the new State correctional facility.

Humboldt County

LABOR FORCE AND INDUSTRY OUTLOOK

(Excerpts from: Annual Planning Information, Humboldt County 1987-1988)

LABOR FORCE OUTLOOK

There will be moderate employment growth in Humboldt County during both 1987 and 1988. As a result, the unemployment rate will continue to decline, but at a slower pace than during the 1984-1986 period. Local unemployment will remain well above the statewide average because of the persistence of structural unemployment in the county, and the seasonal nature of Humboldt's logging, fishing, and tourism-dependent jobs.

Humboldt County  
Civilian Labor Force, Employment and Unemployment  
1985-1988

	Annual Average			
	1985	1986	Forecast 1987	1988
Civilian labor force*	47,900	48,300	48,700	49,000
Employment	42,800	43,900	44,400	44,800
Unemployment	5,100	4,400	4,300	4,200
Unemployment rate**	10.6	9.1	8.8	8.6

\* Labor force by place of residence. Employment includes persons in labor-management trade disputes.

\*\* The unemployment rate is computed from unrounded data; therefore, it may differ from rates calculated by using the rounded figures in this table.

Humboldt County

Wage and Salary Employment\*  
1985 - 1988  
(Amounts in Thousands)

Industry	Annual Average				Percent Change		
	1985	1986	Forecast 1987	1988	85-86	86-87	87-88
Total, all industries	40.1	41.0	41.8	42.3	2.2%	2.0%	1.2%
Agricultural employment	0.8	0.9	0.9	0.9	12.5%	0.0%	0.0%
Nonagricultural employment	39.3	40.1	40.9	41.4	2.0%	2.0%	1.2%
Construction & mining	1.3	1.4	1.4	1.4	7.7%	0.0%	0.0%
Manufacturing	6.0	6.1	6.0	5.9	1.7%	-1.6%	-1.7%
Lumber & paper products	4.7	4.7	4.6	4.5	0.0%	-2.1%	-2.2%
Food products	0.5	0.5	0.5	0.5	0.0%	0.0%	0.0%
Other manufacturing	0.9	0.9	0.9	0.9	0.0%	0.0%	0.0%
Transportation & public utilities	2.3	2.3	2.3	2.3	0.0%	0.0%	0.0%
Wholesale trade	1.5	1.6	1.7	1.8	6.7%	6.3%	5.9%
Retail trade	8.0	8.3	8.7	8.9	3.7%	4.8%	2.3%
Finance, insurance, & real estate	1.4	1.5	1.5	1.6	7.1%	0.0%	6.7%
Services	9.0	9.2	9.5	9.7	2.2%	3.3%	2.1%
Hotels & motels	0.7	0.8	0.8	0.9	14.3%	0.0%	12.5%
Health services	3.1	3.2	3.3	3.3	3.2%	3.1%	0.0%
Other services	5.2	5.3	5.4	5.5	1.9%	1.9%	1.9%
Government**	9.8	9.8	9.8	9.8	0.0%	0.0%	0.0%

March 1986 benchmark

\*Employment is by place of work and does not include persons involved in labor-management trade disputes.

\*\*Includes all civilian government employees regardless of activity in which engaged.

Note: Parts may not add to totals due to independent rounding.

## Industry Outlook

The number of jobs in Humboldt County will grow at a moderate rate during both 1987 and 1988. As a result, the county's job total will finally exceed the level reached in the late seventies before substantial job loss occurred in the 1980 and 1982 recessions.

The major labor market highlight of the next two years will be the opening of a new shopping mall in Eureka. This will result in substantial job growth in retail trade, particularly in department stores and restaurants. At least one new and one expanded department store, and many miscellaneous retail stores will be locating in the mall.

Most other industries will continue to follow recent trends. Construction payrolls will remain at historically high levels because of continuing work on the Redwood Park bypass. The number of jobs in hotels and motels will also continue to expand gradually. Lumber industry payrolls will decline slightly as a result of increased use of labor saving technology. Note that this forecast assumes that two major proposed projects--the Exxon oil module project and the Halvorsen hotel project--will not begin during the next two years. If either of these projects does get underway, job growth will be correspondingly higher. Following is an industry-by-industry look at this forecast.

HUMBOLDT COUNTY  
Job Growth by Industry Division  
1987 -1988

Retail trade	600
Services	500
Wholesale trade	200
Finance-insurance-real estate	100
Manufacturing	(-)200

### Retail Trade

Retail trade will be the fastest growing industry division in Humboldt County during the next two years. Opening of the new Bayshore Mall shopping complex in the fall of 1987 will be the major cause of this expansion. Bayshore Mall will be anchored by several major department stores including a Mervyn's outlet and an expanded J.C. Penney store, and will include many smaller shops, restaurants, and a movie complex. A considerable proportion of the mall probably will be filled by firms relocating from other sites within the county, but, nevertheless, a substantial number of new jobs will be created. Retail job growth will also benefit from several smaller

projects, especially the new Cutten Plaza shopping mall. This new "retail strip" type of shopping center also is scheduled to open in the fall of 1987.

It is important to realize that many of the new jobs in retail trade will be part-time. Nationally, over 30 percent of all jobs in retail and wholesale trade are part-time. Undoubtedly, this figure is much higher for specific industries which are important in Humboldt, such as restaurants. The high percentage of part-time work and the generally low wage structure characteristic of retail trade are reflected in the amount of payroll wages paid locally. Retail trade accounts for 20 percent of all jobs, but only 10 percent of wages paid. In contrast, manufacturing accounts for only 15 percent of all jobs, but 20 percent of wages paid.

### Services

Services industries will generate the second largest number of new jobs during 1987-88. Tourism is expected to remain fairly strong, which will result in marginal growth in the hotel/motel sector. This sector will receive an additional boost if the Eel river excursion train resumes operations because the train ride requires an overnight stay in Eureka. The number of jobs in medical services will also increase, particularly jobs in convalescent hospitals. In Humboldt County, hotels/motels, medical, and social services account for 70 percent of all jobs in the services industry division.

### Manufacturing

Despite periods of shrinkage in the 1970s and early 1980s, the forest products industry remains the dominant force in Humboldt's economy. During the next two years, job totals should decline slightly as a result of increasing automation in the industry. The national lumber market is expected to be favorable, with a continued high level of single family housing starts. The forest products industry cuts across several industry divisions, as the following table illustrates.

Humboldt County  
 Forest Products Industry Payroll Employment\*  
 Seasonal Peak: August 1986

	Number of Jobs
Forestry	100
Logging	1,000
Sawmills	3,300
Miscellaneous lumber and paper mills	800
Log hauling	400
Wholesale lumber products	300
<b>TOTAL</b>	<b>5,900</b>

\* Does not include self-employment

Other Industries

Most other industries will be stable or experience moderate job growth during the next two years. The wholesale trade and finance, insurance, and real estate categories will increase marginally as a result of general economic growth. In Humboldt County, wholesale trade is composed primarily of logging and sawmill machinery wholesalers, lumber wholesalers, grocery wholesalers, and auto parts wholesalers. Construction payrolls are expected to stay at their current historically high level primarily because of continued work on the Redwood National Park bypass road. Apartment construction, which has been quite strong, may tail off because of effects of the new tax law. Humboldt's very important government sector is expected to show little change. Severe budgetary constraints will continue to affect government at all levels. Local government employment payrolls may expand slightly because of growing enrollment in the elementary grades, but this increase will be offset by declines at the State and federal level.

Forest Service U.S.D.A. Land Management Planning Process and Six Rivers National Forest Mitigative Employment Program  
Land Management Planning Process and Program of Work Accomplishments FY 87

During Fiscal Year 1987 work continued on the Forest Management Plan for Six Rivers National Forest. The Six Rivers National Forest Plan and Draft Environmental Impact Statement were submitted to the public for comment, with the 120-day comment period ending May 21. The Forest spent the remainder of FY 87 analyzing over 8,000 responses and over 16,000 individual comments. Once it is finalized and approved, the Forest Plan will guide the management of the Forest for the next 10 to 15 years.

The Forest awarded contracts, primarily to local firms, for a total value of approximately four million dollars. These contracts included about 45 miles of road construction and reconstruction, and the construction of an office building for Orleans and Ukonom Ranger District employees.

Other labor-intensive contracts were for such work as timber cruising, land surveys, road maintenance, building maintenance, fishery improvement projects, timber stand improvement, reforestation, brush disposal, and erosion control. In addition, approximately 46 miles of roads (\$600,000 value) were constructed or reconstructed under timber sale contracts.

Six Rivers National Forest, in conjunction with the Forest and Range Experimental Station at Humboldt State University, is developing and evaluating a habitat analysis procedure that will identify the critical needs of salmon and steelhead populations in Northern California. The Forest also hosted a habitat evaluation workshop to open the lines of communication to all fisheries biologists and agencies in Northern California, and to standardize terms and methodologies. The procedure is consistent with the "Land and Resource Management Plan" monitoring plan and the Washington Office Fish-Habitat Relationship Program.

The Forest is completing 14 fish habitat projects that will result in the construction of 119 structures to restore spawning and rearing habitat for anadromous fish. Five Coordinated Resource Management and Planning (CRMP) projects are ongoing on the Forest. Two CRMP projects are total watershed/fish habitat projects that resulted in the construction of spawning and rearing facilities and ponds. Over 133,500 yearling chinook salmon will be released in FY 87. Our partners in CRMP are local timber companies, the California Department of Fish and Game, Karok Indians, the Northern California Indian Development Council, and the California Conservation Corps.

The timber sell program for Fiscal Year 1987 was approximately 145.0 million board feet (MMBF). During the last quarter of Fiscal Year 1987, the Forest began an environmental analysis and preparations for the harvest of approximately 48.5 MMBF of timber from the Blake Fire area. The Blake Fire is one of two fires that occurred on the Mad River Ranger District in October of 1987.

In 1987, the Forest continued its cooperation with the Northern California Indian Development Council and the Hoopa Tribe, to provide job training for unemployed Indian workers.

STATUS OF NATIONAL PARK SERVICE EMPLOYMENT REQUIREMENTS AS AUTHORIZED BY SECTION 103 OF THIS AMENDMENT

National Park Service - Redwood National Park Employment Programs

The program by which the Employment Development Department (EDD) and its local offices acted as clearinghouses for "affected workers" ended on September 30, 1984. Despite the termination of this program, Redwood National Park continued hiring affected woods workers through the normal hiring process during 1987.

Since March 17, 1978, when the park legislation directed hiring affected workers, the following positions have been filled:

- 1979 - 3 career-conditional  
8 temporary (seasonal)  
(includes 1978)
- 1980 - 8 temporary (seasonal)
- 1981 - 10 temporary (seasonal)
- 1982 - 1 career-conditional  
2 four-year term appointments  
10 temporary (seasonal)
- 1983 - 2 career-conditional  
2 four-year term employees  
8 temporary (seasonal)
- 1984 - 8 temporary (seasonal)
- 1985 - 4 temporary (seasonal)
- 1986 - 4 temporary (seasonal)
- 1987 - 5 temporary (seasonal)

Redwood National Park Acquisitions Placed with Local Businesses

Redwood National Park continues its effort to place acquisitions with local firms whenever possible. Purchases in the major categories listed below totaled \$1,017,114 in Fiscal Year 1987.

Cooperative Agreements -	\$ 58,372
Contracts -	378,266
Heavy Equipment Leases -	246,363
BPA's and Other Small Purchases -	287,700
Imprest -	41,669
Total -	\$1,017,114

The summary table of Redwood National Park expenditures for Fiscal Years 1979 through 1987 on the following page first appeared in the Sixth Annual Report to Congress. This table has been modified for the Seventh and all subsequent annual reports to Congress. The column titled "Other" now reflects all major acquisition dollars spent outside the counties of Humboldt and Del Norte.

It is felt that a comparison of the two figures highlight the successful effort to contribute to the economic revival of the two counties. For example, all but approximately 15 percent of the 1984 budget was expended within Humboldt and Del Norte Counties. Deleting the two categories over which there is little or no control (mandatory sources and solicitations where no local bids are received), the amount is further reduced to approximately seven percent.



## HEAVY EQUIPMENT LEASES

-FISCAL YEAR 1987-

<u>PURCHASE ORDER NUMBER 8480-7-</u>	<u>CONTRACTOR</u>	<u>AMOUNT</u>
0107	Twin Parks Lumber Co. Arcata, CA	\$ 7,744.20
0136	Joe Romanini Orick, CA	2,104.00
0178	Twin Parks Lumber Co. Arcata, CA	935.00
0471	Chris Hake Arcata, CA	14,871.50
0472	Twin Parks Lumber Co. Arcata, CA	16,590.61
0509	David Burnson Arcata, CA	15,234.59
0517	Twin Parks Lumber Co. Arcata, CA	12,892.41
0518	Chris Hake Arcata, CA	13,086.25
0520	Twin Parks Lumber Co. Arcata, CA	12,690.48
0549	Twin Parks Lumber Co. Arcata, CA	250.00
0564	Twin Parks Lumber Co. Arcata, CA	8,176.39
0565	Chris Hake Arcata, CA	7,635.00
0566	Twin Parks Lumber Co. Arcata, CA	7,035.20
0582	Chris Hake Arcata, CA	5,774.50
0583	Twin Parks Lumber Co. Arcata, CA	4,309.06

HEAVY EQUIPMENT (cont)

<u>PURCHASE ORDER NUMBER 8480-7-</u>	<u>CONTRACTOR</u>	<u>AMOUNT</u>
0585	David Burnson Arcata, CA	50,736.57
0586	Twin Parks Lumber Co. Arcata, CA	26,436.42
0588	Twin Parks Lumber Co. Arcata, CA	8,582.08
0603	Twin Parks Lumber Co. Arcata, CA	15,393.80
0605	Chris Hake Arcata, CA	15,885.22
		<hr/> <b>TOTAL</b> \$246,363.28 <hr/>

LOCAL SMALL PURCHASES OVER \$1,000  
-FISCAL YEAR 1987-

<u>PURCHASE ORDER NUMBER 8480-7-</u>	<u>VENDOR (CONTRACTOR)</u>	<u>PURCHASE</u>	<u>AMOUNT</u>
0040	Coastal Business System	Annual copier maintenance	\$ 7,440.90
0041	SFS Humboldt Nursery	Seedlings	4,200.00
0044	North Coast Labs	Lab services	4,324.50
0133	Simpson Timber Co.	Redwood and Douglas-fir seedlings	3,024.00
0141	Square Deal Lumber Co.	Pipe - DeMartin water system	2,051.75
0200	George Kurwitz	Level DeMartin house	9,966.04
0217	Janet Eidsness	Cultural resources	4,500.00
0298	Luis Arroyo	Word Perfect class	1,600.00
0311	Rich Well Drilling	Drill well - Requa	9,470.00
0330	Square Deal Lumber Co.	Lumber Clivus Multrum	3,472.09
0372	Square Deal Lumber Co.	Cement mixer	1,310.00
0379	Thrifty Supply	Tools for Salt Creek well	1,893.44
0409	ENMOS	Transducers	1,920.00
0415	Don McMillan	Loader rental	2,000.00
0424	Razur Sharp	Chain saw parts	1,138.62
0434	Keenan Supply	Plumbing supplies - DeMartin House	1,108.06
0437	Simpson Timber Co.	Aerial fire patrol	1,040.54

LOCAL SMALL PURCHASES OVER \$1,000 (continued)

<u>PURCHASE ORDER NUMBER 8480-7-</u>	<u>VENDOR (CONTRACTOR)</u>	<u>PURCHASE</u>	<u>AMOUNT</u>
0458	Miller Rock Products	Sand and gravel DeMartin house	\$ 6,000.00
0470	Walter Waldkirch	Estuary work	8,925.00
0476	Nilsen Feed	Straw-rehab	2,584.00
0488	Roger's Machinery	Pumps - Salt Creek well	1,502.70
0491	Miller Rock	Gravel and sand - Salt Creek well	4,000.00
0499	Bill Wigley	Trenching - DeMartin sewer system	1,520.00
0507	USFS Humboldt Nursery	Douglas-fir seedlings	1,530.00
0510	NCI Communications	Install gas detector, Hdqtrs. furnace	1,750.00
0512	Bill Wigley	Trenching - Salt Creek water system	2,260.00
0536	Roger's Machinery	Pump - DeMartin well	1,572.00
0541	Reliable Hardware	Cadmiu- coated machine bolts	1,380.10
0542	Lake's Well Drilling	Pumps and pressure tank - Salt Creek	1,493.00
0543	James Lindquist	Report on second-growth redwood stands	4,800.00
0547	Coastal Business	Copier supplies - Arcata/Orick	1,328.96
0548	Coastal Business	Copier supplies - Headquarters	1,890.71
0551	Hilfiker Pipe	Septic tank - DeMartin house	1,650.00
0554	McNamara & Peepe Lumber	Pipe - Salt Creek water system	1,113.00

LOCAL SMALL PURCHASES OVER \$1,000 (continued)

<u>PURCHASE ORDER NUMBER 8480-7</u>	<u>VENDOR (CONTRACTOR)</u>	<u>PURCHASE</u>	<u>AMOUNT</u>
0559	Northern Air	Fire patrol	\$ 1,647.10
0560	Simpson Timber	Aerial observation - fir	2,015.17
0577	Joseph Hufford	Drainfield installation-DeMartin Hse	20,140.00
0578	North Coast Paving	Gravel, DeMartin house and Hiouchi	5,467.00
0579	Arcata Lumber	Redwood and Douglas-fir seedlings	7,100.00
0580	Kuebler Furniture	Floor coverings, various locations	6,986.51
0593	Coleman Depositions	Court reporter, EEO case	4,365.20
0599	Jess Campbell	Ceramic floor tile installation - various locations	7,100.00
0600	Hufford Sand and Gravel	Rehab chemical toilet site	5,225.00
0615	Dave Van de Mark	Design historical storage and retrieval system	4,000.00
0663	Advantage Business	Typewriters	1,814.00
0664	Coastal Business Systems	FAX Machine, Arcata	2,121.00
0710	Eureka Redimix	Concrete - SOC	1,875.00
0757	Humboldt County	Study and recommendations - Highway 101 bypass	3,000.00

ALL CONTRACTS  
-FISCAL YEAR 1987-

<u>CONTRACT NUMBER CX-8480-7-</u>	<u>CONTRACTOR</u>	<u>AMOUNT</u>
0001	Orick Community Services Dist. Orick, California	\$147,250.00
0002	North Coast Redwoods Tours Trinidad, California	37,935.01
0003	W. K. Construction Miranda, California	92,244.66
0004	W. K. Construction Orick, California	92,244.66
0005	J. C. Sund Painting Eureka, California	26,951.96
TOTAL		\$378,266.40

ALL COOPERATIVE AGREEMENTS  
-FISCAL YEAR 1987-

<u>COOPERATIVE AGREEMENT NUMBER</u>	<u>PARTICIPATOR</u>	<u>AMOUNT</u>
CA-8480-7-0001	Redwoods United, Inc. Eureka, California	\$ 58,372.00
TOTAL		\$ 58,372.00

SUMMARY OF FY 1987 EXPENDITURES

BLANKET PURCHASE AGREEMENTS.....	\$ 69,468.00
IMPREST FUNDS .....	41,669.00
HEAVY EQUIPMENT RENTAL .....	287,832.00
SMALL PURCHASES .....	431,344.00
CONTRACTS AND AGREEMENTS .....	<u>436,638.00</u>
GRAND TOTAL	\$ 1,266,951.00

STATUS OF BYPASS HIGHWAY AND OF AGREEMENT FOR DONATION OF STATE PARK LANDS

Redwood National Park Bypass Highway

Construction of a \$115 million bypass for U.S. Highway 101 at Prairie Creek advanced successfully through the fourth year of a six year project. Clearing and grubbing along the new highway right-of-way was partially completed by the fall of 1985. The project's major contract for grading and drainage and construction of a 1300-foot bridge, spanning Boyes Creek, was awarded in October 1985 to the Sylmar, California firm of Tutor, Saliba and Perini in the amount of \$64 million. This contract is scheduled for 350 working days, and is considered to be on schedule in all major respects. This alternate route around Prairie Creek Redwoods State Park is intended to separate commercial and pass-through vehicle traffic from park-related motorists using the scenic two-lane route through old-growth forest of the park. Planning and design of the third major phase of highway construction and paving is underway. (Plate 22)

Impacts to fisheries associated with the Highway 101 Bypass project will be partially mitigated by restoration of aquatic habitats in the estuary at the mouth of Redwood Creek. As described in the highway project's Environmental Impact Statement, one of the mitigation efforts will be construction of a controlled-flow diversion culvert through the south levee along lower Redwood Creek. This diversion of creek flow will help restore water circulation to the estuary's south slough and thereby reestablish habitats important to migratory salmon and steelhead trout. This project is being carried out as a cooperative effort of the National Park Service and the California Department of Transportation. The California Department of Transportation obtained rights-of-way for the culverts from the County of Humboldt and one private landowner, and also provided \$635,000 to fund the project.

In July 1987, the U.S. Army Corps of Engineers awarded a contract to fabricate the culvert to J.E. McAmis, Inc. of Chico, California. Completion of the project is anticipated in January 1988. The National Park Service will operate and maintain the culvert.

During 1987, a total of 519,840 gross board feet of raw wood material was delivered to Redwoods United, Incorporated as a result of continued land clearing operations on the U.S. 101 Bypass project. In 1988, an additional small volume of raw wood material is expected to be made available from the bypass construction as a result of final clearing work. To minimize stream damage and sedimentation, several drainage bottoms were left undisturbed during the first four years of construction; those drainages will be cleared and graded during 1988.

TRANSFER OF STATE PARK LANDS

Transfer to federal management of three state parks (Jedediah Smith, Del Norte Coast, and Prairie Creek Redwoods State Parks), which lie within the boundary of Redwood National Park, remained an unresolved issues during

1987. National Park Service Director William Penn Mott, Jr. has publicly given support to this initiative. The proposed transfer would relate only to management and would not include conveyance of fee simple title to the lands involved. This management transfer has remained dormant since 1979, when a written agreement for transfer was signed by the state's Director of Parks and Recreation.

#### STATUS OF THE REDWOOD NATIONAL PARK GENERAL MANAGEMENT PLAN

Reconstruction of the DeMartin House as a hostel was completed in July 1987. The project was a cooperative effort of the National Park Service, the Golden Gate Council of the American Youth Hostels Inc., California Conservation Corps (CCC), the California Coastal Conservancy, and the Humboldt Area Foundation. The hostel is located just north of Klamath, California on U.S. Highway 101 and overlooks the Pacific Ocean at False Klamath Cove. Local CCC members from the Del Norte Center renovated the interior of the structure and added a major extension to the building. The Corps was under contract to the American Youth Hostels, Inc. with grant and loan funding from the Coastal Conservancy and the Humboldt Area Foundation. National Park personnel, with assistance from the CCC, completed the exterior requirements, such as access, parking, a new foundation and utilities. The hostel is operated by the Golden Gate Council of American Youth Hostels, Inc. under a concession permit from the National Park Service. (Plate 21)

The Hiouchi Information Station was officially rededicated in the Spring of 1987. The station had been damaged by fire in late 1985 and was open for business, amidst park carpenters, electricians, and plumbers, during the 1986 visitor season. Construction work was completed and new exhibits installed in early 1987.

A total of 27 miles of horse trail and two campgrounds have been completed on the west side of the Redwood Creek basin. Constructed mostly by volunteers and California Conservation Corps workers, the trails and campgrounds are being implemented in accordance with a Backcountry Trail Plan approved in 1983. Along the Redwood Creek trail, five new foot bridges were constructed to replace failing or blocked culverts, remnants of the trail's past use as a logging haul road. A new overlook of the Tall Trees Grove was also completed on the Redwood Creek Trail. The Tall Trees Trailhead shelter was rehabilitated and planning for relocation of the Tall Trees Grove interpretive loop trail occurred during the year. In conjunction with the trail relocation, new wayside exhibits are being planned.

In the northeast corner of the park, the Little Bald Hills road was rehabilitated and converted to a hiking trail. As anticipated in the General Management Plan, the trail now takes visitors through old-growth redwood forest and up into stands of Jeffrey pine and Idaho fescue grassland growing on serpentine soils. Redwood National Park is evaluating the suitability of this fragile and pristine area for a walk-in campground.

As part of on-going improvements, the Howland Hill Outdoor School received a new kitchen shelter and work was begun on a new self-composting toilet. Work continued on a sediment laboratory at the South Operations Center near Orick. Toilet facilities at Crescent Beach were rehabilitated. The Pozzi farm structures were removed as part of the program to eliminate facilities not needed for park or visitor operations and to restore areas of the park to a natural condition.

Routine updating of management plans occurred during the year, including the Resources Management Plan, Statement for Management, and Land Protection Plan.

At the Requa Maintenance Center, the CCC workers are converting the old Air Force administration building into a training and classroom facility to serve the CCC, National Park Service, and Air Force. Asbestos was removed by contract from two dormitory structures and from some exterior, overhead pipes. A new well, providing potable water was drilled on adjacent private property and connected to the Requa system, solving past problems with sewage infiltrating the old well.

The World War II radar site (on the National Register of Historic Places) received further work to stabilize the structures. New wayside exhibits were completed and installed on the Coastal Drive overlooking the facility. Additional interviews were conducted with members of the original staff who manned the structure during the war.

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