The Redwood National Park: A Conservation Controversy

By

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THESIS

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I. Introduction

Scenic resource problems in the United States involve factions in society who view landscapes from different points of view and for different purposes. Each side develops a set of arguments--some fair, some not--always with its own purpose in mind. These factions can broadly be identified as conservationists who have been stigmatized as "preservationists" of the landscape, and those working to continue traditional economic uses of landscape. These opposing viewpoints may also be described as "landscape conserving" versus "landscape converting," and both would claim the title of conservationist. Landscape converters are concerned with exploiting renewable resources so they remain renewable and frugally using non-renewable resources. In the sense conservation means "wise use," this faction may be described as "conservationist." However, in the generally connoted sense of the word, "conservationist" means "preservationist." Sierra Club members are "conservationists" but persons within the Soil Conservation Service are not. In this thesis "conservationist" is synonymous with "preservationist."

Often within this great dichotomy of use versus preservation other subdivisions of viewpoints appear on one side or the other. In a complex situation such as the Redwood National Park controversy, the conditions are ripe for this further splintering in purpose.

In an affluent society such as ours, decisions concerning land use and resource allocation show the appreciation of the "non-utilitarian" or "aesthetic" resource. The emergence of powerful conservation organizations attests to this fact. Yet as conditions become more crowded,

as populations grow and economies expand, and as resources begin to be used more fully, the decision-making processes concerning resources become more complex and more controversial. No longer do the simple economic criteria suffice because other elements, non-economic in nature, have emerged. Thus, how to decide questions involving resource allocation become more difficult.

With these thoughts in mind, this thesis analyzes the arguments of the Redwood National Park controversy. Specifically this means magnitude of the redwood resource, the North Coast timber resource, and the effects of park establishment on local taxes, on employment, and on the state of the industry. The idea behind this analysis is not to determine the objective truth, but to reveal the degree of objectivity or subjectivity in the arguments, (i.e., how much the positions are self-serving). It becomes apparent that different attitudes and values are the basis for disagreement about park establishment. The search for unbiased answers to the arguments and the quest for an objective solution to the controversy is fruitless. Consequently, doubt is cast upon the whole approach of fact-finding as a means of resolving such questions.

A discussion concerning the division among the conservationists and the difficulty in selecting a park site follows the analysis of the arguments. This includes, in part, a statement concerning purposes of national parks as suggested by law and tradition.

And finally, a brief account is given of other parties concerned with park establishment or who otherwise are drawn into the controversy. These minor groups come in because of differing purposes but all pressing in on an increasingly scarce resource.

The appropriateness of such a study in geography may not be readily apparent. Geographical investigations in the past have ignored conservation questions for one reason or another. Yet a discipline whose focus is the character of the land and man's use of it can no longer afford a detached eye. Increasingly, the conservation movement is emerging as one of the influential forces shaping the American landscape. As such, geographers must study and understand its mechanisms and effects on the land.

II. The Regional Setting

The northwest corner of California, comprising Humboldt and Del Norte Counties, forms the heart of the redwood country. (See Plate 1) It is here that the finest stands of redwood (Sequoia sempervirens) old growth exist.[1] Consequently both the most magnificent state redwood parks and the greatest redwood logging occur in these counties. It is forest country and in this respect is unlike much of California. In fact, in many ways the north coast is different from the rest of the state and may even be considered alien to the "image of California."[2]

The north coast receives more precipitation than the rest of the state, yet rainless summers make it Mediterranean in character and in classification. Precipitation approximates forty inches generally, and on slopes with orographic uplift annual rainfall may exceed twice that amount. Eureka has an average rainfall of thirty-nine inches and Crescent City has seventy-four inches, due to its more direct exposure to the southerly storm winds. Although snowfall is not unknown along the coast it is unusual. Both cities have average January temperatures near that of San Francisco (46 to 50 degrees F.).

Midsummer is essentially rainless. The summer months are marked by advection fog, from the Pacific. Restricted to the immediate coast and

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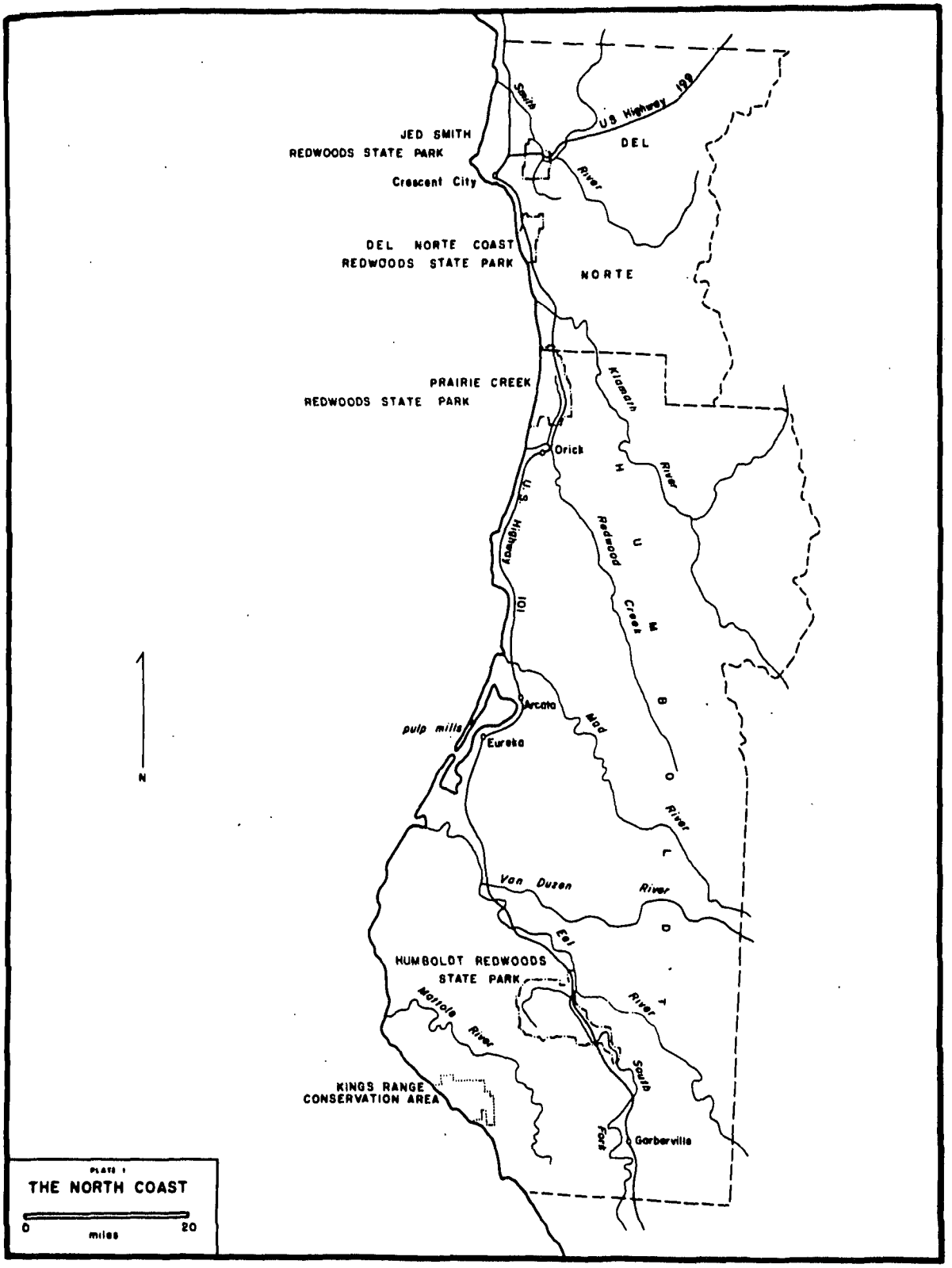
[1] Old growth refers to forests in a virgin condition or trees left standing in a partially-logged virgin forest ("residual" trees). See glossary.

[2] See Herbert M. Eder, The Geographical Uniqueness of California's North Coast Counties: Humboldt and Del Norte, Ph.D. Dissertation, Univ. of California at Los Angeles, 1963.


JED SMITH
REDWOODS STATE PARK
Crescent City
DEL NORTE COAST
REDWOODS STATE PARK
PRAIRIE CREEK
REDWOODS STATE PARK
Orick
Arcata
pulp mills
Eureka
HUMBOLDT REDWOODS
STATE PARK
KINGS RANGE
CONSERVATION AREA
Garberville
Smith
River
U.S. Highway 199
DEL
NORTE
Klamath
River
U.S. Highway 101
Redwood Creek
HUMBOLDT
Mad
River
Van Duzen
River
Eel
River
Mattole
River
South
Fork
N
PLATE 1
THE NORTH COAST
0
miles
20

to valleys opening to the ocean, the fog maintains high air humidity with low temperatures. Eureka is said to be the coolest city in the United States during the month of July.

The redwood is a tree which requires a moist moderate climate. The central and northern California coast provides this setting; during the rainless summers the onshore flow of cool moist air reduces evapotranspiration making redwood survival possible. Moreover, only soils with a high water-holding capacity will support redwood during the period of annual drought. Redwoods do not grow in the very wet Mattole River drainage because of soils which dry out excessively in the summer months.[3] (See Plate 1)

Rivers entering the Pacific from the north coast ranges carry over one-third of California's yearly runoff. The Klamath discharges about thirteen million acre feet in the average year. Compare this to the five million acre feet of the Sierra Nevada's largest river, the Feather. The Eel, with over six million acre feet, falls behind only the Sacramento, the San Joaquin (at Stockton) and the Klamath in ranking of California rivers.

Floods are common on the north coast streams; those in 1955 and 1964 were particularly noteworthy. The Eel is unique for a large California river in that little snowpack feeds it during the summer. Accordingly, the Eel's flow fluctuates widely between winter high water and summer low water conditions.

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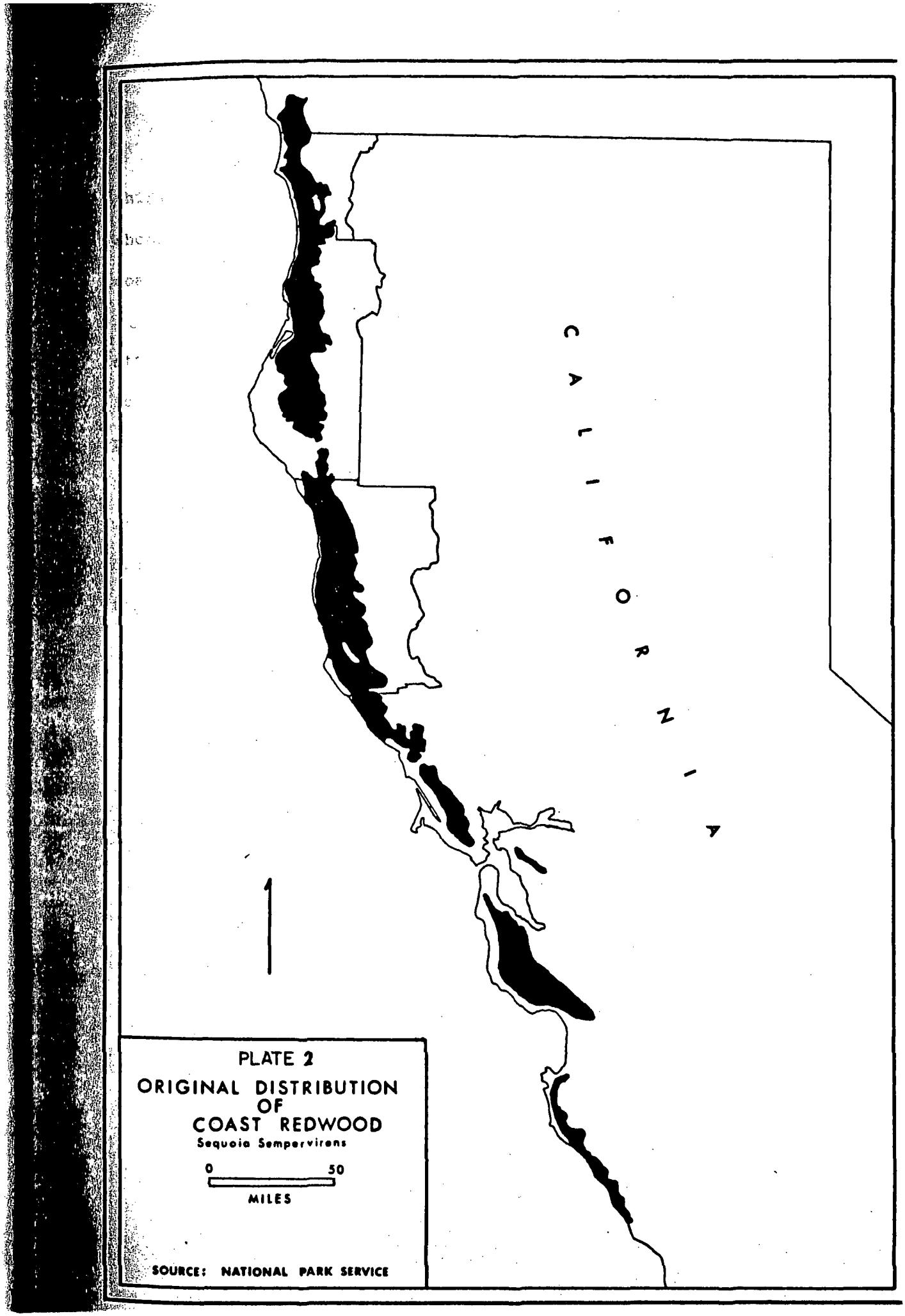
[3] See D. W. Cooper, The Coast Redwood and Its Ecology, Eureka: Univ. of California Agricultural Extension Service, 1965, 21 pp.

The terrain along the north coast is largely mountainous. Granitic and metamorphic rock makes up the Klamath Mountins inland from the Del Norte coast. Sedimentary formations compose the Coast Ranges from Humboldt County southward. Rivers originating within these mountains are confined to canyon courses through their entire lengths. There is little flat alluvial bottomland except the Humboldt Bay Plain and a smaller area at the mouth of the Smith River near Crescent City.

Vegetation is forest with redwood dominant along the coast and Douglas fir (Pseudotsuga menziesii) inland. East of the main ridges, ponderosa pine becomes common. Non-forested areas are scattered in the region with grasslands along the ridgetops and chaparral dispersed throughout.

Settlement on the north coast was late compared to the rest of California, with occupation beginning in the middle of the nineteenth century and being primarily by Americans. Population growth has not been as steady as that of California as a whole. (See Figure 1) The large growth in the two decades between 1940 and 1960 is apparently finished, and a more static pattern has been realized from 1960 to 1965. Both growth and stability in population have resulted from growth and stagnation in the timber industries.

Today the north coast remains an isolated corner of the state with an industry based primarily on the extractive resource, timber. Dairy farming, beef and sheep ranching, truck crops, and nursery stock make agriculture second in importance. These plant-oriented activities are largely restricted to the better bottomlands, with grazing in the hill and mountain lands. Tourism and convention activities constitute the


CALIFORNIA
PLATE 2
ORIGINAL DISTRIBUTION
OF
COAST REDWOOD
Sequoia Sempervirens
0
50
MILES
SOURCE: NATIONAL PARK SERVICE

third largest component of the economy. Cold mineralized waters offshore support a rich commercial ocean fishery and the free-flowing north coast rivers, particularly the Klamath, support large runs of salmon.

It is the trees, however, which have made the region economically attractive and which bring in so many tourists each summer season. It is trees which generate the inflow of outside dollars, that make its products unique to the world, and which prompt visitors to ask, "are they still cutting these giants?" And, it is trees which have generated so much heat, so much propaganda, and especially so much verbal controversy over the last few years. Thus to the timber industry we first shall turn.

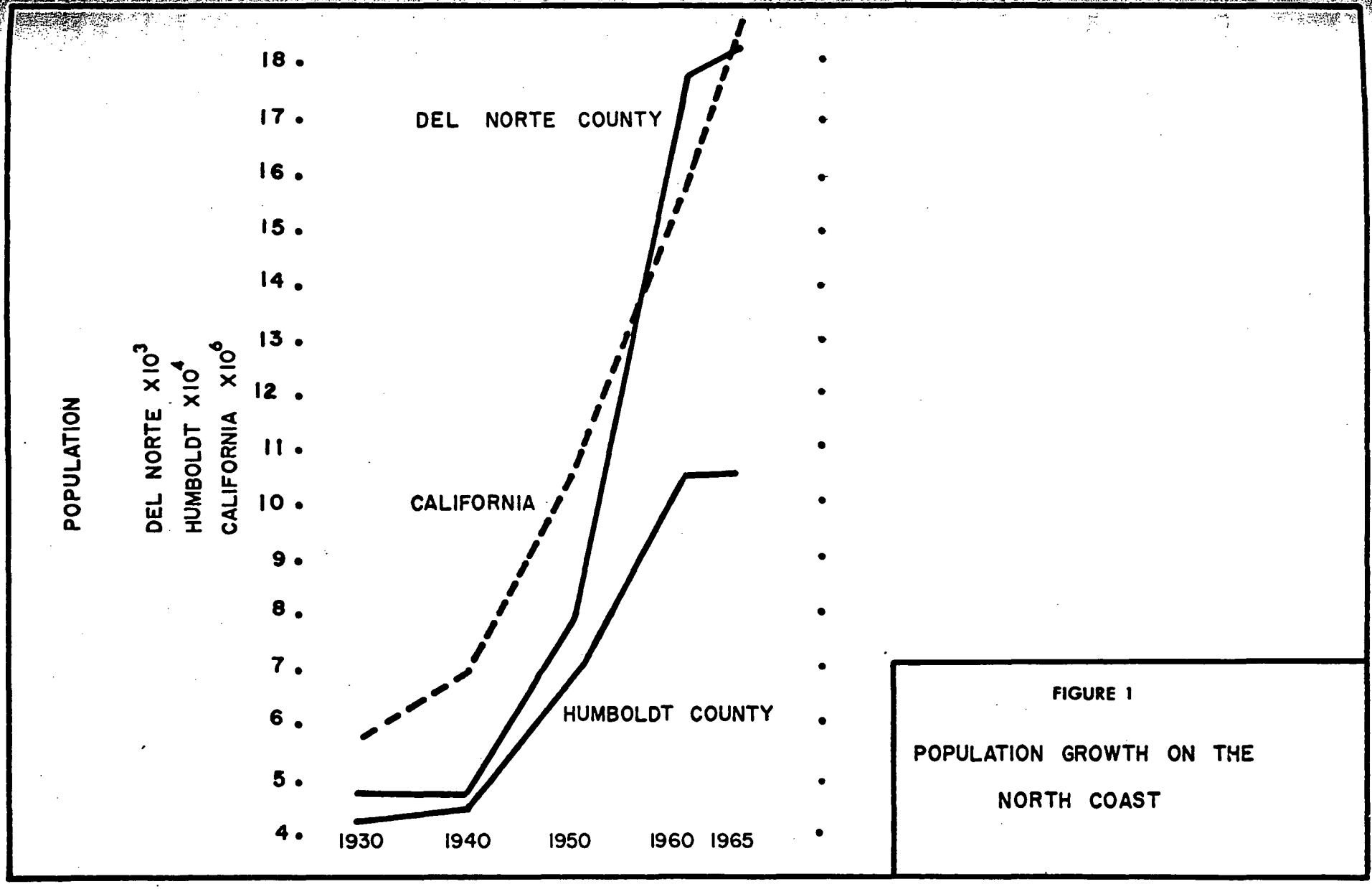


FIGURE 1

POPULATION GROWTH ON THE NORTH COAST

III. The Forest Products Industry

Lumber manufacture began on Humboldt Bay in 1851. Its growth followed the depletion of more readily available timber closer to San Francisco, such as the forests in the Berkeley Hills and on the bay slopes of the peninsula south of the city. Concentrated at first along the margins of Humboldt Bay in easily accessible redwood stands, the early north coast operations sent lumber south via ship to San Francisco. An irregular, but consistently upward trend in lumber production continued until 1920. (See Figure 2) Essentially all of this early production was redwood, and exclusively in lumber products. A stagnation in the production was realized from the twenties until 1945; during this period "industrial expansion virtually ceased."[1]

The postwar boom in production of California lumber was the result of several factors, one of which was a dramatic increase in demand. Another was the gradual depletion of old growth Douglas fir in the Pacific Northwest. The industry found the untapped virgin forests of north coastal California very inviting, and lumber production in Humboldt County soared during the postwar period.

Douglas fir emerged into the market at this time on the north coast, and it was this species, not redwood, which was responsible for the boom in production. Previously considered an undesirable weed tree in the region, Douglas fir became the most important lumber species in the two-county area. The large stands of this tree lay to the east of the more

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[1] Henry Vaux, "Timber in Humboldt County," California Agricultural Experiment Station Bulletin 748, (1955), p. 8.

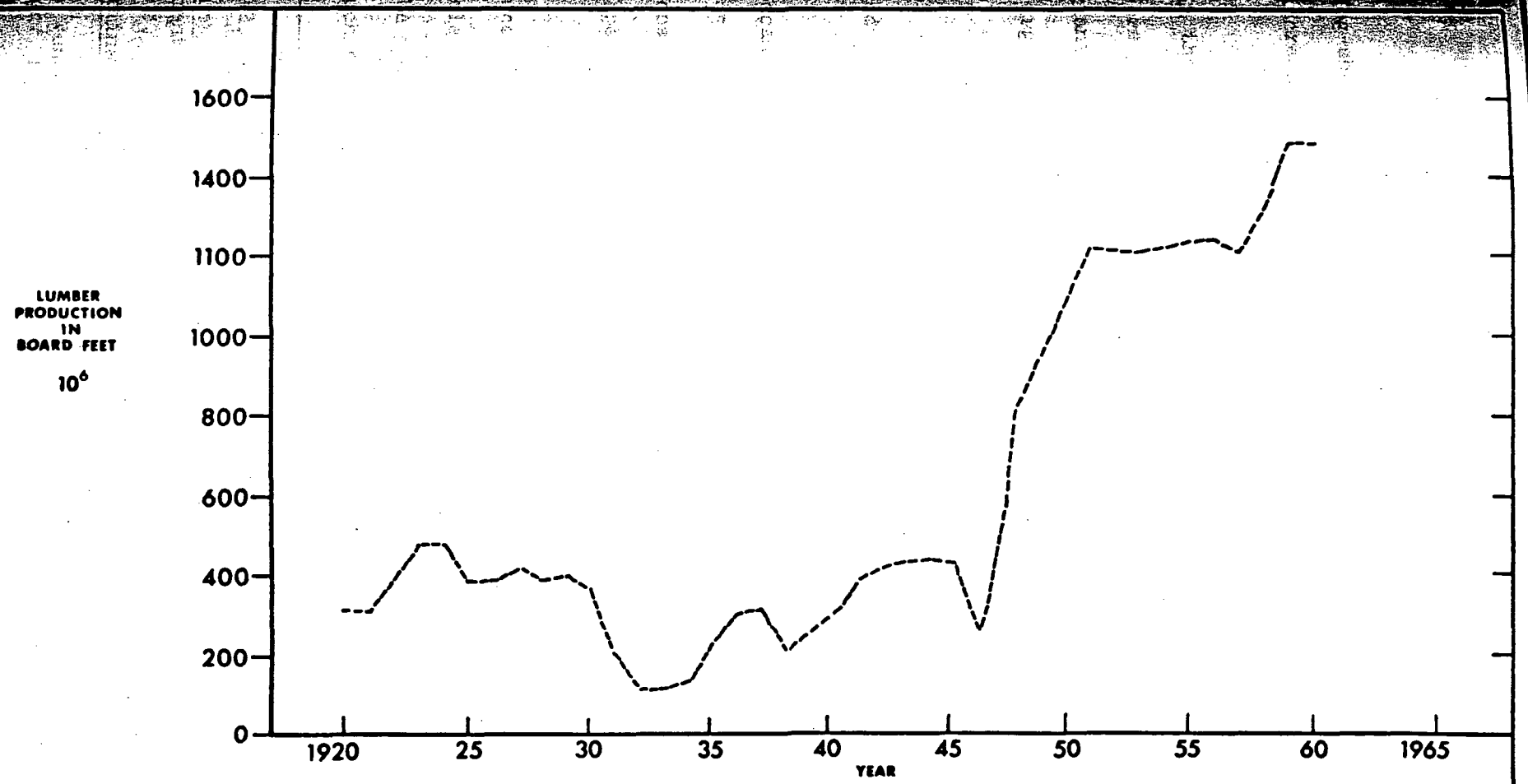

FIGURE 2

LUMBER PRODUCTION IN HUMBOLDT COUNTY

fog-shrouded redwood belt, and it was on this region that the great increases in timber cut occurred.

Associated with this expansion in lumber production was an increase in the number of sawmills in the north coast region. These new mills were primarily small to medium-sized in comparison with the relative giant mills of companies such as Pacific Lumber and Simpson Lumber; they largely depended upon purchase of stumpage from small timber owners.[2] "A lot of this expansion in lumber production was based on heavy cutting of small and medium Douglas fir properties, and some small and medium redwood properties."[3]

It was also during the postwar lumber boom that plywood production became established in the region. The first year of output was 1947; by 1955 there were four plywood plants in Humboldt County with an annual capacity of 240 million square feet, and five veneer plants with an annual capacity of 360 million square feet.[4]

In addition to lumber and plywood, the north coast region has produced minor wood products such as shingles, shakes, redwood split products, poles, and pilings. Output of these items has remained very small through the years, and the trend of production has generally been downward. Today such specialized wood products are unimportant in the total picture.

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[2] John Zivnuska, et al, The Commercial Forest Resources and Forest Products Industries of California, Berkeley: California Agricultural Experiment Station Extension Service, 1965, p. 50.

[3] John Zivnuska, "The North Coast Timber Economy in 1975," Forestry Seminar Series (Fall, 1964), p. 9.

[4] Veneer is the wood product produced by cutting thin strips around a log. See glossary.

The boom in lumber ended in the early fifties, and the following ten years were marked by declining mardet demand.[5] The year 1959 saw the peak in lumber production in California as well as on the north coast, although production remained high for several years following. Sharp contraction of the forest products industry was followed by economic distress in such lumber-oriented counties as Humboldt and Del Norte. Many smaller operators went out of business and low profits or losses were common in lumber manufacturing concerns. The bulk of this reduction came from small and medium holders; the large industrial ownerships were not so severely affected.[6] The general depressed state of the forest products industry in the north coastal region has continued with a downward trend in production and employment since 1959.

The current large export of second growth redwood logs to Japan should act against the recent downward trends. But figures on industry employment show continued decreases with no signs of reversal. (See Figure 9)

Future Course of Development of the North Coast

The future course of economic development in the north coast region's forest industries has been studied by several persons, and recent interest in the Redwood National Park has been a stimulus to such attempts to peer into processes of change.

Without doubt there is going to be a reduction in the rate of cutting

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[5] Zivnuska, et. al., op. cit., p. 42.

[6] Zivnuska, op. cit., p. 10.

of standing timber and in the production of wood products. The Miles' report on Humboldt County timber states "a reduction of about 30% in the total annual cut, all sources, is expected to occur during the next ten years."[7] He indicates this will mean a reduction from the 1966 cut of 1280 million board feet to 900 million in 1975 and to 750 million by 1985; continuous cutting at 750 million board feet would then be possible to 1995 and beyond. (See Figure 3)

Zivnuska says that while the rest of California will be able to maintain its cut at about the peak levels reached in 1958-1960, "in the north coast the outlook is for a reduction in cut amounting to about 20% of the 1958-1960 levels."[8] This would be in the year 1975, and if Humboldt County were to experience this amount of decrease, the 1975 production would be about 1200 board feet. This is much higher cut than that predicted by Miles; one could suggest a greater percentage decrease in cut in Humboldt County than the north coast as a whole or conclude the reports are basically contradictory.

The Arthur D. Little report dated April, 1967 moderately suggests a 1975 Humboldt County cut of one billion board feet.[9]

The North Coast Timber Association relates that the four major Humboldt County lumber companies expect to reduce their cut, collectively by twenty-five percent from the 1960-1964 level in 1975. After that, they predict an increase in cutting levels.[10]

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[7] John Miles, "Miles Report on Humboldt Timber," The Humboldt Beacon, March 10, 1966.

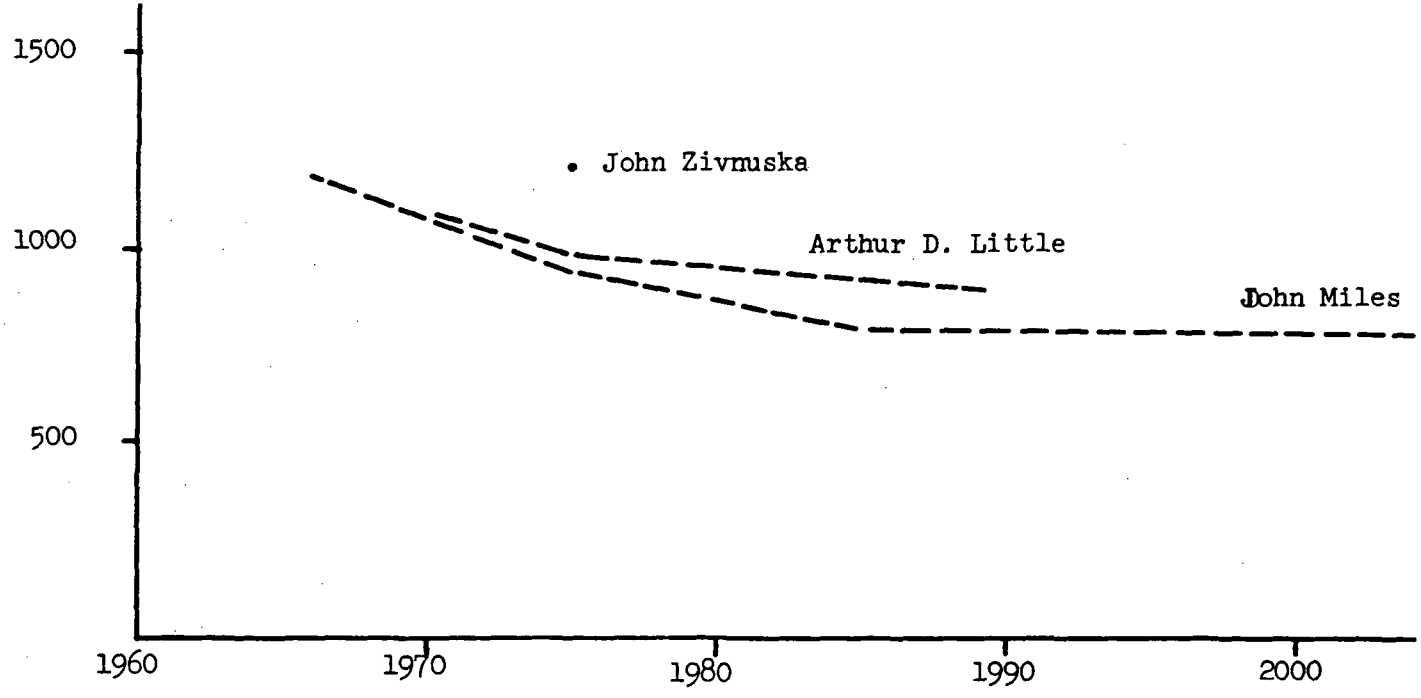
[8] Zivnuska, op. cit., p. 9.

[9] Arthur D. Little, Inc., The Economic Impact of Possible Additions to a Redwood National Park in Humboldt County. San Francisco: Arthur D. Little, Inc., 1967, p. 27.

[10] See Landenberger's testimony at the Senate Subcommittee hearings, Wash., D.C., August, 1966.

Figure 3

Timber Cut Predictions for Humboldt County



Whatever the exact reduction in the cut, there is consensus that a significant reduction will occur; this will happen whether or not a national park is established. One must question the appropriateness of arguments that a national park will hinder or prevent normal operations and development in the forest industries. The experts do not agree on the extent of production decline to be experienced by 1975, much less beyond that date.

One aspect related to this discussion of total cut is the type of ownership from which the cut originates. Zivnuska suggests the drop in the north coast timber cut will come entirely out of the small and medium-sized properties, and the large industrial holdings will continue to increase the magnitude of their cut through at least 1975.[11] This is implausible because the six largest lumber companies of Humboldt County account for the bulk of the total timber cut. The argument that Zivnuska may have included Mendocino County has no substance, because its cut should increase rather than decrease, as its relatively early-cut forests reach second growth size suitable for relogging. Also recall that the four major Humboldt County companies themselves predict (p. 14) a decrease in their cut by 1975.

Historically there has been a regular sequence of production in forest industry areas in the United States. This has involved a change from an entirely lumber producing economy early, when large trees in virgin forests were abundant, to a more diversified production based on

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[11] Zivnuska, op. cit., p. 10.

smaller growth. In later stages, wood fiber is used in various products and the economy is said to be "pulp-oriented." In the more recently developed forest industries of the western United States, this pattern of the pulp and paper industry following "in the wake of a large and well-established lumber industry" seems to be occurring.[12]

Such a sequence is a function of the exhaustion of older, larger trees and the subsequent dependence upon younger, smaller stumpage. Timber is more efficiently utilized by the pulping industry than by lumber producers. The increasing markets for pulp products and the less favorable outlook for lumber enforces the trend.

Kreager emphasizes this development sequence and cites Everett, Washington, as an example of an area in which such diversification has occurred. Not based on trees cut for pulp alone, Everett depends upon residues from lumber production for wood fiber. And, Kreager insists, "it is no longer feasible in economic terms to operate a forest economy based solely on pulp."[13] Thus, production of lumber or plywood or both from all logs suitable for these products is an essential component of a pulp-oriented economy.

Eugene, in Lane County, Oregon, is cited by Kreager as the current world's center of lumber production, and this area is now undergoing the transition to a pulp-oriented industry. Kreager says Eugene is about ten years ahead of a similar changeover period in Humboldt County.[14]

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[12] John Guthrie and George Armstrong. Western Forest Industry: An Economic Outlook, Baltimore: John Hopkins Press, 1961, p. 100.

[13] Dewayne Kreager. Economic Factors Related to Redwood Park Proposals, Eureka: Greater Eureka Chamber of Commerce, 1966, p. 12.

[14] Ibid. p. 13.

Guthrie and Armstrong concur with this general process. Their analysis, while not mentioning California's north coast specifically, does suggest that the pulp and paper industry will continue to grow in areas where there exists a large and well-established lumber industry. The pulp industry has grown steadily--more than 700% growth in the United States since 1920--while the lumber industry has been nearly stagnant. Indications are that the patterns will continue. Guthrie and Armstrong attribute this to the capture of new markets by the pulp industries, something which is expected to continue, perhaps at a reduced rate. The authors go on to predict the greatest relative increases in pulp production in California, Montana, and Idaho, for in these states there are comparatively large lumber industries, with very little pulp activity as of 1959.[15] Humboldt and Del Norte Counties fit well into the general description of a region soon to realize an increase in the pulp industry.

This trend has actually begun in Humboldt County with two pulp mills now operating, each having a capacity of five hundred tons daily. The first such mill to open is operated by Georgia-Pacific; the second, built jointly by Simpson Lumber and Crown Zellerbach, was completed in late 1966. (See Plate 1) Guthrie and Armstrong suggest the combined capacity of one thousand tons is one-sixth the total possible output of all of northern California (coastal and interior).[16]

These pulp plants depend largely on mill residues, but for the county as a whole such dependence is a recent development. California's

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[15] Guthrie and Armstrong, op. cit., pp. 201.

[16] Ibid. Pp. 217-218.

cut of pulpwood has actually decreased since the middle fifties yet the state's pulp production has increased. Humboldt County's two pulp mills have been in operation only the last few years so their use of residues is consistent with current trends. Guthrie and Armstrong claim that mill residue supplies two-fifths of all pulpwood volume now used in the Western United States, and this proportion will increase by 1975.[17]

Kreager predicts by 1990 Humboldt and Del Norte Counties will have three times the pulp or other wood fiber processing capacity they had at the end of 1966.[18] Such a capacity would be three thousand tons or about one-half the maximum foreseen by Guthrie and Armstrong.

Zivnuska sees less promise of a bright timber products future on the north coast.[19] His report suggests a concentration of certain plants near markets due to high transportation costs of the products; this would apparently include such things as furniture and prefabricated forms. Traditionally these establishments are not located in raw material areas, such as north coastal California. Zuvnuska suggests residue-based industries other than pulp and paper (e.g., hardboard and particle board) will not come into the northern redwood region in a significant way. This is due to isolation from large markets, and from a hold on the northern California market by Masonite Corporation of Ukiah. Weyerhaeuser does operate a particle board plant in Humboldt County, but it is the only such

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[17] Ibid. P. 219.

[18] Kreager, op. cit., p. 14.

[19] Zivnuska, op. cit. (Does this suggest that Kreager is even more optimistic than apparently optimistic Zivnuska?)

facility in the area.

Further expansion of pulping on the north coast is foreseen by Zivnuska, probably by established companies. But, and this seems to be delivered as a warning, the entire economic situation will determine the degree and location of new facilities, and the mere availability of raw material is not sufficient to warrant optimism.[20] Zivnuska sees the south part of the north coast area as the likely location for pulp expansion. Although no specific sites are mentioned, he implies either Eureka or Fort Bragg, and in the latter case little direct benefit to the Eureka-Crescent City economies would result.

Whatever the degree of diversification of the forest products industry, it seems likely such activity will take place. It is also apparent that the lumber industry specifically will undergo a very sizeable decrease in production. If these two opposing tendencies will strike a balance in terms of employment or in dollars is unclear. Most studies indicate a drop in total timber industry employment,[21] but Kreager's analysis does not.[22]

The Arthur D. Little report on the Mendocino County economy suggests large difficulties in getting a pulping mill established in that county and goes on to hint that less efficiency in the forest industry might be desirable in terms of the local economy.[23]

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[20] Ibid. P. 14.

[21] See the chapter on employment in this thesis.

[22] Kreager, op. cit., p. 14.

[23] Arthur D. Little, Inc. Economic Report for Mendocino County, San Francisco: Arthur D. Little, Inc., 1965, p. 74. (See also D. B. Luten's radio commentary on station KPFA, December 15, 1964, in which it is suggested less efficiency in an economic activity is desirable from the local viewpoint. Copies of commentary may be obtained from KPFA in Berkeley.)

The report also says:

> "...where local capital is concerned, investment in service activities associated with the scenic values of the forest such as recreation, sanitaria, residential schools, etc., can yield a higher return than investment in pulpproduction per dollar of investment and per cubic foot of lumber taken out of production."[24]

Whether these conditions are similar for the north coast is not stated; certainly, in terms of the establishment of pulping facilities the Humboldt County site appears more advantageous.

It might be pointed out that the dependence of the local pulp industry on residues from lumber and/or plywood manufacture means that the former activity will be impaired by creation of a national park to the degree that the latter is also diminished. As has been indicated, the production of whole wood products is destined to be stabilized at some reduced level with or without a park, so that the pulp industry would be limited to a level determined by the lumber-plywood industries.

Nonetheless a withdrawal from commerical utilization will affect the supply of raw material. The loss of standing timber to a park has been estimated by various sources, and in most park proposals it is a substantial fraction of the commercially available timber. (See Table 1)

In addition to present timber supplies a park would remove lands from production of young growth. This loss has been estimated by Kreager, who says the annual production of timber on twenty-two thousand acres of the proposed park land in Del Norte County might be 19.8 million board feet annually.[25] Although Becking takes issue with this value of the

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[24] Ibid. P. 75.

[25] Kreager's statement at the Senate Subcommittee Hearings, April, 1967.

Table 1

Effect of Park Establishment on Commercial Old Growth Volumes

	Park Proposal	Volume of Commercial Old Growth Timber to be Protected	Percent of County Commercial Timber Volume
Humboldt County	Redwood Creek 17,462 acres	590 million bd. ft.	3%
	Redwood Creek 53,600 acres	2,200 million bd. ft.	10%
	Redwood Creek 90,000 acres	2,600 million bd. ft.	13%
Del Norte County	Mill Creek 43,000 acres	1,100 million bd. ft.	9%

annual increment, it is a reasonable estimate according to Lindquist and Palley.[26] It should be noted, however, that poor forest land can never reach such growth rates and medium sites may require four decades to do so. But top locations might realize twice this growth with twenty year old trees.

The annual production loss estimate of twenty million board feet is about one-half the loss predicted for the Mill Creek park by Arthur D. Little. Twenty million board feet represents about six percent of the current cutting rate for Del Norte County (350 million board feet); twenty million board feet probably would be a larger proportion of the sustained yield cut, although of the same order of magnitude.

Considering that Humboldt County has about 1.1 million acres of coniferous forest land, applying an annual growth rate of nine-hundred board feet per acre per year, a county-wide increment of about nine-hundred million board feet might be realized. This is of the proper order of magnitude for the estimates of the county sustained yield level of timber production.[27]

The loss of sixty thousand acres to a Humboldt County park may represent, at the previously mentioned growth rate, about fifty million board feet annually. This is approximately the same percentage of the county cut that is suggested for Del Norte County's park proposal. (See Table 2)

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[26]James Lindquist and Marshall Palley. "Empirical Yield Tables for Young Growth Redwood," California Agricultural Experiment Station Bulletin 796, August, 1963, 47 pp.

[27]Nine hundred board feet per acre per year is Kreager's value that is substantiated by Lindquist and Palley. Sustained yield is the level of production which can be maintained indefinitely into the future without depletion of the timber supply; this is the same as saying annual cut equals annua growth.

Table 2

Effect of Park Establishment on Sustained-Yield Rates

Park Proposal and County	Current County Cut Rate	Future County Sustained-Yield Rate	Estimated Loss of Annual Cut Due to Park Establishment	Percent of Estimated Sustained-Yield Rate Lost to Park Establishment
Mill Creek (Del Norte County) 43,000 acres	350 million bd. ft.	?	19.8 million bd. ft.	more than 6%
Redwood Creek (Humboldt County) 90,000 acres	1,200 million bd. ft. (1960)	900 million bd. ft.	50 million bd. ft.	about 5.5%

In each county, a significant amount of the potential timber presumably available on a sustained yield basis would be lost to the park. Perhaps it is fair to say the more serious hindrance to the timber industry, as a whole, would not be the loss of virgin old growth forests (which would be lost in a decade or two in any event) but the loss of forest land which could annually produce significant volumes of young growth. The bulk of proposed park lands are virgin timber areas, and these can contribute nothing to second growth sustained yield programs in this century. This reveals that the industry's primary concern is its short-range returns.

Individual Companies

Any individual company would be hampered by national park establishment if a large portion of its timberland was purchased for park purposes. A large park on Redwood Creek would take virtually all lands and timber of Arcata Redwood Company, and a Mill Creek park would do similar harm to Miller-Rellim. All park antagonists insist that park establishment would close one or the other of the companies mentioned above; which one would be determined by the park plan adopted.

It is implied by industry spokesmen that no large company could continue operations on purchased stumpage. But with funds received from the government for land and timber sales, a company such as Arcata Redwood should be able to purchase logs on the market and continue production. Many small mills do so at the present time. However, the National Park Service says the current excess of mill capacity to timber supply makes stumpage purchases difficult for large lumber producers. To overcome

this problem the Federal Government plans to increase the Six Rivers National Forest cut in order to support companies like Miller-Rellim.

If a fair market value is offered a company for its holdings of timber and land, that company should be as willing to sell to provide for a national park as to produce lumber. Industry reluctance to sell for a park indicates timber is worth more as lumber. Prices determined by assessment values may be artificially low, and a free market in timber may not exist.

One other point about individual companies should be raised. Fred Landenberger has stated that the seven largest timber owners in the redwood region cut 658 million board feet in 1965, and of this total they sold 244 million board feet to smaller mills. The Federal administration proposal for a park might affect fifteen mills, according to Landenberger.[28] The two-pronged argument presented by the groups against the park is that not only will the large timber owners be hurt but also those smaller mill operators who purchase timber will suffer.

John Miles' report to the Technical Subcommittee of the Humboldt County Forestry Committee (dated July 15, 1963) suggests 740 million of the total annual county cut of about 1.5 billion board feet is accounted for by the six largest companies (not named) in the county. Miles continues "the average life of these concerns, based on old growth alone, is at least 25 years."[29] In another report, Miles uses the major companies'

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[28] See Landenberger's statement in the Senate Subcommittee Hearings, April, 1967.

[29] Minutes of the Meeting of the Humboldt County Forestry Committee, July 15. 1963.

collective capacity projected into the future and their collective holdings of old growth timber being consumed to satisfy that capacity. This gives a life span of about the magnitude he suggests above.[30]

By reading Figure 4 one concludes the smaller companies dependent on purchases of timber from the large owners will be closed by a lack of raw materials because the large operators will hold onto their timber for their own future needs. If the large companies do not do this they will not maintain a two-decade supply for themselves. The alternative is for the larger holders to reduce their production; this is the course-predicted by Miles and others.

As far as the impact on local communities, it would make little difference which company or companies were hurt by a cutback in production. In any case, jobs and personal income would be curtailed. It should be advantageous for the smallest and most inefficient operators to continue if preservation of jobs is deemed the desired purpose. No one has suggested that Arcata Redwood or Miller-Rellim be closed down and their timber sold to small mills in order to help the local employment situation.

In general the future course of events in the north coast timber economy is obscure. Whether a new era of prosperity through a diversified wood-products industry is just dawning, or the following statement by John Zivnuska will prove correct is a moot point:

> "...the outlook for market expansion suggests that there are not any really golden opportunities from the standpoint of the people in the forest products end of things...Nothing suggests a return to the happy days of 1947 to 1952."[31]

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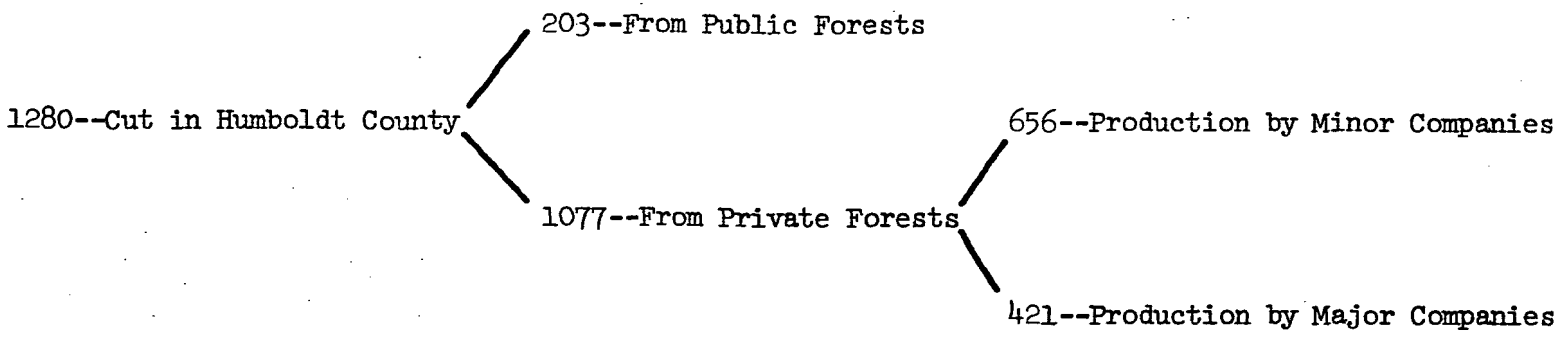
[30] Miles, op. cit.

[31] Zivnuska, op. cit., p. 13.

Company Life and Timber Cut Rates
(All figures in thousands of board feet.)



1. The major companies own 3/4 of the mature and residual timber and 1/2 of the salvage volume.

2. Total timber volume of the major concerns amounting to 10 billion board feet would give those companies an average life of 21 years, as Miles suggests.

3. But the major companies cut more timber than that needed for their own production and this is sold to the minor companies.

4. Thus, in the immediate future:

   a. The major companies must refuse to cut and sell to the minor companies in order to maintain timber for their own production in the future; the minor companies would be forced out of business.

   or

   b. The major companies will maintain present cut rates and they will not have a supply of timber for their own production for 21 years.

   or

   c. Production in general will be curtailed by major and by minor companies.

Protagonists and antagonists alike use interpretations of the future which best suit their own purposes. Park supporters say quite correctly that the large old growth will soon be gone whether or not a park is established. However, they fail to point out the large annual tree growth from potential park lands because such an admission would work against their interests. On the other hand, the industry bemoans loss of timber as a threat to their long-term welfare, whereas land is the primary resource for the industry's future.

Economics and prognostications of the future are produced by both sides in the park controversy, but what is portrayed as absolute truth in each case can always be disputed. The enlightenment of such argument to the solution of the controversy is deceiving and frustrating.

The Redwood National Park Controversy has generated allegations that conservationists fear the redwood may become extinct if logging continues unimpeded. The source of this is unclear, and no conservation groups have directly expressed this feeling. The Sierra Club book, The Last Redwoods has been offered as such a source. Yet the book's concern is with virgin stands of redwood and not with the tree as a species. In rebuttal it has been suggested the timber interests may have erected a straw man to be easily blown down.

IV. Magnitude of California's Redwood Resource

Estimates of the total remaining old growth redwood in California are firmly established. The 1964 professional report on the redwood by the National Park Service suggests sixteen and one-half billion board feet of commercial old growth redwood remained in 1963. Of this only fourteen and one-half billion was considered held by "conservatively managed private 'forestry' ownership," the rest in public or small and "unstable" private lands.[1] (See Table 3) Judging from the Park Service map showing virgin timber, most of this is in Humboldt and Del Norte Counties although some is indicated in northern Mendocino County.[2] (See Plate 3) The volume figure used in this report agrees essentially with the John Miles report to the National Park Service of December, 1963.[3] The Miles' study was evidently used in compiling the professional report.

Frank and Dean Solinsky, Inc., derived a value of thirteen and one-half billion board feet of commercially-available old growth redwood in California. This includes about twelve billion in private hands and the rest in public forests available for cutting.[4] These figures were used by the American Forestry Association--a front organization for forest products corporations--in their analysis of the Redwood National Park,

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[1] U.S. Department of the Interior. National Park Service, The Redwoods, Washington, 1964, pp. 22-23.

[2] Ibid. Map facing p. 35.

[3] John Miles, The Effect of Commercial Operations on the Future of the Coast Redwood Forest, Eureka: John Miles, 1963, p. 30.

[4] Frank and Dean Solinsky, Inc., "Redwood Volumes and Acres," Journal of Forestry 71, March, 1965, pp. 204-205.

Table 3

Remaining Old Growth Redwood Volume in Commercial Forests of California

(All figures are in billions of board feet.)

Source	Ownership Classification		Total
National Park Service [a] 1964	"conservatively-managed" private forestry ownership 14.5	public and unstable private 2.0	16.5
Frank and Dean Solinsky, Inc. [b] 1965	private 11.9	public 1.5	13.4

a) U. S. Department of the Interior, National Park Service, The Redwoods, Washington: 1964. p. 23.

b) Frank and Dean Solinsky, Inc., "Redwood Volumes and Acres," Journal of Forestry, 71 (March, 1965), pp. 204-205.

Note: The Solinsky numbers may represent a later year (1965) than those of the National Park Service (1964). One year's cutting would reduce the old growth volume figure and account for some of the difference between the two reports. However, the volume of redwood cut in a single year is too small to completely explain the discrepancy.

and in what the conservationists considered an argument against a meaningful park.[5] The estimate by Solinsky is smaller than that of John Miles and the National Park Service. The industry's argument would be strengthened if it would use the data of the conservationists.

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[5]Samuel Dana and Kenneth Pomeroy, "Redwoods and Parks," American Forests 71, May, 1965, pp. 1-32.

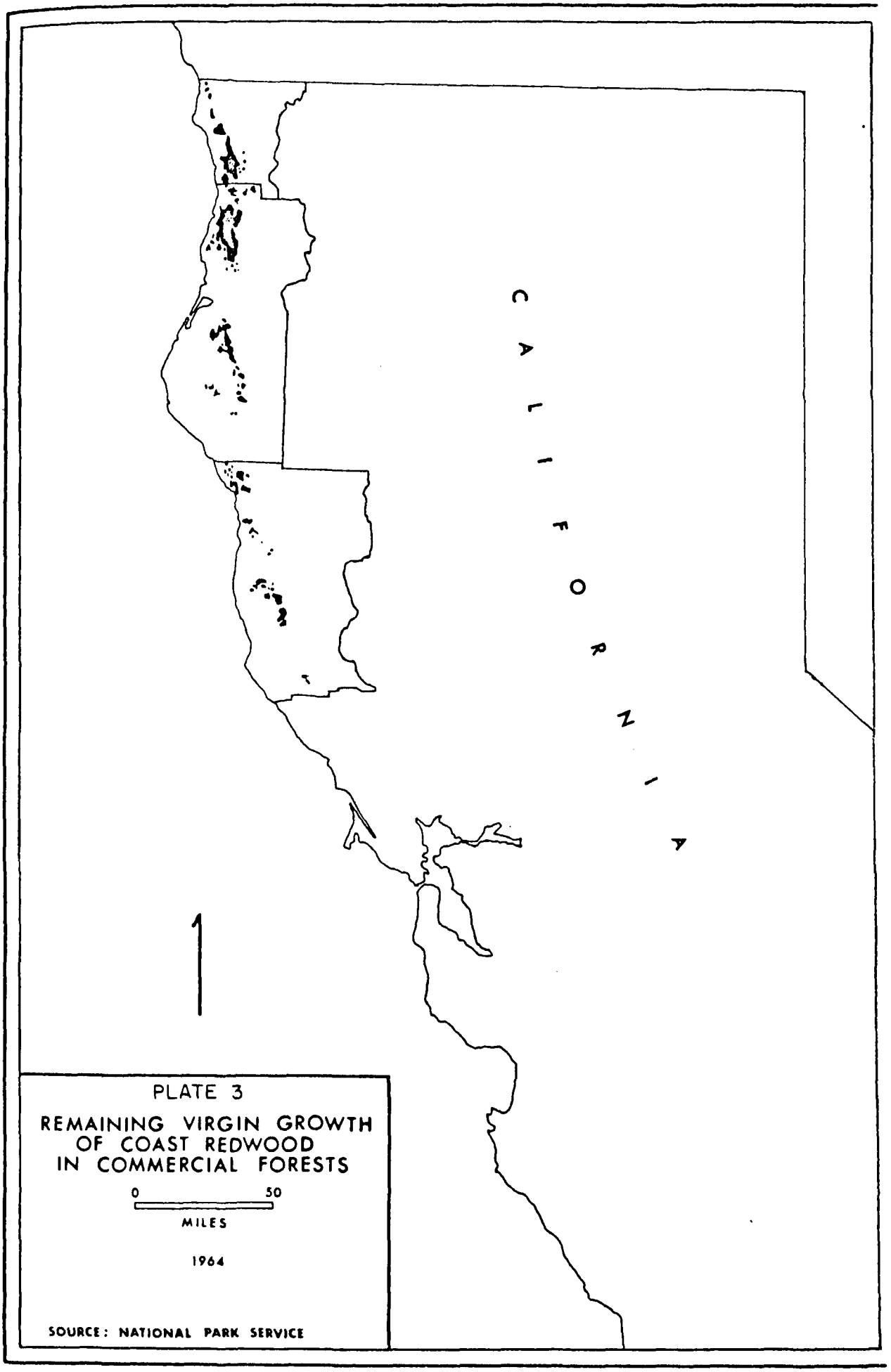
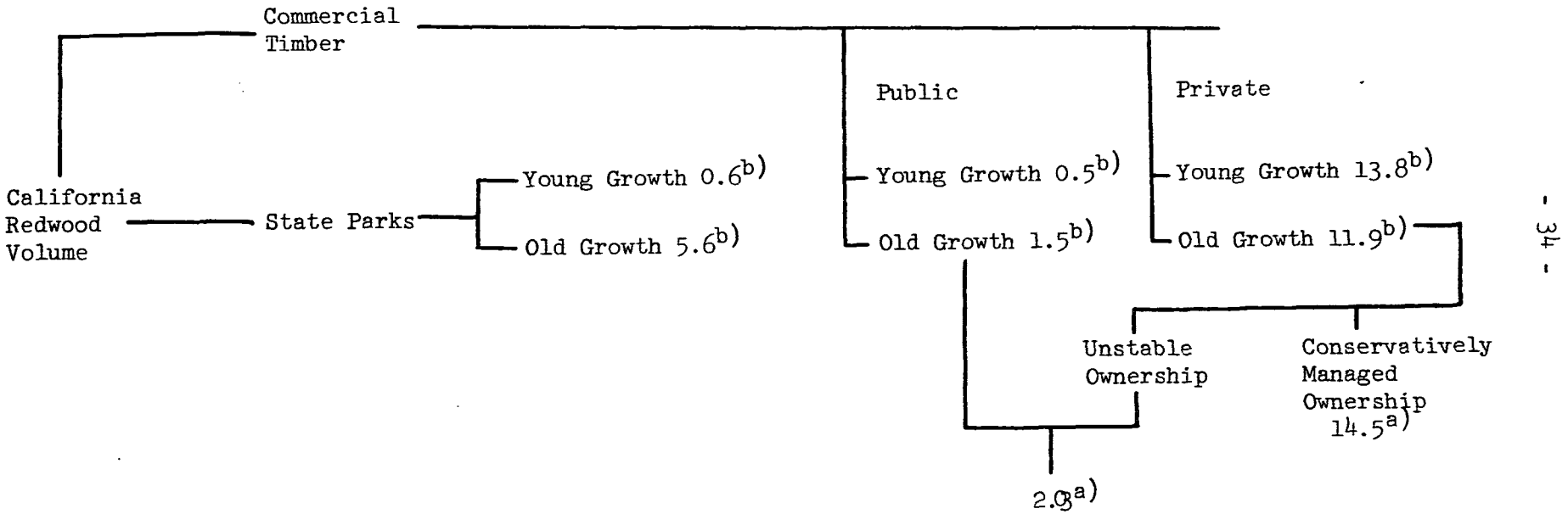

CALIFORNIA
1
PLATE 3
REMAINING VIRGIN GROWTH
OF COAST REDWOOD
IN COMMERCIAL FORESTS
0
50
MILES
1964
SOURCE: NATIONAL PARK SERVICE

Figure 5 California Redwood Volumes
(All figures are in billions of board feet)



a) National Park Service, The Redwoods.

b) Frank and Dean Solinsky, "Redwood Volumes and Acres," Journal of Forestry, 63 (March, 1963), p. 204.

V. North Coast Timber Resource

Most of the public controversy concerning the amount of old growth timber remaining on the north coast region has centered around the volumes in Humboldt County. Primarily for this reason Del Norte County timber will not be treated in detail. The explanation for the focus of this concern is that Humboldt County has a far larger timber industry and has the larger acreages of privately owned timberlands.

Del Norte County's Timber Resource

Del Norte County timber volumes exceed twelve billion board feet with the Six Rivers National Forest accounting for about three-quarters of the total. Redwood volume is approximately three billion board feet. Del Norte County has a much greater reliance on federally-owned timber than does Humboldt County and an apparent greater fraction of non-redwood coniferous timber than its southern neighbor. (See Plate 4) These figures are from the Pacific Southwest Forest and Range Experiment Station for 1965.[1] Judging by the general state of the timber stock on the north coast and the size of the timber in Del Norte County it appears the bulk of this volume is in old growth timber.

The total county timber cut is about 400 million board feet annually, according to the National Park Service,[2] although the timber operator

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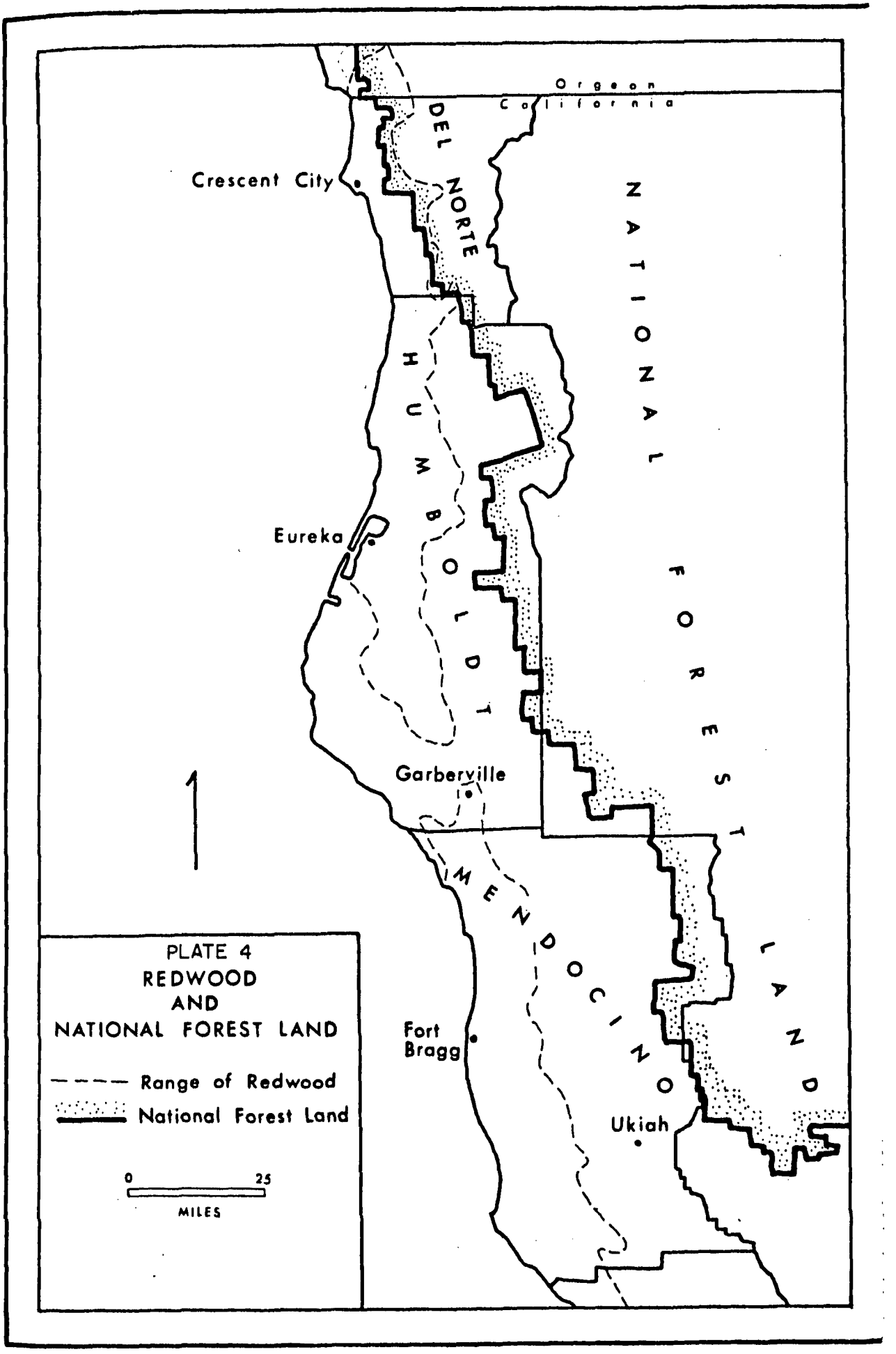
[1] Daniel Oswald and Gerald Walton, "Forest Statistics for Del Norte County, California, 1966," Forest Service Resource Bulletin Pacific Southwest-5, Berkeley, 1966, 12 pp.

[2] U.S. Department of the Interior, National Park Service, The Redwoods, Washington, 1964, p. 14.


Oregon
California
DEL NORTE
Crescent City
NATIONAL FOREST LAND
HUMBOLDT
Eureka
Garberville
MENDOCINO
Fort Bragg
Ukiah
PLATE 4
REDWOOD
AND
NATIONAL FOREST LAND
Range of Redwood
National Forest Land
0
25
MILES

reports suggest a smaller volume. (See Table 4)

Del Norte's Miller-Rellim Company would stand to lose the bulk of its timber holdings if the Federal administration proposal for a Mill Creek park were realized. Its situation is similar to that of Arcata Redwood Company in Humboldt County which will lose most of its timber if a Redwood Creek park were created.

Humboldt County Cutting Rates

The rate of Humboldt County timber cutting, and particularly of old growth, is a continuing point of disagreement among those involved in the park proposals. Some park protagonists have suggested that a very high rate of cut exists and, with this inmind, they have urged a park be established in order to "save the redwoods." Interests opposing the park have tried to indicate a relatively low cut rate with a steady or downward trend over the last few years. Various methods have been applied by both sides in an attempt to arrive at an accurate cut figure. A discussion of some of these procedures and their conclusions follow.

Each year the lumber companies engaging in the extraction of forest products voluntarily submit figures of their timber production.[3] These statistics are said to be incomplete, but the Division of Forestry believes such reports to be "close to actual production and the best available information."[4] The values for the years 1947 to 1964, inclusive,

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[3]California, Division of Forestry, Annual Production of California Timber Operators, Sacramento: 1948 to 1964.

[4]California, Division of Forestry, Annual Production of California Timber Operators, Sacramento: 1963, p. 2.

for Del Norte and Humboldt Counties are given in Table 4. These figures as released by the state make no adjustment for different log scales used; this inaccuracy may be significant (e.g., the change from Scribner long log rule to Internation 1/4 inch rule averages 7.5 percent)[5] and certainly should be kept in mind when applying the figures.

These values for sawlog and veneer log production may be adjusted to indicate the volume of timber removed from the forest by the use of a conversion factor.[6] This has been done in Table 5 using a factor supplied by the Pacific Southwest Forest and Range Experiment Station and another used by Becking.

Some park protagonists have claimed an acceleration of timber cutting within recent years, but the statistics presented above do not support this accusation. The annual average cut from these figures is 1.4 billion board feet, and this is in general agreement with the value of "about 1.3 billion board feet" of the California Redwood Association.[7]

Another method of determining cut rates involves the use of lumber and plywood-veneer production statistics and calculating how much timber must be removed for the output of such products. This requires the use of production data which, like the timber operators reports, has no guarantee of accuracy. It does, however, provide a means of determining timber cut, and the results can be compared with other methods and published figures.

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[5] These are two means of estimating volumes of useable wood in logs. See glossary.

[6] Sawlogs are those logs to be cut into lumber, while veneer logs are used to produce veneer, for plywood. See glossary.

[7] California Redwood Association, Fact Sheet #6, San Francisco: Calif. Redwood Association, 1966, p. 1.

Table 4

Timber Operator Report Figures for
Annual Timber Production 1947-1964

(in thousands of board feet)

Year	Humboldt County	Del Norte County
1947	476,999*	23,394*
1948	860,023*	34,468*
1949	806,916*	61,362*
1950	854,180*	141,996*
1951	982,660	174,452
1952	1,060,887	203,835
1953	1,234,405	288,913
1954	1,264,122	240,194
1955	1,298,346	305,742
1956	1,249,618	234,780
1957	1,211,925	201,180
1958	1,521,650	283,133
1959	1,570,108	336,863
1960	1,135,416	258,029
1961	1,264,964	229,670
1962	1,446,944	192,288
1963	1,247,281	307,395
1964	1,367,838	350,194

*saw logs and veneer logs only

There are several problems inherent in this means of calculating cut rates. The Redwood Park controversy revolves around old growth logging and less around the cutting of smaller trees. In assigning values of timber cut from wood products production statistics it is assumed that only old growth is being used. Such an assumption is probably valid and makes the calculations meaningful.

Another source of possible error is the production of wood products other than plywood-veneer and lumber. However, this is of no importance if the timber operator reports are accurate. Miscellaneous wood products for Humboldt County for 1963 constituted about one-half of one percent of the total timber cut. Other recent years and other counties show a similar situation. Ignoring such production will not increase errors significantly.

The lumber industry may rely upon logs cut in a previous year to support production in a current year. In this manner the annual wood products production statistics may inaccurately reflect the current year's cutting. However, in the period of a few years, this difficulty should be of no importance as carry over each year would tend to balance out (i.e., carry over from a preceding year would correspond to carry over to the following year). This difficulty would only be significant for any given year.

Another source of error is the non-inventory volume, such as salvage, which shows up in production but does not reduce timber inventory.[8] The

[8]Salvage refers to unuseable trees of logs left in a logged forest. As such they are not part of the useable volume, or inventory, but at some future date, they may be utilized.

Table 5

Timber Production
Plus Adjustment to Timber Cut

(in thousands of board feet)

Year	Timber Cut [a]	Timber Cut [b]
1947	518,477	
1948	934,808	
1949	877,083	
1950	928,457	
1951	1,068,109	
1952	1,153,138	
1953	1,439,571	1,496,000
1954	1,374,046	1,534,000
1955	1,411,246	1,871,000
1956	1,358,280	1,871,000
1957	1,317,309	1,496,000
1958	1,653,967	1,683,000
1959	1,706,639	1,871,000
1960	1,234,148	1,871,000
1961	1,374,961	1,667,000
1962	1,572,765	1,993,000
1963	1,355,740	
1964	1,486,780	

a) adjustment equals 8%, a factor supplied by the Pacific Southwest Forest and Range Experiment Station in a letter to the writer dated April 21, 1967; figures in this column equal (1.08)(timber operator report figures).

b) adjustment equals 24.7%, a figure used by Becking and from Vaux, 1955, "Timber in Humboldt County", Calif. Agric. Exper. Stat. Bull. 748, Berkeley, Calif.; figures in this column are as calculated and given by Becking, 1965, The Timber Economy of Humboldt County, Calif., in 1968; Figures in this column equal (1.247)(timber operator report figures).

Miles report calculates the value of non-inventory volume for Humboldt; this represents one-tenth the total timber in the county.[9] If a total volume figure is used, one including salvage and residual timber, the problem is eliminated.[10] More discussion of non-inventory volume follows in the section concerned with the determination of remaining old growth volume.

The inter-county and inter-state movement of logs and veneer is another complication, but Miles indicates the net movement of logs out of Humboldt County is small.[11]

Each of these sources of possible inaccuracy make the calculation of timber cut from production statistics somewhat unsure. However, they all involve small volumes of timber; combined with the relatively large amount of timber cut, they should be unimportant. This procedure is used by private foresters and the U.S. Forest Service so that it is recognized by authorities as legitimate.

Rudolf Becking of Humboldt State College used this method with conversion factors from Vaux:[12] his products statistics were from the Greater Eureka Chamber of Commerce. Becking's results are given in Table 6. His average annual cut rate of 2.07 billion board feet is much higher than the value from the industry's operator reports, although this large difference is not significant when related to the magnitude of remaining

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[9] John Miles, "Miles Report on Humboldt Timber," The Humboldt Beacon, March 10, 1966.

[10] When a forest is cut some trees may be left standing. If 70% or more of the volume over a given area is removed, the remaining volume, called residual, is not appraised for tax purposes. Residual trees are old growth but not virgin timber.

[11] Export volumes for Humboldt County are about 100 million board feet (one tenth the total cut), but the net export is much smaller.

[12] Henry Vaux, "Timber in Humboldt County," Calif. Agricultural Experiment Station Bulletin 748, 1955.

old growth timber.[13]

The apparently high values derived by Becking are the result of the conversion factors used. Vaux suggests a typographical error in his bulletin may partially answer Becking's very high cut rate,[14] although Becking indicates the error does not affect the statistics.[15] He does say that new, more accurate conversion factors may be useful in this pursuit. In both conversions (i.e., from lumber to timber cut and from plywood-veneer to timber cut), the factors used indicate less efficiency than those supplied to the writer by the Pacific Southwest Forest and Range Experiment Station. In figuring the lumber conversion, the difference is significant. Data on by-product chips going to pulp mills might illuminate the difference in conversion factors.

The writer employed the same procedure using the wood product statistics that Becking employed and conversion factors from the Experiment Station. Factors and results are summarized in Table 7. The average annual cut rate of 1.7 billion board feet falls between the high value of Becking and the lower value from industry reports. The total cut for the decade using the writer's numbers falls precisely midway between the ten-year cut estimate of the industry and that of Becking.

The California Redwood Association figure has been mentioned previously. Representatives of that organization say "that the annual cutting level has been fairly stable in recent years at somewhat less

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[13] A complete discussion of this problem will be brought up at the end of the chapter.

[14] Henry Vaux, personal communication to the writer, March, 1967.

[15] Rudolf Becking, personal communication to the writer, February 14, 1967.

Table 6

Rudolph Becking's
Forest Products-Calculated Cut Rate for Humboldt County*

(all figures are in millions)

Year	Lumber Production	Timber Cut for Lumber	Plywood-veneer Production	Timber Cut for Plywood-veneer	TOTAL TIMBER CUT
1953	1200 bd. ft.	1496 bd. ft.	276 sq. ft.	152 bd. ft.	1648
1954	1230	1534	343	197	1731
1955	1500	1871	407	233	2104
1956	1500	1871	407	233	2104
1957	1200	1496	429	241	1737
1958	1350	1683	504	289	1972
1959	1500	1871	723	415	2286
1960	1500	1871	883	505	2376
1961	1337	1667	938	537	2204
1962	1598	1993	957	548	2541

total inventory drain 1953-1962 equals 20.3 billion board feet.

*from Becking, 1965, The Timber Economy of Humboldt County, Calif., in 1968.

than 1.3 billion board feet."[16]

The final calculation involves the timber cut for an economic planning region, which includes Humboldt County, and as related by Zivnuska, et al.[17] Results and procedures are given in Table 8.

A tabulation of these cutting rates indicates the self-serving nature of the estimates. (See Table 9) The highest number is that of Becking who is strongly in favor of a large national park. A large cut rate supports the conservationists' view that preservation is necessary to save the trees. The smallest figure is from the California Redwood Association, an industry promotional organization. This pattern of self-serving arguments in allegedly objective analyses is a theme which reappears throughout the Redwood National Park controversy.

Fact-finding studies do not resolve conservation problems because the questions being asked are ones of value and purpose: "objective" answers do not exist. Moreover, both conscious and unconscious bias color "objective" analyses of "the facts". The difficulty of making decisions in resource allocation is an indication of the lack of criteria for resolving these controversies.

Humboldt County's Remaining Old Growth Timber

A recurring consideration in the north coast park proposals, and one closely aligned to the question of cut rate, is the magnitude of

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[16]California Redwood Association, Ibid.

[17]John Zivnuska, et al., The Commercial Forest Resources and Forest Products Industries of California, Berkeley: California Agricultural Experiment Station Extension Service, 1965, p. 17.

remaining old growth timber in Humboldt County. Conservationists have used standing timber figures and applied their cut rates in an attempt to determine the length of time remaining for old growth logging. Antagonists to the park have used a similar line of reasoning. Each side, however, has come to different conclusions, and these have varied widely. The estimates of remaining Humboldt County timber follow. The reader should keep in mind the following discussion refers to total timber volumes in the county and not simply to redwood volumes.

Rudolf Becking, in conjunction with his cut figures, calculated the timber inventory drain from 1953 to 1962 and subtracted that sum from a Humboldt County timber cruise figure made in 1953 and reported by Vaux.[19] Becking's volume for 1963 was thus computed to be thirteen and one-half billion board feet. Young growth is not a part of the Becking volume.

At the Board of Supervisors Meeting of July 7, 1965, the county assessor and timber appraiser for Humboldt County reportedly stated that the county timber inventory for 1963 was thirteen and one-half billion board feet. Becking cited this agreement with his volume figure as an indication of the accuracy of his method.[20] But the two figures were derived in different ways and do not include the same portion of Humboldt County's timber volume. Becking started with the assessed timber inventory of 1953 and subtracted from it only that volume which became wood products. His figure includes old growth volume which was left in

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[18] Vaux. Ibid.

[19] Rudolf Becking's statement at the Senate Subcommittee Hearing, June, 1965.

Table 7

Forest Products-Calculated Cut Rate for Humboldt County

(all figures are in millions)

Year	Lumber Production	Timber Cut for Lumber	Plywood-veneer Production	Timber Cut for Plywood-veneer	TOTAL TIMBER CUT
1953	1200 bd. ft.	1200 bd. ft.	267 sq. ft.	145 bd. ft.	1345 bd
1954	1230	1230	343	186	1416
1955	1500	1500	407	221	1721
1956	1500	1500	407	221	1721
1957	1200	1200	429	233	1433
1958	1350	1350	504	274	1624
1959	1500	1500	723	393	1893
1960	1500	1500	883	480	1980
1961	1337	1337	938	510	1847
1962	1598	1598	957	520	2118

Total inventory drain 1953-1962 equals 17 billion board feet.

Notes:

a) Lumber production and plywood-veneer production statistics from Greater Eureka Chamber of Commerce and quoted by Becking, 1965, The Timber Economy of Humboldt County, California, in 1968.

b) 1000 bd. ft. drain on inventory results in 1000 bd. ft. lumber tally; from a letter to the writer from the Pacific Southwest Forest and Range Experiment Station, April 21, 1967.

c) 1000 bd. ft. drain on inventory results in 1840 sq. ft. (3/8 inch basis) of plywood-veneer; from a letter to the writer from the Pacific Southwest Forest and Range Experiment Station, April 21, 1967.

Table 8

Planning Region-Calculated Cut Rate for Humboldt County

(all figures are in billions)

Year	Cut for Planning Region One[a]	Cut for Planning Region One except Humboldt County[b]	Cut for Humboldt Cty.
1953	2.92	1.89	1.03
1954	3.03	1.85	1.17
1955	3.16	2.01	1.15
1956	3.38	1.89	1.49
1957	3.20	1.73	1.47
1958	3.43	1.79	1.64
1959	3.79	1.76	2.03
1960	3.00	1.51	1.49

a) From Zivnuska, et al., 1965, The Commercial Forest Resources and Forest Products Industries of California, Calif. Agric. Exper. Stat., Berkeley, Calif.

b) County totals taken from annual Timber Operator Reports, but only 50% of Siskiyou County was used based on the size and location of active sawmills in the county; an 8% adjustment to timber cut was used.

Table 9

Humboldt County Cutting Rates

Source	Average Annual Cutting Rate Estimate	Viewpoint on Park Establishment
Rudolf Becking	2.07 billion bd. ft.	Favorable
Vale	1.7 " "	--
Planning Region-Based Calculation	1.4 " "	--
California Redwood Association	1.3 " "	Antagonistic

logged-over areas and consequently reverted to unassessed timber. Such volume should not show up in the 1962 county timber inventory of assessed volume. Thus the closeness of the figures would not be expected. Assessed young growth (in the cruise figure but not in Becking's) perhaps is equivalent in volume to residual timber (in Becking's figure but not in the cruise).

The John Miles report on Humboldt County timber supply submitted to that county's Board of Supervisors provides still another estimation of volume. "Merchantable timber in private ownership in Humboldt County, at January 1, 1966, is between 14,909 million and 17,526 million board feet."[20] Obviously this includes both old growth and large young growth stands, with the latter accounting for between three to four and one-half billion board feet. The old growth figure includes residual and salvage timber, therefore all the "old growth" could not be considered "virgin" in the sense it would be suitable for park purposes. The residual and salvage volumes are collectively estimated at about two and one-half billion board feet. In total, virgin stands are nine and one-half to eleven and one-half billion board feet. The preceding figure is noticeably low. The Miles' report was hailed by The Humboldt Beacon, which has a reputation of antagonism toward the Redwood National Park, as providing the "best available information on timber supplies in Humboldt County."[21]

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[20] Miles, ibid.

[21] The Humboldt Beacon's opinion about the Miles' report is expressed in a reprint of that report printed by the newspaper.

The California Redwood Association suggests a magnitude of sixteen to twenty billion board feet as of January 1, 1966 for privately owned timber in Humboldt County. This value is not as far out of agreement with other calculations when it is kept in mind that all timber, regardless of age or taxable status, is included. If old growth alone had been included the amount would be lower. The Miles' report suggests between one and one-half billion and three billion board feet as the volume of Humboldt County second growth timber below merchantable size, between three and four and one-half billion board feet for large young growth, and over two billion in residual-salvage old growth volume. Thus the California Redwood Association figure is well in line with other estimates.[22]

John Miles states that the county assessor estimated the privately-owned Humboldt County volume for 1962 at thirteen and one-half billion board feet and the 1965 figure at ten and one-half billion board feet. This generally substantiates the Becking numbers accredited to the county assessor.

The writer used the method of Becking in determining a number for timber volume in Humboldt County for 1963. The sum of the timber operator reports for the decade 1953-1962 is fourteen and one-half billion board feet. This subtracted from the thirty-five and one-half billion board feet of Vaux in 1953 leaves a 1963 timber inventory of twenty-one billion board feet. Such a figure again substantiates the California Redwood Association estimate.

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[22] California Redwood Association, ibid.

The calculated cut figures of the author may similarly be summed and subtracted from the 1953 timber inventory of Vaux. The drain in this case from 1953 to 1962 was seventeen billion board feet, leaving a 1963 value of eighteen billion board feet. Like the preceding calculation, this supports the general value which others have calculated.

In comparison, the various figures for Humboldt County old growth timber volume are all of the same order of magnitude except for the calculation by Rudolf Becking. It is safe to state that total inventory volume for 1966 was between fifteen and twenty billion board feet, and that old growth virgin stands accounted for between one-third and two-thirds of the total volume, i.e., five to fifteen billion board feet. These figures are all tabulated in Table 10.

There are many risks and difficulties involved with such estimates of timber volumes. The various political areas considered in different reports and the lack of breakdown as to tree species are two basic difficulties. Also, there is the problem posed by different units of measurements of standing timber; however, conversion factors may satisfactorily be used for the proper order of magnitude. Finally, the spread of years considered by the reports poses difficulties, although they are close enough in time to be comparable.

The procedure of subtracting timber cut from the 1953 cruise figure ignores growth of trees during the interval of time being considered. As will be seen in a following section, this growth on a county-wide basis may approach a billion board feet per year. This order of magnitude is not now being realized, however, owing to incomplete stocking, less than ideal growing conditions, and to the small growth of the remaining virgin

stands. Nevertheless, this annual increment to the county timber volume should be kept in mind when viewing the figures.

One of the most important of the risks is the problem of defining "old growth timber." Unaltered stands of virgin redwoods along alluvial bottoms (on which the redwood reaches its greatest size) obviously would be so classified. Ridge stands of smaller redwoods untouched by loggers are virgin yet many such forests are not of the spectacular type which the public visualizes as "redwood forests." Partially logged-over areas which contain significant volumes of standing timber in very large trees are most difficult to deal with; such trees are truly "old growth" yet the forests are obviously not "virgin" in the usual sense of the word. It is not always clear just what the volumes given actually include.

For the report entitled The Redwoods prepared by the National Park Service, "old growth" includes "untouched virgin" stands, implying selectively logged areas are not included as "old growth". This would be logical for the purposes of the report.

In Miles' study of the commercial redwood forest, volumes are categorized as to age class, but "old growth" includes both virgin stands and those areas selectively logged while retaining old growth trees (residual timber). Therein "old growth" includes forests from which up to seventy percent of the stand has been removed.

Summarizing tables indicate the complexity of these volume figures. (See Figures 6 and 7)

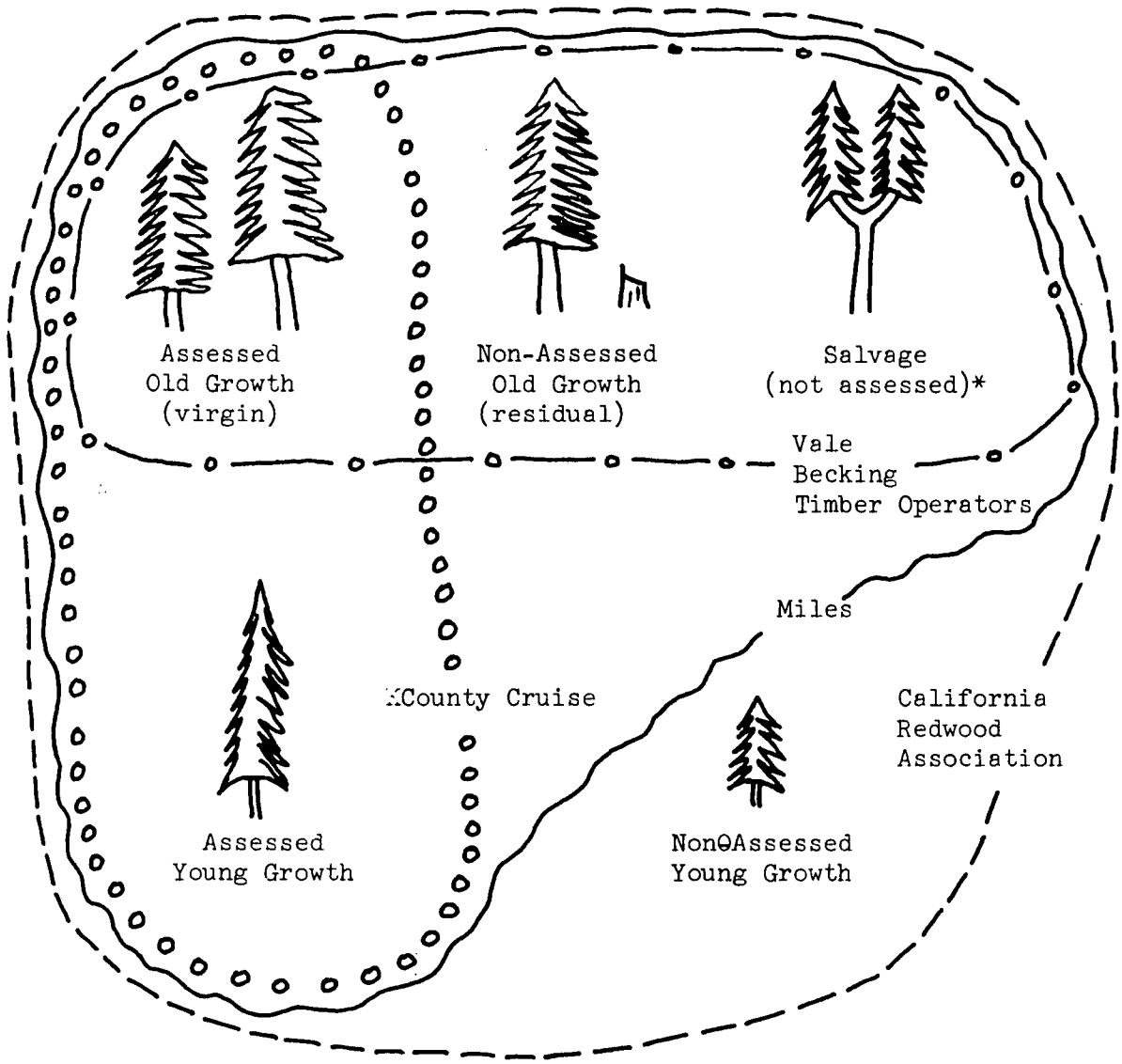
Table 10

Estimates of Timber in Humboldt County
(All figures in billions of board feet)

Source	Estimate Year	What Included In Estimate	Value
California Redwood Association	1966	Total Volume Assessed and Nonassessed	16-20
Miles	1966	Total Volume Except Nonassessed Young Growth	15-17.5
Becking	1963	Old Growth Volume Assessed and Nonassessed	13.5
Timber Operators	1963	Old Growth Volume Assessed and Nonassessed	21.0
Vale	1963	Old Growth Volume Assessed and Nonassessed	18.0
County Timber Cruise	1963	Assessed Timber Volume Assessed Old Growth and Assessed Young Growth	13.5

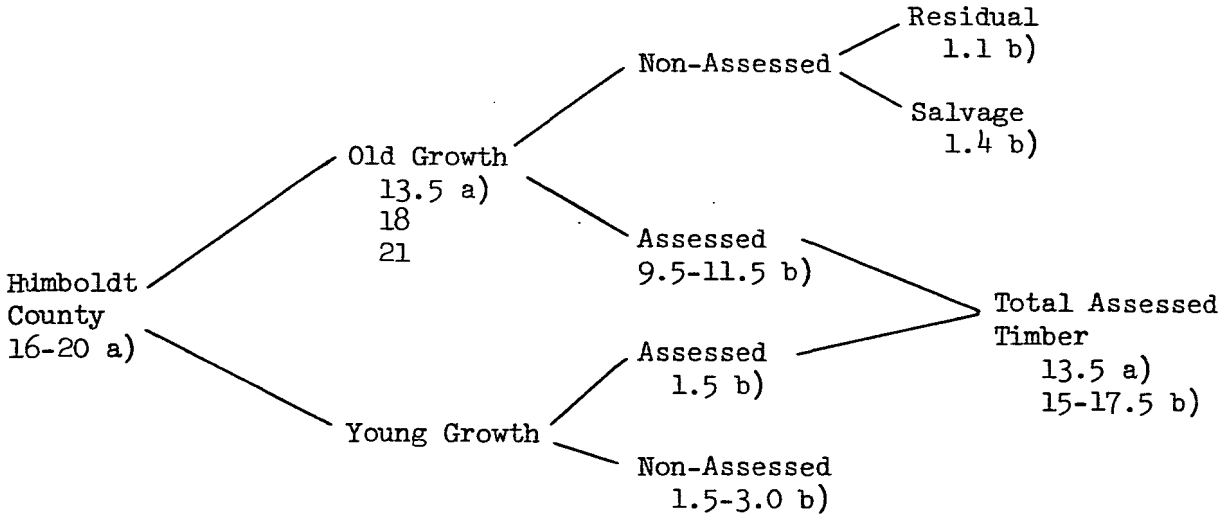
Figure 6

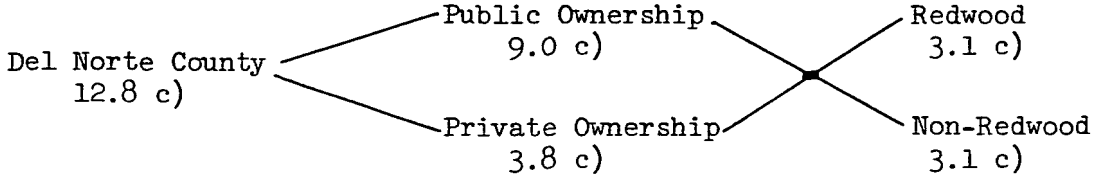
Estimates of Timber Volumes in Humboldt County: What the Figures Include



*Only salvage which has been left in the forest for the period 1953-1966 is included, i. e. pre-1953 salvage is not part of the Vale, Becking, and Timber Operator figures.

Figure 7. Humboldt and Del Norte Counties Timber Volumes
(All figures are in billions of board feet)





a) See Table 10, page 54.
b) John Miles, "Miles Report on Humboldt Timber," The Humboldt Beacon, March 10, 1966.
c) Daniel Oswald and Gersald Walton, "Forest Statistics for Del Norte County, California, 1965."

Projections of Current Cutting Rates Into the Future

The preceding concern with cut rates and remaining standing timber (pages 13-53) has not been of interest to conservationists or park antagonists, per se. Rather both calculations have been used together in an attempt to predict the course of future logging, and either establish the need for a park or the lack of that need. Conservationists have insisted the high rates of cut make creation of a national park necessary to "save the redwoods." The following inquiries suggest the maximum time remaining for exclusively old growth logging if current cut rates are maintained. These calculations are a means of expressing timber supplies and should not be taken as a prediction of the future, as some have used them. Predictions of Humboldt County's estimated future cut rate were discussed in the preceding chapter (pages 13-16).

Becking's estimate indicated a collapse in the old growth timber supply in Humboldt County by 1968 at his calculated inventory and cut rate. It has already been shown that these calculations are not in agreement with those of the industry, local government, and private research organizations.

Applying the various cut rates to inventory volumes derived in the last chapter, one finds a close agreement on the remaining number of years of old growth cutting at current rates of depletion in Humboldt County. (See Table 11) The difference, under each inventory figure, is a matter of four or five years at most. This indicates the rate of cutting is more or less agreed upon and really both sides in the park

controversy foresee similar limits to the timber supply. The agreement has been reached unconsciously and the antagonists would deny they agree with one another.

When considering the number of years remaining in the cutting of virgin old growth forests at current rates, the time involved is less (See Table 11)

At the current rates of cut, assuming this cut is only in old growth timber, there remain ten to fifteen years of logging before complete dependence on younger growth will be necessary. Three to ten years of logging might be supplied, under these conditions, by the untouched old growth forests. These looks into the future are from the year 1966.

The reader should be reminded again that these are not predictions of the future, but extrapolations from past trends. There are indications the rate of cut has been reduced, and it is logical to assume that large young growth will come into increasing use prior to the harvest of all the old growth timber. These contingencies say that the cutting of old growth will be longer than the above figures indicate. However, the longer the time of old growth cutting the smaller the rate of cut must be.

The reason for entering into a long discussion on timber volumes and cutting rates may not be clear. It is necessary to understand the nature of the controversy in order to comprehend the attitudes of those involved. The purpose of this chapter has not been to discern "the objective truth" about the timber situation on the north coast, but rather to see how self-serving the arguments on both sides tend to be. The general conclusion is that the volumes and cutting rates used by

Table 11

Future Old Growth Cutting in Humboldt County at Current Cut Rates

Total inventory volume for 1966 lies between 15 and 20 billion board feet. Old growth volume for 1966 lies between 7 and 15 billion board feet. Virgin old growth volume for 1966 lies between 5 and 13 billion board feet.

1. If Old Growth Volume is considered, and taking this volume at each value given above, the years remaining at each cut rate are given.

   At 7 billion board feet:

Becking cut rate (2.0 B bd. ft.)	3.5 yrs.
Timber Operators cut rate (1.4 B bd. ft.)	5.0
Vale calculated cut rate (1.7 B bd. ft.)	4.1
California Redwood Association cut rate (1.3 B bd. ft.)	5.4

   At 15 billion board feet:

Becking cut rate	7.5 yrs.
Timber Operators cut rate	10.1
Vale calculated cut rate	8.8
California Redwood Association cut rate	11.5

2. If Virgin Old Growth alone is considered, and taking this volume at each value given above, the years remaining at each cut rate are given.

   At an inventory figure of 5 billion board feet:

Becking cut rate	2.5 yrs.
Timber Operators cut rate	3.6
Vale calculated cut rate	2.9
California Redwood Association cut rate	3.8

   At an inventory figure of 13 billion board feet:

Becking cut rate	6.5 yrs.
Timber Operators cut rate	9.3
Vale calculated cut rate	8.8
California Redwood Association cut rate	11.5

park protagonists and park antagonists are not very different. Yet there is no recognition of this curious fact, and each side uses the figures in a framework which best serves its purposes. The positions taken are consequently the result of attitude and neither can claim objectivity.

The controversy may be characterized as political warfare with different factions in society vying for their own interests. Because these interests result from opinions about what is the best way of utilizing resources, fact-finding studies cannot provide the ultimate answer. Innumerable inquiries may be made into every facet of the forest products industry and the local economy, but this in itself cannot resolve the final question: should we have a Redwood National Park?

VI. Taxation

The loss of taxable property by creation of a Redwood National Park is an argument raised by some opposing the park plans. This position is one that cites the importance of the timber industry to the local economies, the predominance of timber and the forest products industry in the total assessed valuation in the counties, and the loss of county revenues by transferring lands from private ownership and commercial production to public ownership and non-material use.

Something first should be said of the manner of assessing commercial timberland because it has bearing on the following discussion. In 1926 the California State Constitution was amended to provide that:

> "all immature forest trees which have been planted on lands not previously bearing merchantable timber, or planted or of natural growth, upon lands from which the merchantable original growth timber stand to the extent of 70 percent of all trees over 16 inches in diameter has been removed, shall be exempt from taxation...provided, that forest trees or timber shall be considered mature for the purpose of this act at such time, after 40 years from the time of planting or removal of the original timber as above provided, as a board consisting of a representative from the State Board of Forestry, a representative from the State Board of Equalization and the county assessor of the county in which the timber is located, shall by a majority thereof so determine"
>
> (Article XIII, Section 12 3/4).

This provision appeared to be an obvious act of fair play. However, careful reading of the amendment reveals that only "immature" trees were to be exempt from taxation, whereas in practice all standing timber is untaxed (i.e., the stand is considered immature) when seventy percent, by volume, is cut and removed. Similarly, when the stand is considered

mature all trees are subject to taxation regardless of their age; a mature stand may have trees varying from forty to several hundred years of age. As has been seen, a significant amount of old growth timber remains standing in tax-exempt immature stands and does not appear on the assessor's rolls or in his county timber cruises.

Only in recent years has the difficulty of declaring "immature" timber as "mature" come about, for only of late have logged areas had sufficient growth to provide merchantable trees.

> "...By 1952, as a result of increasing average size of the timber in young stands, changed standards of merchantability, and keen competition for logs, some young-growth timber had acquired economic value for current utilization."[1]

Timber maturity board meetings were begun in the mid-fifties and have since, as detailed below, declared timber as mature in Del Norte and Humoldt as well as in Mendocino County.

It should be mentioned that the taxation of timber and timberlands is an obscure procedure. How a given timber assessor applies values to private timber holdings, or even what rates he is using, is not clear; the word "secrecy" may be a fair one to use in describing his procedures. Such assessment practices are quite normal and may be based in the belief that timberlands should receive special taxation consideration because they provide short term income with long periods in which they derive no income for their owners. That such differential treatment should be given timber holders is certainly recognized by government administrators and is indicated by the California State Senate report concerning taxes on extractive industries.[2] A discussion of the fairness

[1] Henry Vaux, "Young-Growth Timber Taxation in Mendocino County," Calif. Agricultural Experiment Station Bulletin 780, June, 1961, p. 60.

[2] California Senate Fact Finding Comm.on Revenue and Taxation, Taxes on Extractive Industries. Sacramento: January, 1965.

of these assessment practices is outside the purpose of this thesis.

Of the three redwood counties, Mendocino provides certain insights into this discussion which the other two, more central to the theme of the thesis, do not. Mendocino County had much earlier logging and is now far along in the taxation of young growth. Consequently, it foretells patterns that may apply to its northern neighbors.

Mendocino County

Between 1957 and 1959 some 320 million board feet of timber was declared mature in Mendocino County, involving 45,704 acres. In 1960 another 150 million board feet was likewise declared mature on 10,243 acres.[3] This averages out to 7,000 to 15,000 board feet per acre, a value which appears to be much smaller than subsequent returns to the tax roll. Of the timber involved in the first three years of timber maturity board action, only thirty-nine percent of the volume remained on the tax roll in 1960. This is explained by the fact that the immature stands were declared mature when the owner had decided to log them. They remained on the tax roll only a year or two. Vaux suggests this is usual for small tracts, but not for larger holdings.[4]

Such a policy is necessitated by the particular interpretation given to the Section 12 3/4 which says that maturity is determined, in part, by what is commercially being utilized. The result is that the

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[3] Vaux, op. cit., pp. 61, 64.

[4] Ibid., pp. 64, 66. Larger holdings are more likely to be classified and managed as sustained-yield units and by this qualify for lower tax rates. This will discourage rapid cutting of the standing young timber.

size and age of young growth subject to maturity declaration is that which is being cut. It is easy to see this arrangement will result in returning young growth to tax rolls for only a short time. Once cut, the young growth becomes an immature stand and again qualifies for the tax-exempt status.

In the five year period from 1961 to 1965, another 169,346 acres were declared mature in Mendocino County.[5] Added to the 55,947 acres previously involved in maturity declarations, the total from 1957 to 1964 was 225,293 acres. (See Table 12)

Vaux made an estimate of the acreage of "large young growth" timber in Mendocino County for the year 1958 and concluded it occupied 245,000 acres of private land.[6] Such an age designation provides a means of estimating the acreage which might soon be declared mature or which has just reached maturity. As the area actually involved in maturity declarations is nearly equivalent to the acreage of "large young growth," one may conclude there is little additional forest soon to be subject to such declarations. The very small acreage involved in 1966 maturity board action (352 acres) may reflect this situation.[7] Also, the Arthur D. Little report dated March, 1965 states that Mendocino County will have no declarations of maturity on young growth forest "for at least five years" after fiscal 1963-1964. The source cited was the County Assessor's Office.[8]

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[5] Fred Landenberger, The Status of Timber Taxation on the North Coast, Eureka: North Coast Timber Association, 1966, p. 5.

[6] Vaux, op. cit., pp. 65-66.

[7] Landenberger, op. cit., p. 5.

[8] Arthur D. Little, Inc., Economic Report for Mendocino County, San Francisco: Arthur D. Little, Inc., 1965, p. 87.

The relationship of young growth to the tax base in Mendocino County is of great interest. Owing to the immediate cutting of newly-declared mature timber (and the re-exemption of this residual timber from taxation), Vaux predicted that young growth assessments would not exceed one million dollars in the future. Assuming unaccelerated young growth timber cut and stable stumpage prices, timber taxes would provide little revenue for the county.[9] The young growth timber amounted to about three and one-half percent of all the timber on the tax roll in 1960-1961; by 1963-1964 this had increased to fourteen percent. Old growth still accounts for ninety percent of assessed timber volumes in spite of rapid old growth cutting.[10] Total assessed timber volume is sharply declining in Mendocino County because young growth is not taking up the difference. "An overall decline of over 70 percent in total taxable timber by 1978 is to be expected."[11] Therefore, returns of young growth to Mendocino County tax rolls will offer trivial amounts of tax revenues, and once old growth has been logged timber itself will cease to be a source of county revenues.

Humboldt County

In Humboldt County, the Dana and Pomeroy report quotes the Assessor's Office for the estimated valuation of property. (See Table 13) Timber

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[9] Vaux, op. cit., p. 59.

[10] Arthur D. Little, op. cit., p. 85.

[11] Vaux, op. cit., p. 59.

Table 12

Acreage Declared Mature in Mendocino County
1957 to 1965

Time Period	Acreage	Vaux Estimate of Large Young Growth in 1958
1957 to 1959	45,704	
1960	10,243	
1961 to 1965	169,346	
1957 to 1965	225,293	245,000

accounts for about ten percent of all the assessed property value in 1961; this is virgin old growth timber. The decreasing role of timber in the total assessed valuation of Humboldt County from 1931 to 1961 is an "economic fact of life." (See Table 14)

Landenberger says the recent upturn in the importance of timber as assessed property is a reflection of newly declared mature timber.[12] It more likely is a reflection of increased stumpage values. Guthrie and Armstrong indicate such a trend in the log market is to be expected, and it is substantiated by the Forest Service report on the price situation in forest products.[13] The latter source gives log prices for various species and grades of logs, and top old growth redwood is easily the most valuable stumpage with prices up to ninety dollars per thousand board feet. Also, in order for young growth to increase tax revenues there must be a net increase in taxable volumes of timber, and it is unlikely that returns of young growth will exceed the cut of old growth. Therefore it would be impossible for the increase in importance of timber in Humboldt County assessed valuation to be the result of returning young growth to a taxable status.

Landenberger says between the years 1955 and 1965 some 45,464 acres were declared mature in Humboldt County. Of this area, only about 20,000 acres remained on the tax roll in 1966. The same source claims 20,113 acres were subject to maturity declarations in 1966, and "the total volume

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[12] Landenberger, op. cit., p. 3

[13] U.S. Department of Agriculture. Forest Service, Demand and Price Situation for Forest Products - 1966, Government Printing Office: 1967, p. 9.

Table 13

Assessed Valuation of Selected Classes of Property, Humboldt County, 1961

Class of Property	Assessed Value	Percent
Timberland:		
Redwood 474,085 acres at $4.00	$ 1,896,304	2.3
Douglas Fir 654,679 acres at $3.00	1,964,037	
Timber: all coniferous species	16,297,260*	9.9
Manufacturing Plants:		
Sawmills	13,847,784	11.7
Plywood and Veneer Plants	5,444,250	
Logging Equipment	212,520	0.1
All Other Property	124,015,789	76.0
	$163,677,980	100.0

Source: Dana and Pomeroy, 1965; 22.

*This value is obviously far less than real value or even one quarter appraised value, which is a standard appraisal factor in California for assessment purposes. The difficulty of determining market values for standing timber and the equally obscure procedures of timber appraisal are briefly discussed in the text.

Table 14

Humboldt County

Changes in Assessed Valuation*

Year	Timber Percent of County Total	Timber, Timberland, Mills, and Equipmt. Percent of County Total
1931	36%	42%
1952	23	35
1961	10	24
1965	12	30

*From Landenberger, 1966; Table II, page 3.

of young growth timber on the roll will probably approach 2 billion board feet."[14]

The Humboldt County Assessor's Office provided figures of recent maturity declarations of young growth timber. In fiscal 1966-1967 about 1.2 billion board feet were returned. A figure for 1967-1968 is given as 281,953,000 board feet, but it is not clear whether this is a number which may increase during the latter portion of 1967-1968.[15] In any event, the estimate of two billion board feet of young growth on the tax rolls seems reasonable.

At the stocking rates for Mendocino County given earlier in this chapter, the volume of young growth in Humboldt County declared mature involves 133,000 to 285,000 acres. Miles gives a figure of 240,000 acres with trees over thirty-five years but less than 100 years of age.[16] It is unlikely that one-half of all such older young growth acreage would be involved in just a few years of maturity board actions. The alternative answer is one of greater volume per acre of young growth. Again turning to Miles, large young growth in Humboldt County is stocked at the rate of 23,000 to 32,000 board feet per acre.[17] On this basis one may conclude that the maturity declarations 1966 to 1968 of 1.5 billion board feet involve 50,000 to 70,000 thousand acres, and be in general agreement with acreages subject to maturity classification in the decade prior to 1966.

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[14] Landenberger, op. cit., p. 6.

[15] Humboldt County Assessor's Office, personal communication, Sept., 1967.

[16] John Miles, "Miles Report on Humboldt Timber," The Humboldt Beacon, March 10, 1966.

[17] Ibid.

Assuming a county private timber volume of ten billion board feet, the addition of two billion board feet of young growth would increase the timber volume by one-fifth and the total county assessed valuation by about two percent. Even assuming these optimum conditions of returning young growth, maturity declarations will do nothing to increase the tax revenues of Humboldt County.

In the north coast area, as in the west generally, the total volume of standing timber should be expected to decrease as a result of the liquidation of large old growth. This will be replaced by more productive young forests. When growth equals cut and the sustained yield cut is reached, the volume of taxable timber at any given moment in time will be very small. This is the situation being realized now in Mendocino County.

The effects of park establishment upon tax revenues are of great interest. If a national park of 53,000 acres on Redwood Creek were to be realized, approximately one-tenth of the total county timber volume would be included, as discussed in a previous chapter. This represents about one percent of the total assessed valuation in the county. The 43,000 acres of private timberland which might be removed from the tax roll represents about four percent of the county total coniferous forest land, excluding state parks, or about one-tenth of one percent of the total assessed valuation of Humboldt County. These calculations are only approximate because they fail to take into account variations in timberland and timber value; they suggest the trivially small value involved. (See Table 15)

A large park of 90,000 acres on Redwood Creek would involve more timber and timberland. The 53,000-acre park discussed above includes 21,000 acres of virgin old growth,[18] and a 90,000-acre park would take in

[18] U.S. Department of the Interior, National Park Service, The Redwoods, Washington: 1964, p. 42

about 33,000 acres of similar forest.[19] The rest of the difference in acreage would be in cutover and other lands. Undoubtedly the effect on the tax base would be greater but less than double that generated by the smaller park.

The 1967 investigation by Arthur D. Little, Inc. for the National Park Service suggests 590 million board feet of timber would be removed from the tax rolls by 17,462 acres of park in the general Redwood Creek area.[20] If realized as a park unit, this would reduce the county tax rolls by about one-quarter of one percent.

Moreover, local governmental agencies do not depend completely upon property tax revenues. In 1952, Vaux reported only about one-half the total budget requirements of Humboldt County were fulfilled by such taxes; forty-eight percent of the funds came in the form of state and federal grants. Of the remaining fifty-two percent, only three-quarters of the monies resulted from property taxes and bond issues "whose security depends on the tax base."[21]

The proportion of outside financing has been steady since 1952. The Arthur D. Little, Inc., report on Humboldt County says about thirty percent of the county revenues were derived from property taxes in fiscal year 1964-1965. This figure is probably low due to large outside aid for flood damage, but in 1961-1962 the proportion of county revenues secured

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[19] Gordon Robinson, Proposed Redwood National Park - Impact of the Sierra Club's Proposal for a Redwood National Park on the Forest Industries of Humboldt County (unpublished), see Senate Hearing Record for August 17, 1966.

[20] Arthur D. Little, Inc., The Economic Impact of Possible Additions to a Redwood National Park in Humboldt County, San Francisco: Arthur D. Little, Inc., 1967.

[21] Henry Vaux, "Timber in Humboldt County," California Agricultural Experiment Station Bulletin 748, 1955, p. 6.

Table 15

Effects of Park Establishment
on Humboldt County Revenues

Park Plan	TIMBER Volume	TIMBER Percent of County Timber	TIMBER Percent of Assessed Valuation	LAND Acres Private	LAND Percent of Land (Coniferous)	LAND Percent of Assessed Valuation	Total Decrease in Assessed Valuation (in Percent)	Total Decrease in County Revenues (in Percent of Total County Revenues)
NPS I 53,600 Redwood Creek	2.2B	10%	1%	43,000	4%	0.1%	1.1%	0.4%
Sierra Club 90,000 Redwood Creek	2.6B*	13%	1.3%	77,000 (68,700 coniferous)	6%	0.2%	1.5%	0.6%
	*Robinson							
Redwood Creek 17,462	.590B	3%	0.3%	17,462	1.6%	.04%	0.34%	0.14%

Effects of Park Establishment
on Del Norte County Revenues

Mill Creek	--	--	--	--	--	--	10%	3%

from property tax was only forty-two percent.[22] The Vaux report says the proportion was thirty-nine percent in 1952.[23] Therefore the effects of the park on finances available to local government are barely half of those suggested by property tax revenues alone.[24]

Vaux recognized that for Humboldt County a decreasing dependence on timber as taxable property (due to cutting) would have only moderate effects on other forms of property. His predictive power was astute. Further, he warned that "the situation may be serious for individual taxing districts where timber now constitutes an abnormally high proportion of the tax base."[25] Loss of the timber from the tax rolls, presumably either by cutting or by transfer to public ownership, is what is considered "serious." This, in itself, argues neither for nor against any particular means which removes the timber from a taxable status. As far as taxation is concerned, timber cutting is inherently serious.

Del Norte County

Del Norte County and its economy was studied by the firm of Arthur D. Little, Inc., of San Francisco as part of the National Park Service argument in favor of the Administration plan for a national park.[26]

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[22] Arthur D. Little, Inc., op. cit., p. 67.

[23] Vaux, op. cit.

[24] The lack of local government self-sufficiency raises the question of how much the rest of society is obligated to relinquish its interests in the region. By virtue of their support of the local governments, the State and Federal governments have an ethical prerogative to ask that the larger interest prevail over that of the local.

[25] Ibid., p. 33.

[26] Arthur D. Little, Inc., Economic Report for Mendocino County, San Francisco: Arthur D. Little, Inc., 1965.

Some of the findings were questioned by the North Coast Timber Association, but the order of magnitude is clear.[27]

Local property tax supplies slightly less than one-third of the total budget requirement of Del Norte County, varying between a low of 23.2% in fiscal year 1965-1966 (a year with outside aid for flood damage) and a high of 31.5% for 1958-1959. The largest part of the budget requirement is secured as aid from other governmental agencies. Timber represents about one-third of the assessed tax roll in Del Norte County.[28]

"Purchase of the desired lands (for the national park) would reduce current secured property taxation payments by 11 to 12% of the current local secured roll."[29] About four percent of the total revenue spent by the county and special districts in the county would be eliminated. Del Norte County would suffer more from the loss of taxable property than would Humboldt County.

Fiscal 1967 budget estimates for Del Norte County have been set at $10,305,33[illegible], as related in a National Park Service report.[30] The portion to be provided by property tax is seen as twenty-five percent or about two and one-half million dollars. Based on 1966 tax rates and assessment values, the same report estimates creation of the Mill Creek park will result in a loss in property tax revenues of $25[illegible],000 or about ten percent of the property tax portion of the total budget requirements. Thus, this park would lead to a loss of about three percent in

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[27] Letters from the North Coast Timber Association to Arthur D. Little, Inc., dated May [illegible], 1966 and May 5, 1966.

[28] Arthur D. Little, Inc., op. cit., pp. 105, 107.

[29] Ibid., p. 109.

[30] U.S. Department of the Interior, National Park Service, A Proposed Redwood National Park (unpublished), see Senate Hearing Record for April 17-19, 1967.

total revenues spent by the county. This figure agrees with that derived in the Arthur D. Little report.

School districts secure a disproportionately large percentage of their funds from property taxes. One-third of the budget for education in Del Norte County is so derived. This represents about forty-seven percent of the total revenue from property tax. School districts would suffer more than other county agencies by loss of private taxable lands. But state aid to schools is inversely proportional to assessed valuation in each school district. Therefore, with establishment of a national park, increased state aid would be forthcoming. Once cut, virgin old growth will be lost to the tax rolls, and to the school districts. Ironically, as a source of school revenues, virgin old growth is destined to be lost soon regardless of the outcome of the park proposals.

The National Park Service report concedes the loss of tax monies will not be offset by the normal increases in state aid (i.e., the increase in school district aid). This is supported by letters to Landenberger from the Assistant School Superintendents in Humboldt and Del Norte Counties.[31] The situation has evoked a proposal that the Administration provide Federal assistance which would include, but not be restricted to, reimbursement to the state for the increased state school district funds. The National Park Service claims the monies from the Federal Government will be greater than that revenue derived as property tax on

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[31] These letters are exhibits in Landenberger's Senate Hearing Statement on June 17th.

the lands lost.[32]

Many studies ignore any contribution to the local economies generated by increased tourism resulting from the creation of a national park, Although the degree of the benefit may, and indeed is, argued, some benefit would unquestionably result.

Large public ownership of land, with the associated lack of private tax base, is not entirely detrimental to local government taxation. Services and costs of administering private lands by local governments largely drop out with public ownership. In some cases revenues are not completely lost to the local government. National Forest payments to the counties wherein federal forest lands are located is but one example. Del Norte County, with about seventy percent of its acreage in federally-owned national forests, receives substantial monetary aid from the Forest Service for both roads and schools.

Expanded industry and the larger number of employees would also require greater county expenditures for services, and consequently expansion will lead to larger spending as well as providing more revenue.

One may argue, however, that the loss of timber and timberland by a given company might prevent expansion plans that would return increased taxes to the county in the future. The prognostications by Miller-Rellim in Del Norte County for diversification and large capital investment for equipment is a case in point. The failure to establish this plant would

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[32] U.S. Department of the Interior, National Park Service, op. cit.

be a significant loss of possible tax revenue. In this regard, Zivnuska, et al, concur. Timber-based investment in plants and equipment "can provide a major element in the tax base."[33]

There are many ways to use tax figures, land values, and similar statistics. The use of such numbers here is not meant to be the final word in this field. Rather they should suggest the general order of magnitude involved. (See Table 15) With this in mind it is concluded the effect on taxation by national park establishment is trivial, and arguments on property tax have no place in the discussion. Any full look at the tax and revenue situation will bear this out. Yet park antagonists have attempted to capitalize on this argument and have said local governments would be financially ruined if a park was established. If, in fact, concern for the tax structure had ever been serious, park antagonists and protagonists could have joined with a common interest on a simple program: eliminate logging!

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[33]John Zivnuska, et al, The Commerical Forest Resources and Forest Products Industries of California, Berkeley: California Agricultural Experiment Station Extension Service, 1965, p. 98.

VII. Employment

Employment forecasts in Humboldt and Del Norte Counties have been discussed in several recent reports. In general, the downward trend in the forest products industry must be expected to continue.

Zivnuska predicts a forty percent decline in employment in the timber industries (excluding pulp and paper) of the north coast counties over the period of 1958-1960 to 1975. This will result from two factors: (1) a decrease in the total cut of timber, and (2) a decrease in the employment per unit volume of timber cut.[1]

The first factor has already been treated in another section. (See pages 12-14). Suffice it to say, the reduction in cut on the north coast will occur, and it will be a large decline. Estimates of the decrease vary from about fifteen to thirty percent of the recent years' cutting levels.

A decrease in employment per one thousand board feet of timber cut is suggested by Zivnuska.[2] (See Figure 8) He indicates this will be a continuation of the past trend, which saw a twenty percent reduction from 1947 to 1961.[3] Moreover, Zivnuska writes:

> "There may be some reason to argue that the decline in employment will be even greater since there is a need for a tremendous increase in efficiency in the use of labor in lumber manufacturing and plywood manufacturing."[4]

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[1] John Zivnuska, "The North Coast Timber Economy in 1975," Forestry Seminar Series, Fall, 1964, pp. 10-12.

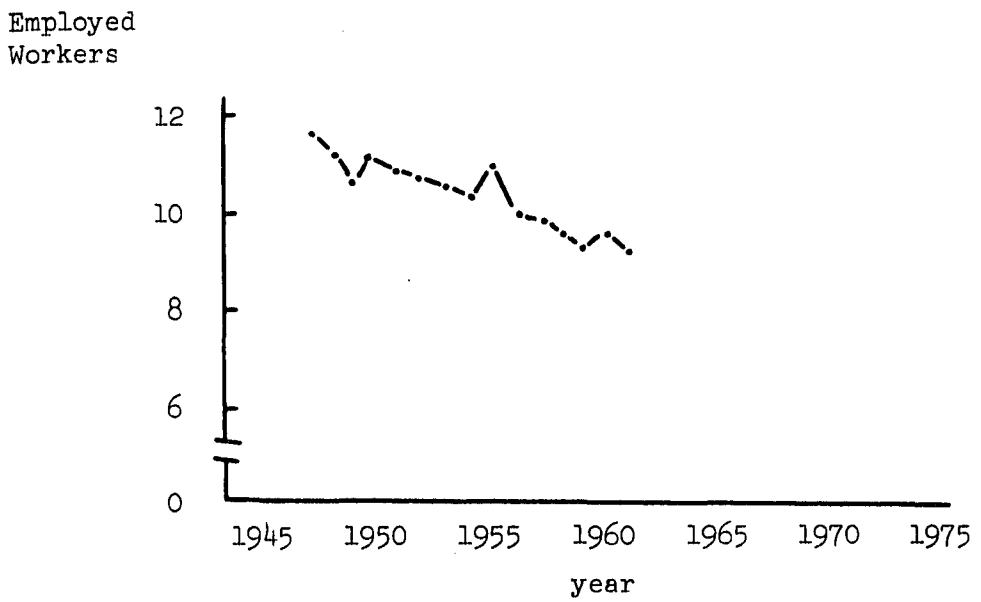
[2] Ibid., p. 11.

[3] John Zivnuska, et al., The Commercial Forest Resources and Forest Products Industries of California, Berkeley: Calif. Agricultural Experiment Station Extension Service, 1965, pp. 56-57.

[4] Zivnuska, op. cit., pp. 10, 12.

Figure 8

Employment in Lumber and Wood Products Industry
per Million Board Feet of Timber Cut



Notes:
1. From Zivnuska, 1964.
2. This employment rate does not include the pulp and paper industries.
3. The recent log export of logs to Japan may act to reverse the downward trend, but total employment in the industry continues to decrease in spite of log exports. (See figure 9.)

His general contention is upheld by the Arthur D. Little report of April, 1967.[5]

Seemingly in an opposing position, Guthrie and Armstrong suggest

> "...unit labor requirements (in the forest industries) in the West, already relatively low, may not be expected to decrease substantially without important technological developments like those of the 1920's."[6]

They point out the lumber industry has concentrated efforts on finding uses for waste rather than avoiding it. If these uses had not been developed, unit labor requirements would have decreased even more. Guthrie and Armstrong are not optimistic of changes in technology to reduce raw material losses in an industry commited to their utilization. Table 16 recapitulates labor productivity from 1947 to 1961.

In summary, Zivnuska says increased labor efficiency is necessary for forest industry growth or continuance at current levels, while Guthrie and Armstrong claim the prospects for that labor-saving are poor. Caught in this pinch, the industry may become even more depressed.

The state of employment on California's north coast is not healthy. Since the boom days of the forest products industry in the last decade, employment both in that sector and in the total economy has been dropping. Complete figures are available for full years through 1966; partial figures for 1967 show a continuance of the downward trend.

The California State Department of Employment has supplied the statistics for "lumber" employment for both Humboldt and Del Norte Counties

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[5]Arthur D. Little, The Economic Impact of Possible Additions to a Redwood National Park in Humboldt County, San Francisco: Arthur D. Little, Inc., 1967.

[6]John Guthrie and George Armstrong, Western Forest Industry: An Economic Outlook, Baltimore: John Hopkins Press, 1961, pp. 80-81.

related in Figure 9. Also, the State has provided the numbers and percentages of unemployed in the same tables.

Several facts are revealed by these employment curves. The very sharp seasonality in lumber employment is particularly striking. Even during the high production years this phenomenon was realized and is the normal situation in areas dominated by the forest products industry. It is often contended that more reliance on tourism would be unwise in the north coastal region because of the short season of active vacationing. This argument is unconvincing in light of the employment curves for forest industry employment. Regrettably, the employment patterns of both tourism and logging produce jobs in the same season and consequently, they are not complementary. Yet the strong seasonality produced by tourism would be nothing new in the redwood region.

The Department of Employment relates that the usual upturn in Humboldt County lumber industry jobs in the spring of 1967 did occur, but the two month increase was "the smallest for any April-June period since record-keeping began in 1958."[7] The State also attributes the fewer jobs in June, 1967 over June, 1966 to the loss of employment in lumber manufacturing and construction, the latter down because of the completion of the Crown-Simpson pulp mill. (See Chapter 3)

Del Norte County declines less in the figure, but this is deceiving.

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[7] California, Department of Employment, North Coast Counties Labor Market Bulletin, Sacramento: June, 1967.

[8] California, Department of Employment, North Coast Counties Labor Market Bulletin, Sacramento: April, 1967.

Table 16

Employment in the Lumber and Wood Products Industry
As Related to Volume of Timber Cut in California: 1947-1961*

Year	Employed Workers (in thousands)	Estimated Timber Cut (billion bd. ft.)	Workers per Million Bd. Ft. Cut per Yr.
1947	44.0	3.89	11.3
1948	50.1	4.50	11.1
1949	45.3	4.29	10.5
1950	52.7	4.80	10.9
1951	58.0	5.44	10.7
1952	58.5	5.51	10.6
1953	58.4	5.65	10.3
1954	56.6	5.64	10.0
1955	62.4	5.97	10.5
1956	61.0	6.55	9.3
1957	55.3	6.02	9.2
1958	53.6	6.07	8.8
1959	58.8	6.93	8.5
1960	54.9	6.05	9.1
1961	51.1	5.94	8.6

*Zivnuska, et al., 1965; 56.

Figure 9. Employment on the North Coast.

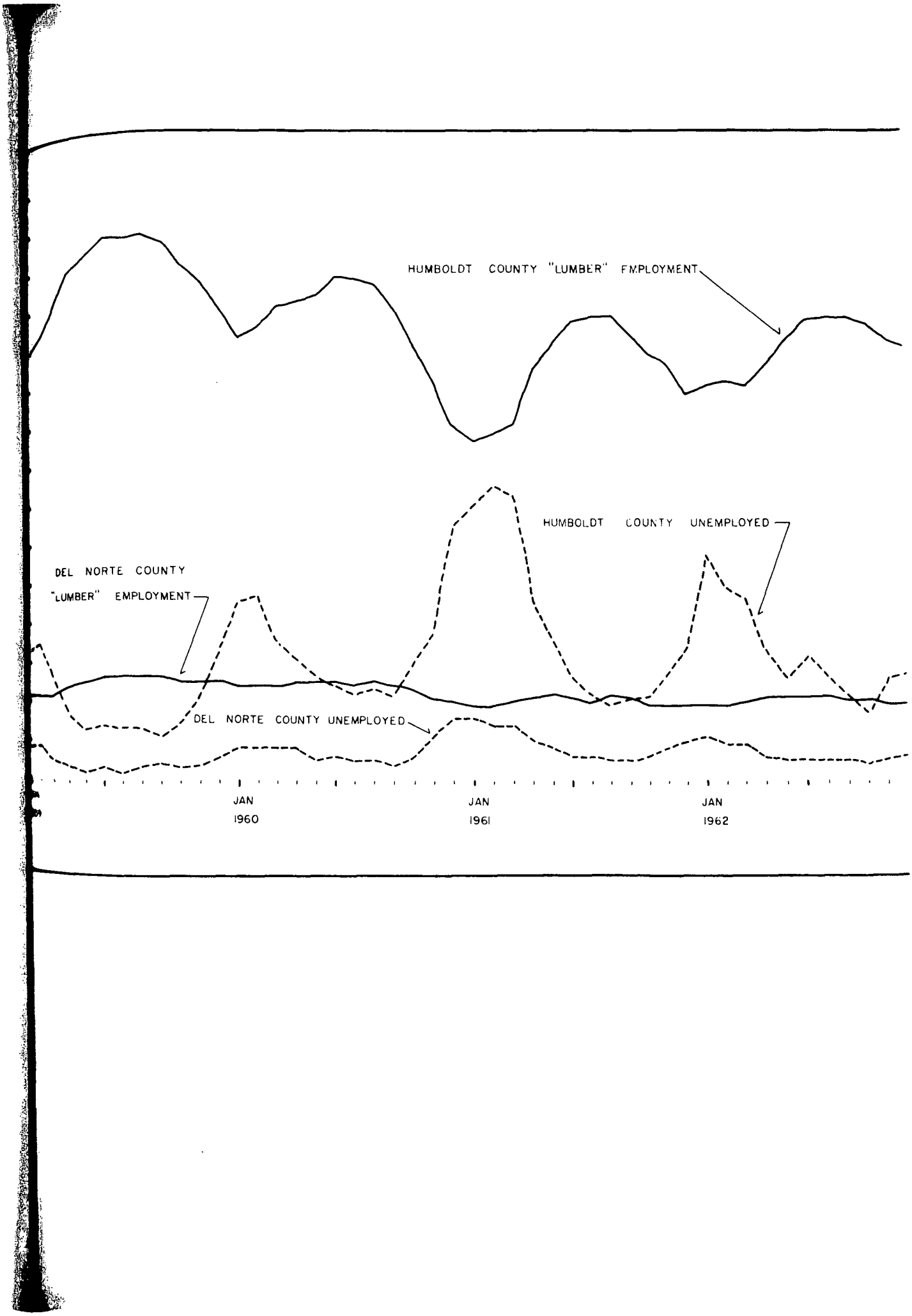
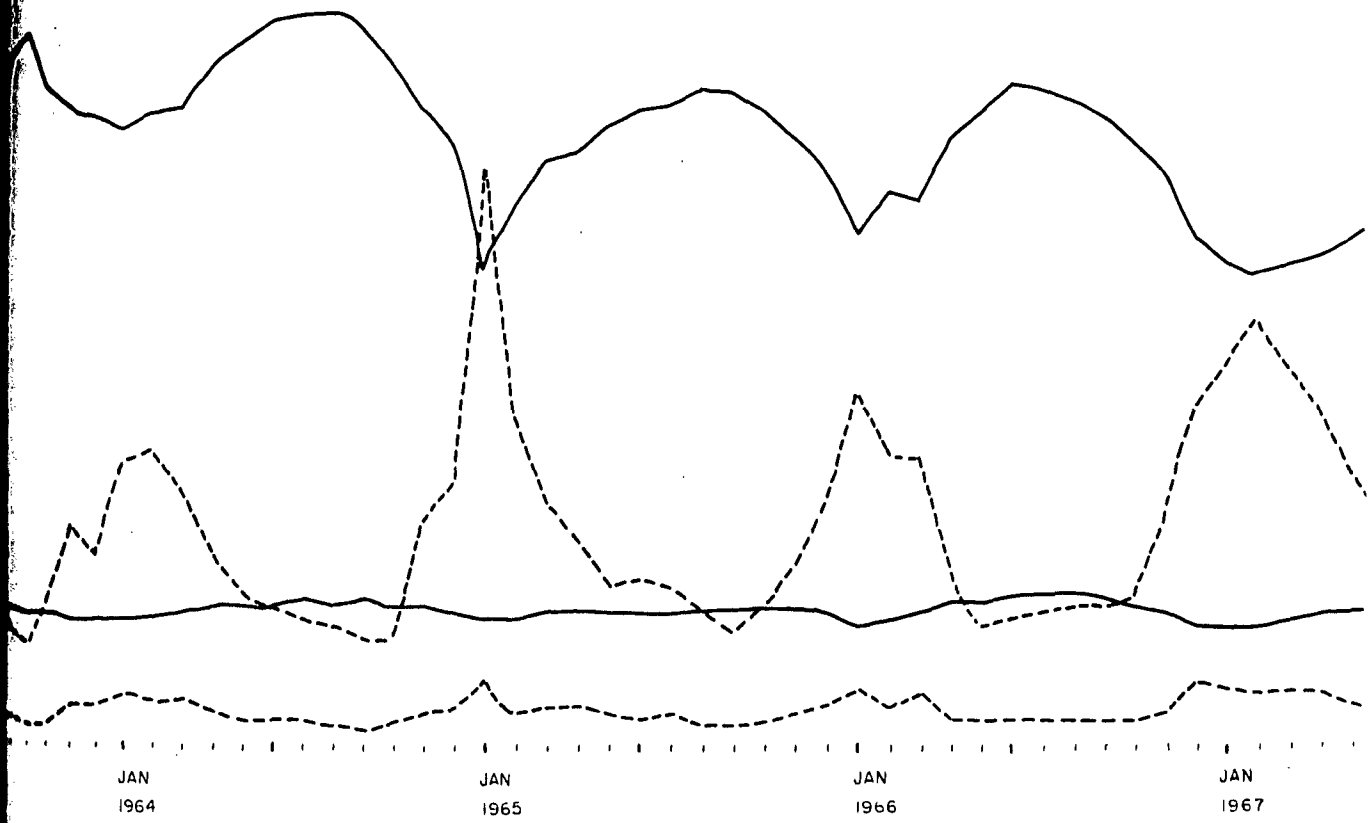

HUMBOLDT COUNTY "LUMBER" EMPLOYMENT
HUMBOLDT COUNTY UNEMPLOYED
DEL NORTE COUNTY
"LUMBER" EMPLOYMENT
DEL NORTE COUNTY UNEMPLOYED
JAN
1960
JAN
1961
JAN
1962

FIGURE 9

EMPLOYMENT ON THE NORTH COAST

SOURCE: CALIFORNIA DEPARTMENT OF EMPLOYMENT



In May of 1967 the State Department of Employment stated:

> "...the county's (Del Norte) lumber industry lost 200 jobs over the year (April, 1966 to April, 1967), and lumber employment is currently at its lowest April point since 1963."[8]

Some have contended that Del Norte County depends on the forest products industry more fully than Humboldt. In terms of jobs, this appears to be true. Del Norte also has suffered less job loss in the lumber industry from 1959 through 1966 (7.3% loss for Del Norte versus 20% in Humboldt).[9] Employment in the forest products industry is more stable at the present time in Del Norte than in Humboldt, but the difference is only in degree--both counties are suffering from declining numbers of jobs.

The Department of Employment reports that the total employment in Del Norte County remained unchanged from June, 1966 to June, 1967 because "job losses in lumber were counterbalanced by gains in trade and services."[10] This is but one indication that regional economic health is tied to more than the status of lumber manufacture.[11]

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[8] California, Department of Employment, North Coast Counties Labor Market Bulletin, Sacramento: April, 1967.

[9] California, Department of Employment, Estimated Total Employment, Unemployment, and Labor Force, Eureka Labor Market Area, 1959-1966, Sacramento: 1966, and Estimated Total Employment, Unemployment and Labor Force, Crescent City Labor Market Area, 1959-1966, Sacramento: 1966.

[10] California, Department of Employment, North Coast Counties Labor Market Bulletin, Sacramento: June, 1967.

[11] It might be noted that the north coast region is in a depressed situation in a state which has an unemployment rate higher than that of the nation as a whole. Luten suggests that this high level of unemployed in California is an indication of that state's attractiveness to immigrants; "the mobile American will still take a greater chance on being unemployed in California than elsewhere." See D.B. Luten, "California Revolution 1: The Dynamics of Repulsion," The Nation, Jan. 30, 1967, pp. 133-138.

Unemployment shows an upward trend in both counties, although less pronounced and more recent in Del Norte. Unemployed as a percentage of the total labor force in each county is seven to eight percent. (See Figure 9) Again, strong seasonality and the dominance of the forest products industries are indicated by the complementary behavior of the unemployment and lumber-employment curves. The State Department of Employment reports that "joblessness has risen to recession levels in most North Coast Counties."[12]

The last year and a half is a period of particular interest. The Department of Employment points out current trends have been definitely downward with corresponding months in 1966 and 1967 showing a depreciation of the job situation. This is more important, or more conspicuous, in Del Norte County where a formerly steady employment picture has been disrupted. A similar downward trend in Humboldt County is of greater magnitude.

It should be added that this general situation is well documented in reports by Zivnuska, Zivnuska, et al., and Arthur D. Little.[13] (See Table 17) Yet the forest industry, and the park antagonists as a group, never cite these studies--objectivity is not a characteristic of their position. As with the park protagonists, facts are emphasized and issues are advanced which best serve the group's purposes.

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[12] California, Department of Employment, North Coast Counties Labor Market Bulletin, Sacramento: February, 1967.

[13] Zivnuska, op. cit., Zivnuska, et al., op. cit., and Arthur D. Little, Inc., The Impact of the Proposed Redwood National Park on the Economy of Del Norte County, San Francisco: Arthur D. Little, Inc., 1966.

In contrast, the Kreager report on the economic effects of national park establishment predicts another aspect of future employment in the timber industry. Due to diversification in the industry and greater utilization of logs "approximately 2 people will work full time on the same amount of log cut that supplies one full time job today."[14] Kreager cites the Shelton Cooperative Sustained Yield Unit in Washington as an operation which employs twice the number of men per unit of timber cut as the same volume employs on California's north coast. Zivnuska agrees that diversification, specifically pulp and paper, will provide more jobs per unit cut, but complete industry employment on the north coast will be marked by declining jobs.

Kreager is arguing that the forest products industry will be providing more jobs per unit cut while Zivnuska has said a health industry must provide fewer jobs. (See page 78) Both men are experts, both approach their studies "objectively", yet the results are contradictory.

In summary, complete disagreement exists on such a basic question as numbers of workers employed per unit of stumpage cut. This confusion is not just one of magnitude, but involves the direction of employment efficiency. Various trends have been used by different parties in the controversy depending upon their point of view; each has cited the prediction which most closely ties into his own conception of the future. The Greater Eureka Chamber of Commerce endorses the Kreager report, which indicates the forest industries will provide more jobs in the future; the conservationists cite studies that tell of job loss in lumbering. Facts

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[14] Dewayne Kreager, Economic Factors Related to Redwood Park Proposals, Eureka: Greater Eureka Chamber of Commerce, 1966, p. 14.

Table 17

Reports Concerned with Employment
Which are Discussed in the Text

Report	Employment Trend	Area of Concern	Viewpoint on Park
Guthrie and Armstrong	Litter prospect of labor saving in the forest products industry.	Western U.S.	--
Zivnuska Zivnuska, et al.	-40% from 1958-1960 to 1975 in lumber and wood products.	Del Norte, Humboldt, and Mendocino Counties	--
State Department of Employment	Downward trend in forest industry jobs and upward trends in unemployment.	Del Norte and Humboldt Counties	--
Kreager	Diversification in forest industry will increase employment per unit of log cut.	Del Norte and Humboldt Counties	Antagonistic
Arthur D. Little, Inc. 1966	1964 employment of 2200 in lumber and wood products will decline to 1400-1550 in 1984.	Del Norte County	Favorable

are not used to determine an answer but to reinforce already formed opinions. One wonders whether any of the argument should bear on forthcoming events. The existence of such confusion casts doubt on the entire economic or fact-finding approach as the sole means of solving conservation problems.

Job Displacement

Estimates on job displacement by park establishment vary greatly. The multitude of park proposals contributes to the disagreement, but even without this added complication the guesses would not coincide.

Kreager estimates 750 jobs (440 initially and 310 in future years) would be affected by the Mill Creek proposal for a 43,000-acre park.[15] The National Park Service accepts only 235 job losses by this same proposal.[16] In the Senate Hearing Record for June 17, 1967, Landenberger says "that 440 jobs will be eliminated by this plan."[17]

Kreager's report estimates 1011 jobs lost (728 initially and 283 later) by diversion of forty-one thousand acres of private timberland to provide a fifty-three thousand acre park on Redwood Creek.[18] Planner Robert Posner, at the Redwood Park Seminar in Eureka on October 14, 1967, suggested 1000 jobs would be lost by diversion of sixty-seven thousand

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[15] Dewayne Kreager, Economic Factors Relating to Redwood Park Proposals, Eureka: Redwood Park and Recreation Committee, 1966, p. 27.

[16] U.S. Department of the Interior, National Park Service, A Proposed Redwood National Park (unpublished), see Senate Hearing Record for April 17-19, 1967.

[17] Landenberger's statement, Senate Subcommittee Hearings for Jn. 17, 1967.

[18] Kreager, op. cit., p. 29.

acres to give a ninety-thousand acre park on Redwood Creek, varying from Kreager's estimate for a smaller park unit.[19] Loss of the same number of jobs is envisioned despite the large variation in diverted land. The Arthur D. Little report of April, 1967 lends further confusion by predicting a maximum displacement of 290 persons if seventeen and one-half thousand acres of Redwood Creek and adjacent lands were put into a park. The vague nature of the discussion, however, leaves the reader with the idea that less than the maximum displacement would be realized.[20]

A large Redwood Creek park would involve the bulk of the property of Arcata Redwood Company, and presumably eliminate its present employment of 200. A similar situation exists on the Mill Creek site involving Miller-Rellim, a firm employing 140 persons. Additional job losses would be borne by other companies who own land which would be taken by the parks, and by small operators who buy raw materials from larger concerns, such as Arcata Redwood and Miller-Rellim. It has previously been questioned whether companies would be forced to close by park establishment.

The estimated sustained yield reduction caused by park establishment (page 24), and the 1961 employment per million board feet cut (page 80) were used by the writer to calculate a value for sustained yield employment reduction caused by park establishment. (See Figure 10) 180

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[19]Robert Posner; the title of Mr. Posner's talk was "The Probable Disruptive Effects of a Park on the Economic Stability of the Redwood Region."

[20]Arthur D. Little, Inc., op. cit., pp. 35-51.

jobs might be permanently lost by creation of a Mill Creek park and 450 permanent jobs might be eliminated by a Redwood Creek park. These are maximum values because of the expected increase in employment efficiency.

The multitude of caluclations in this matter suggest that displacement of workers would exist if and when the Redwood National Park is created. They fail to agree, and this is a suggestion of the uncertainty which the predictors themselves feel. Each estimate of job loss is made with the assurance that it is undoubtedly correct. The number of such estimates prevents them from all being so.

The wide disparity in estimates between those favoring a park and those opposing it indicates the self-serving nature of the guesses. (See Table 18) In such a problematic field as predictions of future employment, each side claims its study to be "factual." The discussion over employment trends lacks a concensus and offers no criterion for decision-making. The resolution of the Redwood National Park controversy is not furthered by such fact-finding analyses.

Figure 10
Estimated Employment Loss at the Sustained Yield Cutting Rate

Park Proposal	Estimated Loss of Annual Cut Due to Park Establishment	Employment per Million Board Feet Cut	Permanent Employment Displacement Caused by Park Establishment*
Mill Creek 43,000 Acres	19.8 Million bd. ft.	9.0	180
Redwood Creek 90,000 Acres	50 Million bd. ft.	9.0	450

*Figures in this column are the result of multiplying the middle columns together, i. e. (19.8)(9.0) 180, and (50)(9.0) 450.

Table 18

Job Displacement

Park	Acreage	Job Change by Park	Estimate Source	Viewpoint on Park
Redwood Creek	67,000	-1200	Landenberger	Antagonistic
Redwood Creek	67,000	-600	Sierra Club	Favorable
Redwood Creek	41,000	-1011	Kreager	Antagonistic
Redwood Creek	17,500	-290	A.D. Little	Favorable
Mill Creek	23,000	-550	Kreager	Antagonistic
Mill Creek	23,000	-440	Landenberger	Antagonistic
Mill Creek	23,000	-235 initially; +95 after five yrs.	National Park Service	Favorable

IX. Preservationists

Early Preservation of Redwoods

Early efforts at preservation of coast redwood stands were as unsuccessful as they were infrequent. During the first century of California settlement redwood was utilized for construction purposes, but the human population was so small and so restricted to the southern part of the redwood belt that the effect on the resource was trivial. "It can be said with some justice that prior to the Gold Rush, several decades of lumbering had succeeded in doing no more than nibble at the edges of California's vast redwood forests."[1]

With the Gold Rush and a great population influx, California became more demanding of forest products. As has been indicated by Schlappi, the intensive cutting of redwood lands began in the southern part of the main redwood belt and worked northward;[2] however, coast ports in the northern counties of Humboldt and Mendocino were well established by the 1860's.[3]

It is logical that the first rumblings for some sort of redwood preservation coincide with the increased lumbering activity. As early as 1852 Assemblyman Henry A. Crabb of San Joaquin County sought to have

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[1]U.S. Department of the Interior, National Park Service. The Redwoods. Washington: 1964, p. 16.

[2]Elisabeth Schlappi, Saving the Redwoods, Master's Thesis, University of California, Berkeley, 1959, pp.14-15.

[3]National Park Service, op. cit., p.16.

the California State Legislature ask for a Federal law "whereby the settlement and occupation of all public lands upon which the Red Wood is growing shall be prohibited."[4] Although it is doubtful this resulted from a preservation attitude in the contemporary sense of the word, it is nevertheless an indication of concern for the loss of redwood land to private ownership. It has been suggested recognition came early that redwood land would provide its owner with an easy means of income. The timber was ready and waiting and easily transformed into profit; there was not as much labor or risk involved as in agricultural land and there was not even the inconvenience of having to search for the land's resources as is true for mining claims.[5]

In 1879 United States Interior Secretary Carl Schurz recommended:

> "...that the President be authorized to withdraw from sale or other disposition an area at least equal to two townships in the coast range in the northern, and an equal area in the southern portions of the State."

This attempt seems more likely to have been prompted out of a desire to save non-logged redwood lands as Schurz was a conservationist in attitude. The later year (versus 1852 for Crabb) corresponds to a time in which the park idea was more developed; indeed, Yellowstone National Park had been created six years before. And a couple of years prior to Schurz's suggestion some efforts were being made toward a government park in the Santa Cruz Mountains near San Francisco.

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[4]Samuel Dana and Kenneth Pomeroy, "Redwoods and Parks," American Forests, May, 1965, p. 5.

[5]D. B. Luten, personal communication.

Although these early proposals were unsuccessful, their very occurrence does suggest that some people were already worried about losing all redwood lands to private ownership. The preservation attitude was expressed in the San Francisco Chronicle of April 13, 1884 is an editorial concerning the cutting of Contra Costa redwoods:

> "...Soon the whole neighborhood will be cleared of growing timber. Already the fairest and largest trees have fallen before fire, axe, and saw. Those magnificent pillars which form so strange a crown to the mountains, when seen from San Francisco and the bay are slowly disappearing."[6]

While the Government hesitated in these matters, private individuals took action, and the first preserved groves were privately-owned. Reasonably, the first reservations were in the Santa Cruz Mountains, an area of major redwood stands close to large human population centers.

One Joseph Warren Welch in 1867 purchased three-hundred and fifty acres of redwood forest in Santa Cruz County, and soon thereafter Henry Cowell, Sr., purchased the surrounding lands; their similar ideals on preservation of redwood forest led to the widespread fame of their grove, which was known as Welch Grove. This was the first redwood area set aside for public use.[7] Much later it came under state ownership as the Henry Cowell Redwoods State Park. (See Plate 5)

In 1874, the Armstrong family came to Sonoma County from Ohio, bought timberland for logging purposes, and operated a mill. The finest parts of the property were not cut, yet efforts to give or sell these lands to the state for park uses were unsuccessful. Finally in 1917 the

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[6] National Park Service, op. cit., p. 17.

[7] Schlappi, op. cit., p. 21.

county government purchased the grove, and eventually the state took possession, calling it the Colonel Armstrong Redwoods State Park.[8]

The Armstrong family attitude is an interesting one in that it combines utilitarian values and preservation. This attitude persists in the forest industry which has held uncut stands of redwood for eventual sale to the state as parks. In fact, the preservationist attitude pervades our entire society from park advocates to loggers.

The Bohemian Club of San Francisco bought a redwood grove near the Armstrong Redwoods in the final years of the nineteenth century; it has remained a private site for Club retreats.

The State government was to become involved in redwood parks. This was largely the result of efforts by citizens who became displeased with the private management of both commercial timberlands and of the established parks.

The story begins on November 10, 1877, when Ralph Sidney Smith (editor of the Redwood City Times and Gazette), was hunting in Santa Cruz County and became enraged at the logging practices he observed. Using his newspaper as a platform, he proposed the acquisition of twenty thousand acres at a cost of three-hundred thousand dollars for a government park. He envisioned monies donated from millionaires rather than state funds and stressed the need for haste in view of the heavy logging. The proposal was discussed and various alternatives were offered, but nothing materialized.

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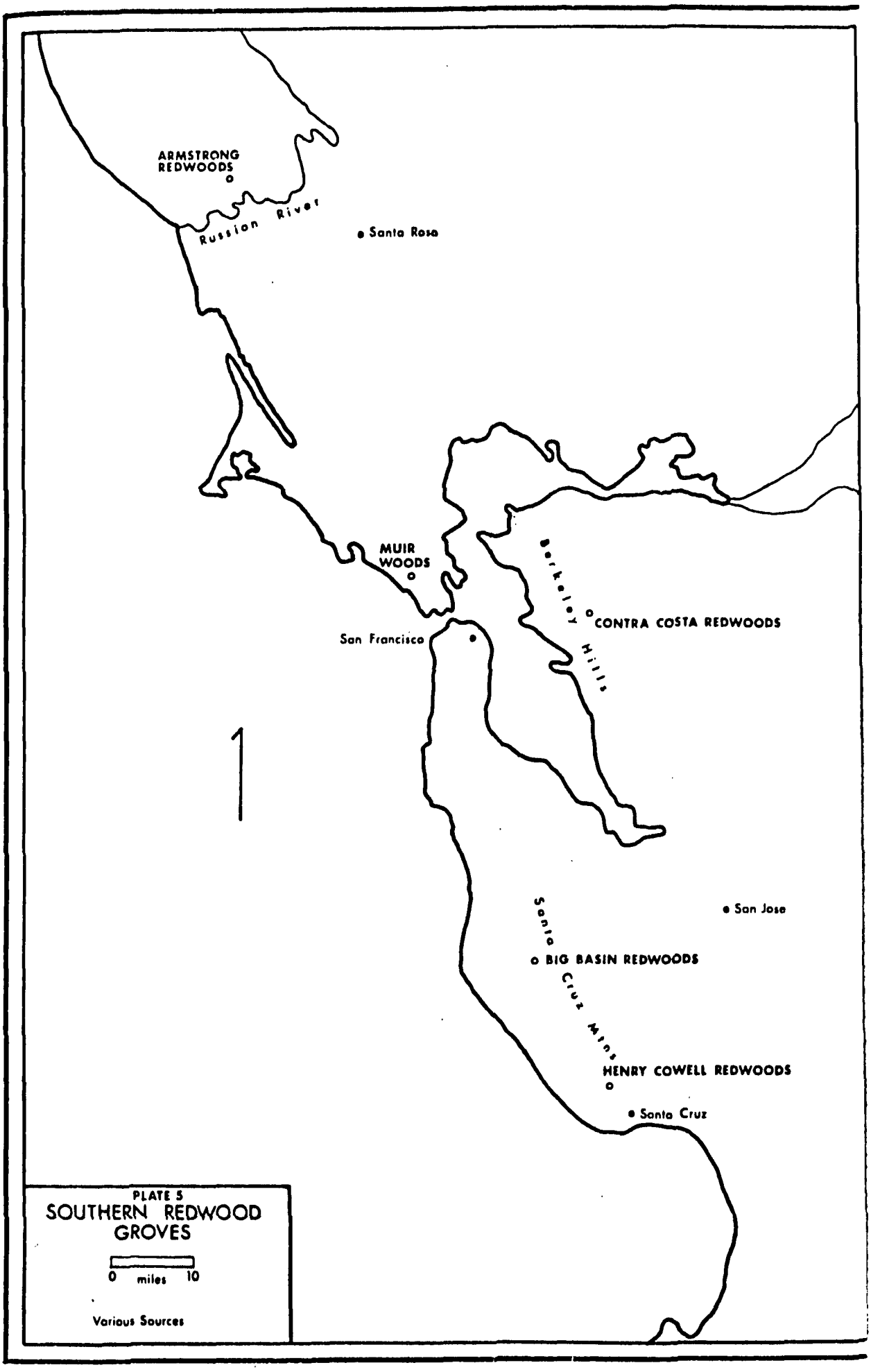
[8] Ibid., pp. 21-23.


ARMSTRONG REDWOODS
Russian River
Santa Rosa
MUIR WOODS
San Francisco
Berkeley Hills
CONTRA COSTA REDWOODS
1
San Jose
Santa Cruz Mts.
BIG BASIN REDWOODS
HENRY COWELL REDWOODS
Santa Cruz
PLATE 5
SOUTHERN REDWOOD GROVES
0 miles 10
Various Sources

It is interesting to note that the size of the proposal is what today would be called small; a similar comment might be made for the Carl Schurz proposal for two reservations of two townships (about forty-six thousand acres) each. Today's redwood state parks total more than one hundred thousand acres. The dispute over how much redwood land is necessary for parks is crucial in the current controversy, but the obvious size differences between the early proposals and contemporary ones should not be taken as an indication of more unreasonable park desires today.

The turn of the century was a time of developing attitudes toward preservation of landscapes, and that generation was not faced with the prospect of seeing the last of the virgin redwood forests cut in a decade or two. It is not surprising that larger parks are being demanded today.

The idea for a redwood park in Santa Cruz County was revived by a series of events which was instigated by an English photographer. Andrew Hill, in the fall of 1899 was commissioned by Wide World to photograph the redwoods and visited the Welch Grove, the most well-known area. Although Welch was away, Hill paid his entrance fee and took his pictures. When Welch learned of the photographer's actions, he became furious (for unexplained reasons) and demanded the negatives be turned over to him. Hill refused to cooperate and left the grove with a feeling that public ownership of such reservations was the only way to avoid such difficulties.[9]

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[9] Ibid., pp. 25-26.

Friends of Hill suggested he visit the Big Basin area in the Santa Cruz Mountains and he agreed. After seeing the beautiful forests, Hill grew fearful of the cutting of the trees and called a public meeting at Stanford to discuss the dilemma. A committee was formed from which grew the Sempervirens Club "to save the redwoods." Efforts were directed toward the state purchase of lands and in 1901 the California State Legislature authorized monies to buy Big Basin redwood acreage. Including private donations, the state had acquired nine-thousand acres by 1918. This became the California Redwood State Park and was the only such reservation in state ownership at the time.[10]

The National Park Service received their only redwood lands by donation. In 1903 Congressman William Kent bought a Marin County canyon in order to preserve its natural condition. To prevent a local water company from condemning the land for a reservoir, Kent donated it to the Federal Government and Theodore Roosevelt established the canyon as Muir Woods National Monument in 1908.[11] It remains so today; and although a national reservation, the redwoods of Muir Woods are not nearly as tall, as large, or as fine a forest as those in state parks in Humboldt and Del Norte Counties.

Congressman Kent later distinguished himself by fighting vigorously on behalf of the City of San Francisco and Hetch Hetchy reservoir. Opponents to the proposal were John Muir and the fledgling Sierra Club

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[10] Ibid., p. 27.

[11] See Roderick Nash, "John Muir, William Kent, and the Conservation Schism," Pacific Historical Review, 36, November, 1967, pp. 423-433.

with their own brand of conservation. That battle was a landmark in twentieth century conservation struggles which have been marked as much by opposing views of conservation as by "conservationists" battling "greedy exploiters."

The bulk of commercial redwood forest land had by this time passed into private ownership, a result of activity in the late nineteenth century in which, according to Dana and Pomeroy, illegal use was made of the Pre-emption Act, the Homestead Act, and the Timber and Stone Act. (See Plate 3) It has been suggested by some park protagonists that this fraudulent history increases the public's right to reclaim a portion of the redwood lands for public use. Others say that past frauds cannot be used as reason to take lands away from contemporary timber owners.

Hibbard's History of the Public Lands is the source for this claim of fraudulent action. That author suggests western timberlands were commonly lost by illegal use of public land acts, and the "most gigantic scheme reported by the commissioner" involved "100,000 acres of the choicest and most valuable lands in the Humboldt district."[12]

In addition to proposals for parks, there have been efforts to establish public commercial forests in the redwood region. In 1934 the National Forest Reservation Commission approved the principle of a Redwood National Forest of two-hundred thousand acres, and the news releases made it clear the forest was to be managed for direct economic development (logging)

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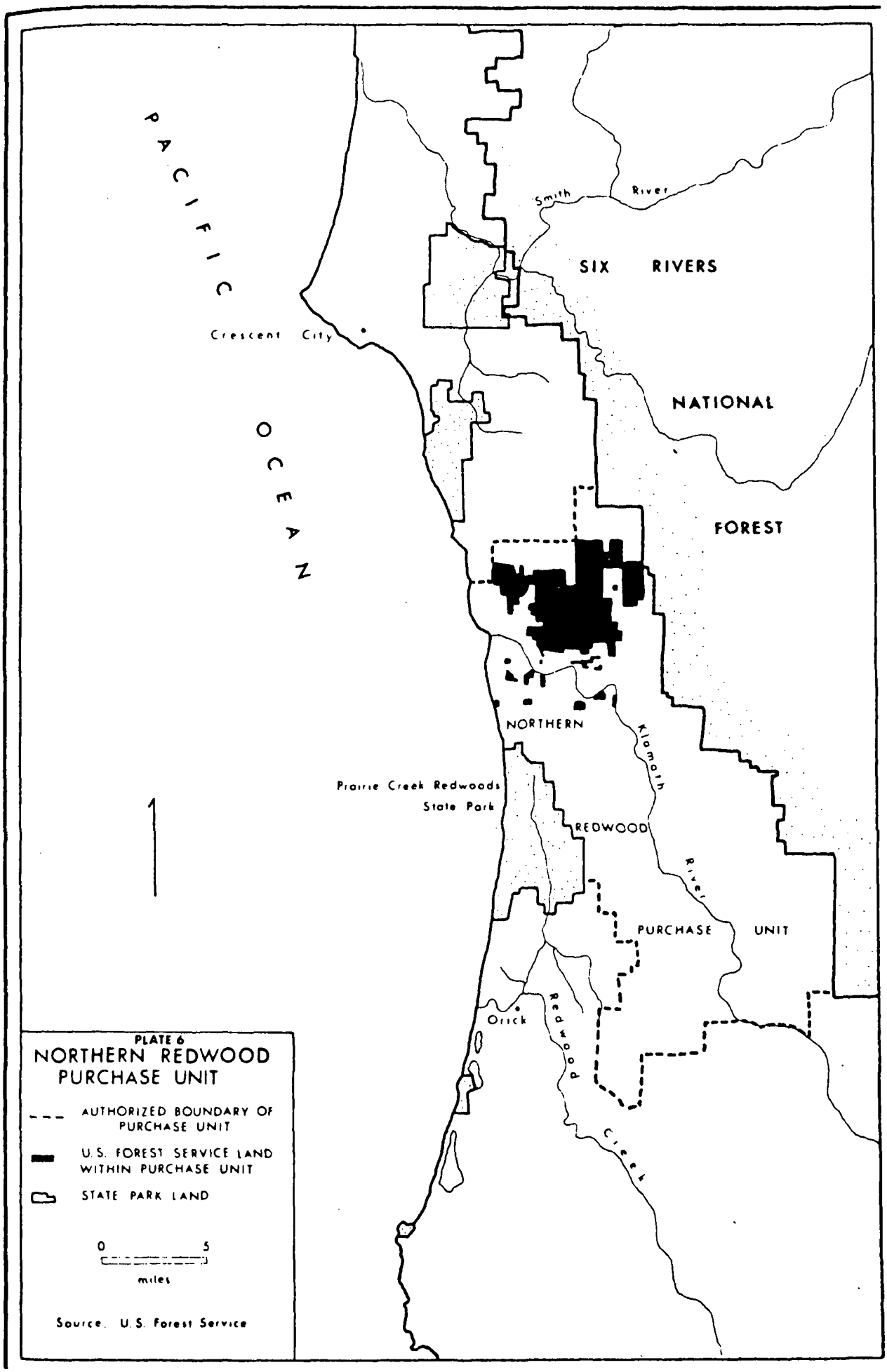
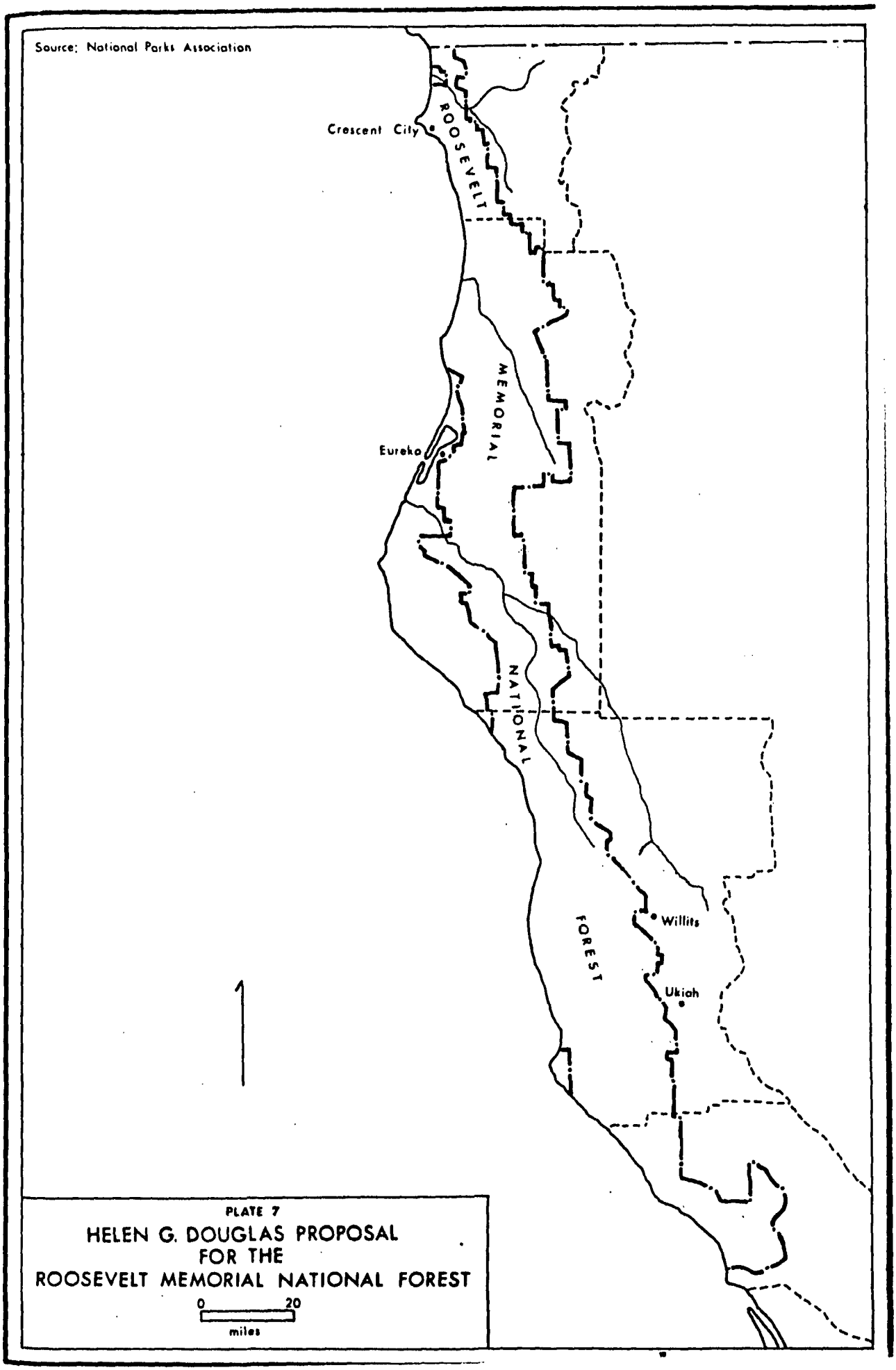
12 Benjamin Hibbard, A History of the Public Land Policies, Madison, Wisconsin: Macmillan Company, 1924, pp. 465-469.

and not as a park. This action was, curiously, in response to local pressure, which included a recommendation by the Mendocino County Chamber of Commerce. Later the Supervisors of Humboldt and Del Norte Counties added their approval. In light of the year and the economic conditions in the country, it is not surprising. It was probably hoped that federal action would "liberate" the growing stock in the forests for the mills and stimulate the economy. Today, in contrast, local interests feel federal action in their area would destroy their economic base.

The National Forest Purchase Units were established in 1935, by authorization of the National Forest Reservation Commission. The total acreage was more than eight hundred thousand acres, considerably larger than first proposed. Lands within the units were subject to purchase by the Federal Government in order to create the Redwood National Forest. A small amount of land was, in fact, bought (only 14,491 acres by 1945, and this remains today's acreage), but purchases were discontinued in the forties. Improved private forest practices and a lack of funds are said to be responsible for this inaction. The authorized purchase boundaries have subsequently been greatly reduced.

In 1946 a more ambitious proposal for a Redwood National Forest was proposed. Representative Helen G. Douglas of California suggested a two million acre forest (the Roosevelt Memorial Forest) extending from Sonoma County to the Oregon line, including commercial forest as well as three-hundred thousand acres of parks. Local and state government opposition as well as private land owner antagonism stifled the idea in 1946 and again in 1947. The State Chamber of Commerce used the argument that redwoods were already sufficiently protected in state parks.


PACIFIC
OCEAN
Crescent City
Smith River
SIX RIVERS
NATIONAL
FOREST
NORTHERN
Prairie Creek Redwoods
State Park
REDWOOD
Klamath River
PURCHASE UNIT
Orick
Redwood Creek
1
PLATE 6
NORTHERN REDWOOD
PURCHASE UNIT
AUTHORIZED BOUNDARY OF PURCHASE UNIT
U.S. FOREST SERVICE LAND WITHIN PURCHASE UNIT
STATE PARK LAND
0 5
miles
Source. U.S. Forest Service


Source: National Parks Association
Crescent City
ROOSEVELT
MEMORIAL
Eureka
NATIONAL
FOREST
Willits
Ukiah
PLATE 7
HELEN G. DOUGLAS PROPOSAL
FOR THE
ROOSEVELT MEMORIAL NATIONAL FOREST
0
20
miles

The Save-the-Redwoods League

It was not until after the Sempervirens Club expanded to become the Save-the-Redwoods League that redwood groves began to be saved in state parks. The League was created in 1918 with the expressed and self-evident purpose of redwood preservation. There was recognition that not all the groves could be saved from the saw, and this was not even deemed desirable. "Extreme nature lovers wanted them all saved," but League studies decided that only the finest areas should be preserved.

In 1925 two such areas were announced as objectives of the League: Mill Creek-Smith River redwoods (in today's Jed Smith Redwoods State Park) and the Humboldt Redwoods of Humboldt County. Two years later, Prairie Creek redwoods and the Del Norte Coast redwoods were added to the League's prime objective list, and "this plan has been the League's base of operation ever since and the organization has doggedly stuck to it."[15] This is perhaps a factor in the League's preference for the Mill Creek area for a national park; never has the group indicated an official interest in purchase of redwood lands in Redwood Creek. (See Plate 7)

However, the Madison Grant in 1920 indicated that the League was aware of the values of Redwood Creek. In discussing the areas with the characteristics of size, isolation, and compactness suitable for a national park, Grant said, "There are three such areas available: first, the groves along Redwood Creek...peculiarly adapted for a national park; second, the groves along the Klamath River, as yet untouched and of great

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[15] Schlappi, op. cit., p. 48.

beauty; third, the Smith River groves, in Del Norte County."[16] Although, the League has had fluctuating policy on federal activity in redwood preservation, concern for Redwood Creek is interesting. However, the League has never otherwise indicated support for a park on Redwood Creek.

One of the League's primary objectives in its early days was the securing of redwood groves along the Redwood Highway for state parks. The four prime project areas were, as they are today, along the highway; and the League's history tends to bear out this premise. The League has worked for the preservation of redwoods as scenic spectacles and the idea of wilderness preservation was absent. The other primary object of the League during the early years was the establishment of a "large" twenty thousand acre park, but the main concept was a string of small groves along the Redwood Highway.

Related to this and yet a separate question is the Save-the-Redwoods League's position on the entrance of the Federal Government into redwood preservation. One of the League's first acts was a survey of the redwoods by Mather and Madison Grant with the primary aim of selecting a Federal park site. Presumably the two areas deemed suitable were the Bull Creek-Dyerville Flats (in Humboldt Redwoods State Park) and the Smith River redwoods. It was in one of these areas that the League envisioned a twenty thousand acre large park previously mentioned. Once again is a suggestion that the League's preference for the Mill Creek site over Redwood Creek stems from its early policies.

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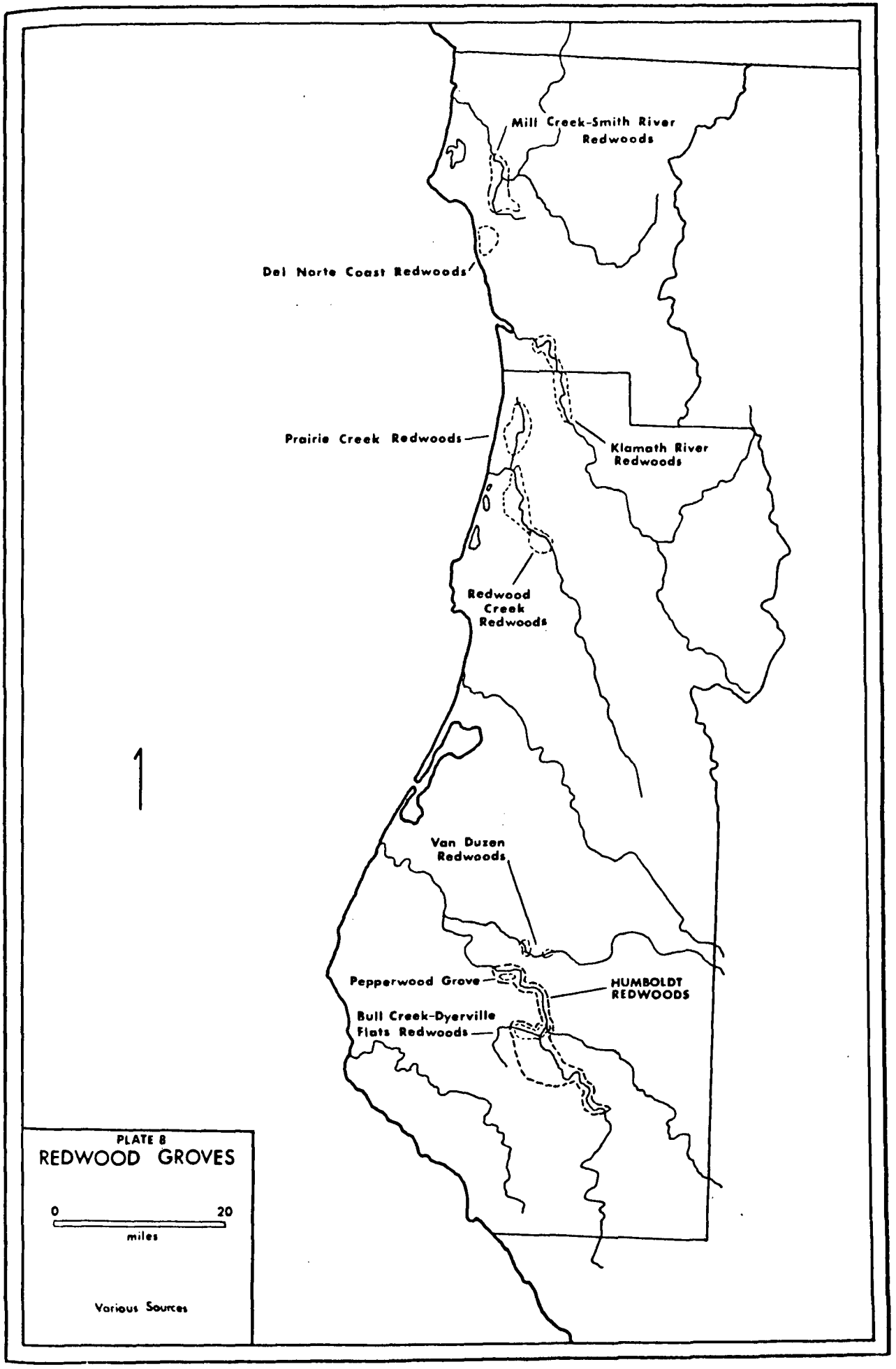
[16] Madison Grant, "Saving the Redwoods," The National Geographic Magazine, 37, June, 1920, p. 533.


Mill Creek-Smith River Redwoods
Del Norte Coast Redwoods
Prairie Creek Redwoods
Klamath River Redwoods
Redwood Creek Redwoods
Van Duzen Redwoods
Pepperwood Grove
HUMBOLDT REDWOODS
Bull Creek-Dyerville Flats Redwoods
1
PLATE 8
REDWOOD GROVES
0
20
miles
Various Sources

During these formative years, the League felt that even with state and private efforts the finest redwood stands could not be saved without federal aid. By 1932 their tone had changed; although Joseph Grant stated that a continuing aim of the League was the creation of a national park, "a majority of the League's leaders probably disagreed with him."[17] In 1934 the League moved in opposition to federal activity in the redwoods, the presumed reason being the remoteness of the controlling agency from League influence. The financial advantage of federal support was evidently recognized, but not considered significant.[18]

A similar opinion was expressed in connection with the proposed acquisition of redwood lands for national forests. The 1934 proposals for such a forest were supported by the League, according to Schlappi.[19] But the League actually said it supported the purchase of an important area for scientific study of problems relating to use and management of redwood forests. One may interpret this as support for a relatively small area for scientific study, but not for large purchases by the Federal Government.

The League was not united in urging this Federal action. Emanuel Fritz said he saw no need for the entrance of the national government into the redwoods, and another Councillor of the League expressed the

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[17] Schlappi, op. cit., p. 44.

[18] Ibid., pp. 44-45.

[19] Ibid., p. 119.

opinion that regardless of the programs of national park creation, the League should continue to support "permanent ownership and administration by the State."[20]

The League refused to support the 1946 Helen G. Douglas Bill for a Roosevelt Memorial National Forest. (See Plate 7) This was in spite of the fact that the amended form of the bill provided eased means of securing protected lands around desired park areas. One of the contributing factors in this policy decision was the possible loss of "friends", presumably the forest industry with which the League had always worked cooperatively.

Throughout the current controversy over national park establishment, the League has taken a stand in favor of the Mill Creek watershed. (Each of the national park proposals for the redwoods has been mapped and may be found at the end of the thesis. The grouping of the maps in one place facilitates comparisons and, as a group, the maps suggest the scarcity of a desired resource, which individually they could not.) This proposed park, of forty-one thousand acres, would encompass the Jed Smith and Del Norte Coast Redwoods State Parks as well as the remainder of the Mill Creek watershed area. It would involve the purchase from private ownership of some twenty-four thousand acres of virgin and cutover lands (9000 virgin, 15,000 cutover).

Several suggestions of the Save-the-Redwoods League's long-standing interest in the Mill Creek area have been made already. The area appears

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[20] Loc. cit.

to have undergone much more alteration by timber cutting than is the case in lower Redwood Creek; this should be a factor favoring the Humboldt County site. However, the League has indicated it feels the Mill Creek redwoods remain the finest example of virgin growth and are worthy of national park status. The League also expresses support of the Mill Creek site because of the variable tree species associated with redwoods, the complete watershed protected there and not in Redwood Creek, the ocean frontage as part of the proposed park, the area's ability to serve large numbers of people, and the proposed park's compact shape, simplifying administration.[21] One may say that the forests of Prairie Creek may be even more variable than those of Mill Creek because of the former's closer proximity to the ocean; a complete watershed may not always be necessary for downstream redwood grove protection,[22] the upstream Redwood Creek watershed area is slated for management restrictions so as to prevent damage in the downstream park area, and the redwoods along the Smith River itself have no upstream protection; the ocean frontage along Prairie Creek State Park is one of the most spectacular coastlines along northern California (the Gold Bluffs and Gold Bluffs Beach).

From the above analysis it may be concluded the League's overriding reason for favoring Mill Creek is its historical association with the area. This proposal has been shown to have been with the League since its conception, and the official statement of the League in the Senate

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[21] Chaney's statement in the Senate Hearing Record for June, 1966.

[22] Landenberger's statement in the Senate Hearing Record for August 17, 1966.

Hearing Record hints that this association is important.[23] A contributing factor may be the League's evident long-standing conservatism (not to be confused with "conservation"), even when saving redwoods. Such a feeling has been demonstrated in its fear of federal influence and, perhaps, in absence of conflict with the timber industry. A legitimate difference of opinion exists in the pro-park viewpoint as to the area most deserving of national park status. Spokesmen for the Save-the-Redwoods League insist the Sierra Club acts like a tyro in redwood preservation, and the League's long history indicates its superior capabilities.

The League feels it has a successful approach to the saving of old growth redwoods. Whereas other groups may loudly cry for a large Redwood National Park and federal spending, the League has quietly gone about soliciting money and purchasing redwood. The results are proven and permanent. The League has not changed its attitudes during the national park controversy. Since 1963 when the controversy began, the League has spent over five million dollars in purchases exceeding twenty-two thousand acres for redwood parks. The League may arge that the more militant nature of the Sierra Club has benefited the League and its goals, but insists that such action is contrary to the best interests of the League.

Characterization of the League as "moderate" in its conservation activities is a reflection of its viewpoint. The League insists the goals of the Sierra Club are no more preservation-oriented than its own. The League disavows strong frinedship with the lumber industry. Rather, redwood preservation by the League is seen as best served by trying to cooperate

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[23]Chaney, op. cit.

as much as possible with "the opposition." The substantial acreages purchased through the past fifty years are pointed to with pride.

In addition to its more "practical" viewpoint, the League says parks already established should be completed before embarking upon new proposals. It is for this reason, in part, Mill Creek is favored over Redwood Creek. Such a policy of completing projects before beginning new ones automatically limits the scope of a preservation program.

And, the problem of financing authorized parks is an indication to the League that "realistic" plans should be pursued. The rounding out of the four north coast redwood parks will involve over fifty-seven million dollars. To the League, such a financial barrier poses enough difficulty without taking on a Redwood Creek park exceeding one-hundred million dollars.

The Save-the-Redwoods League's support of any national park proposal may be surprising in view of its historical sentiment against federal activity. Schlappi says: "In short, when the League saw that the state could provide adequately for redwood parks, it dropped its goal of a national redwood park."[24] Chaney says bluntly "since its organization in 1918 the League has advocated a Redwood National Park," but this is too simply worded to be true.[25]

The original proposals and goals of the League have been largely accomplished, although the current program, more ambitious than the

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[24] Schlappi, op. cit., p. 45.

[25] Chaney, op. cit.

original, is not completed. (See plates in appendix.) In the list of acquisitions proposed by the League a substantial acreage remains in the Mill Creek area, and Chaney states: "With the present rate of cutting and the increased cost of redwood stumpage it appears that without federal aid it will be impossible to complete this fine project before it is too late."[26] Part of this desire for more lands than in 1918 stems from the League's recent program of acquiring complete watersheds. Lower Bull Creek Flats lost many of its finest trees when Bull Creek flooded in 1955, a flood due in part to the denuded watershed upstream. This is a very inflammatory issue, but certainly the repeated burning and poor logging techniques in the upper watershed played an important part in the flooding.[27] Because the League was upset by this loss of "saved" trees, purchase programs for complete watersheds were thought necessary. In fact, the League has looked favorably upon federal aid to implement this policy.

To sum up, the Save-the-Redwoods-League seems to have reversed its position on federally financed purchase programs. It now apparently feels redwood acreage must be bought by government agencies, even if this means the loss of local park control.

Before leaving the Save-the-Redwoods-League, one last question might be posed. The League has spent 14 million dollars in land purchases, and

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[26] Ibid.

[27] Even the California Redwood Association admits logging added to the downstream flooding and erosion. See California Redwood Association, Questions and Answers About the Redwoods, San Francisco: California Redwood Association, undated, especially Question 19.

through the half century this action has undoubtedly acted against establishment of a large national park by making preservation a continuing fact. Might have League efforts in other directions (e.g., lobbying) resulted in park areas equal to, or even more extensive than those of today? It seems certain, however, the very large financial support from individuals and groups would not have been as great if the League had assumed the role of an active conservation organization.

The Sierra Club

The Sierra Club's role in the Redwood National Park controversy is different from that of the Save-the-Redwoods League, the Sierra Club being a recent arrival as a major participant in redwood preservation.

During the early sixties the Sierra Club was much concerned with the routing of freeways through state parks. This played a part in focusing attention on redwood preservation, but certainly this interest in highways was not, per se, a factor in creating concern for a national park. The Sierra Club book entitled The Last Redwoods was released in Spring of 1964, and this combined the concern for a large national park and freeway routing through established and proposed parks. The idea expressed was that only Federal ownership could prevent highway encroachment into state parks. The Last Redwoods, an article in the July, 1964 National Geographic Magazine on redwoods (including the discovery of the "tallest-in-the-world" tree on Redwood Creek), and the National Park Service study of the redwoods were basic forces in concern for redwood preservation and a national park.

It was also about this time Arcata Redwood Company clearcut virgin redwood stands adjacent to U.S. Highway 101 immediately south of Prairie Creek State Park. Although defended by the company as good forestry, the leveled forest infuriated landscape-sensitive people.

The Sierra Club Bulletin for September, 1963, published before the big efforts at national park establishment, saw the necessity of federal financial aid for future redwood grove preservation. This was considered vital because of the high costs involved in land purchase. The Sierra Club has consistently proposed the largest park areas throughout the redwood park controversy. It seems to be uninhibited by the thought of federal entrance into this area, although some may feel the status of "national park" will bring in too many people and overcrowd the redwood country.[28] But certainly with the large acreages suggested by the Club, only Washington could pay the bill, and this is fundamental in the Club's position.

Just prior to release of the publications mentioned above, the Sierra Club formulated a list of purposes it considered of prime importance in redwood purchases. The three general categories are: (1) protection of virgin redwoods in watersheds of existing state parks, (2) acquisition of non-virgin forest lands in watersheds upstream from state parks, and (3) securing additional lands for recreational development to "enhance the values of the redwood parks." Specifically the Club proposed acquisition of the Mill Creek watershed, some old growth north of Jed Smith,

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[28] The writer feels this is a very real threat.

lands west of Prairie Creek Redwoods State Park, the Van Duzen Redwoods, Pepperwood Grove, and cutover lands in the watersheds of the smaller state parks. (See Plate 6) All would be additions to, and portions of, state parks; they are essentially the components of the Save-the-Redwoods League program of acquisition. In addition to these lands, the Sierra Club suggests a "large national preserve."[29] As of May, 1964, no firm commitment had been proposed for the site of the national park. This may have been held back pending completion of the National Geographic Society study.

After that work had been released and recommended at most a fifty-three thousand acre park on Redwood Creek, the Sierra Club indicated the proposals fell short of the minimum necessary for a park. Other policy statements in Fall, 1964, and early 1965, indicated the Sierra Club considered Redwood Creek the best site, but the proposals were "inadequate."[30] In addition to the Redwood Creek park, the Club believes "that it is equally imperative that the entire watershed of Mill Creek be preserved as a redwood park." Thus, the Sierra Club wants everything the Save-the-Redwoods League suggests plus a ninety-thousand acre park on Redwood Creek.

The official proposal which the Federal Administration decided to

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[29]Edgar Wayburn, "Sierra Club Policy on the Last Redwoods," Sierra Club Bulletin, 49, May, 1964, pp. 10-11.

[30]Clyde Thomas, "The Redwoods Report: A Proposed National Park," Sierra Club Bulletin, 49, November, 1964, pp. 10-13.

endorse was not Redwood Creek, but the Mill Creek and Smith River redwoods. This was hinted at in March, 1965 and made firm a few months later. In doing this, the Federal Administration turned its back on the professional report of the National Park Service and proposed a forty-three thousand acre park in an entirely different area. The reasons for this switch have not been explained, but many feel it results from costs of acquisition. However, it is not as simple as it may appear. The largest plan proposed by the National Park Service was fifty-three thousand acres, other plans were in the range of thirty-thousand acres, all for Redwood Creek. Smaller park projects have been proposed by others for Redwood Creek.

The change in site location may also have involved a comparison of lands that could be gained for a given unit of money in each area. (Does this suggest that if more lands can be had in Mill Creek for the same price as a lesser acreage on Redwood Creek that the former area is more extensively cut over?) Another factor quite apart from the costs of purchase may involve political feasibility. Lack of the local Congressman's support acts strongly against proposals that involve large acreages. Possibly the big Humboldt County lumber concerns have exerted influence to transfer the site to neighboring Del Norte County and its land owners.

The Sierra Club has placed itself in the position of opposing the current Administration proposal for a Redwood National Park. Instead it has insisted that if insufficient funds are available to provide a large Redwood Creek park, a smaller park in the same area is the only alternative.

Whereas the Save-the-Redwoods League might be described as "realistic," the Sierra Club feels its own program presents the "facts". The Club

pursues what it considers "right" without regard to practicality. This is held to be a more "honest" approach to conservation controversies, in which compromise usually means defeat for the conservation viewpoint.

It has already been suggested why the Club wants federal action in the redwoods (i.e., money), but a Redwood Creek location for the proposed park is more involved. Basically, the Sierra Club feels (1) the finest unprotected stand of virgin redwoods is in Redwood Creek (including the current "tallest tree"), (2) the ocean beach and herd of Roosevelt Elk are outstanding additions to the redwoods in this area, (3) greater ecological unity (i.e., entire watershed ownership or land use zoning control), (4) and greater recreation potential with minimal visitor impact on the landscape.[31] Maps published by the National Park Service does show that Redwood Creek contains the largest area of uncut, unprotected redwood forest on alluvial bottoms. As the Park Service report points out, those forests north of the Klamath River are inappropriate for the best park because they contain a high percentage of Douglas fir and the shape and topography are detrimental factors.[32]

The entire watershed would not be within the park, however, as is the case for Mill Creek. Yet much of the finest redwood growth in the latter site is along the Smith River, and this stream has no upstream protection for the park site. Conceivably, the Sierra Club has designs on the entire Redwood Creek watershed for park purposes so that eventually the ecological unity would be complete.

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[31] Edgar Wayburn and Michael McCloskey, "Plans for a Redwood National Park," Sierra Club Bulletin, 50, May, 1965, pp. 3-6.

[32] National Park Service, op. cit., p. 38.

Other Proposals

The National Parks Association, a Washington, D.C. group of over thirty-thousand members, offers a joint national park-national forest proposal. The park is simply a combination of the Administration proposal and the National Park Service Plan I for Redwood Creek. (See appendis) This in itself is an ambitious plan, but in addition the Association advocates creation of a national forest to encompass most of the remaining redwood lands north of San Francisco. The rights of the Federal Government to secure lands within the forest boundary would be limited to donation or purchase without the exercise of eminent domain. It is difficult to imagine a proposal of greater ambition than this, for nearly all privately owned redwood land would be involved. The National Parks Association easily qualifies as the organization with the strongest attack on the status quo.[33] (See Plate 8)

Forest consultant Rudolf Becking offers a "Regional Redwood Park Plan" involving a seventy-four thousand acre park on Redwood Creek, equivalent to the Sierra Club ninety thousand acre proposal but not including the Prairie Creek State Park. In addition to this, Becking suggests that sixty-two thousand acres along the lower Klamath River be designated as a "wild river area," with maintenance of primitive conditions as the primary objective. The wild river would be north of and adjacent to the park unit. South of the National Park, Becking envisions a "Southern

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[33]Anthony Wayne Smith, "Raising the Sights for the Redwoods," National Parks Magazine, 40, November, 1966, pp. 17-19.

Recreation Area" of seventy-five thousand acres to provide general outdoor recreation. The total acreage of the three-unit plan is nearly two-hundred and twenty thousand acres.[34] (See appendix)

What some consider a compromise program has been suggested by the organization, Conservation Associates of San Francisco. This idea involves the Humboldt Redwoods State Park and additional federal and private lands to the west so as to have a national park from the Pacific Ocean across the Mattole River drainage into the South Fork of the Eel River. It would include the Bureau of Land Management's "Kings Range Conservation Area." The plan would preserve essentially no new virgin redwood acreage, the land to be purchased being either cutover or cover types besides redwood. The core of this national park would be the Bull Creek-Dyerville redwoods (in Humboldt Redwoods State Park), one of the two areas described as ideal for national park status in the twenties by the Save-the-Redwoods League.[35] The justifications for this proposal are quite interesting, as noted below.

Conservation Associates is a newly-formed group without membership and publicly having the single goal of its redwood park plan. It is said the group's real interest is the Point Reyes National Seashore. Monies for final acquisition have been difficult to secure, and a new expensive national park would further hinder purchases at Point Reyes. It has been suggested this reasoning is behind the Conservation Associates position

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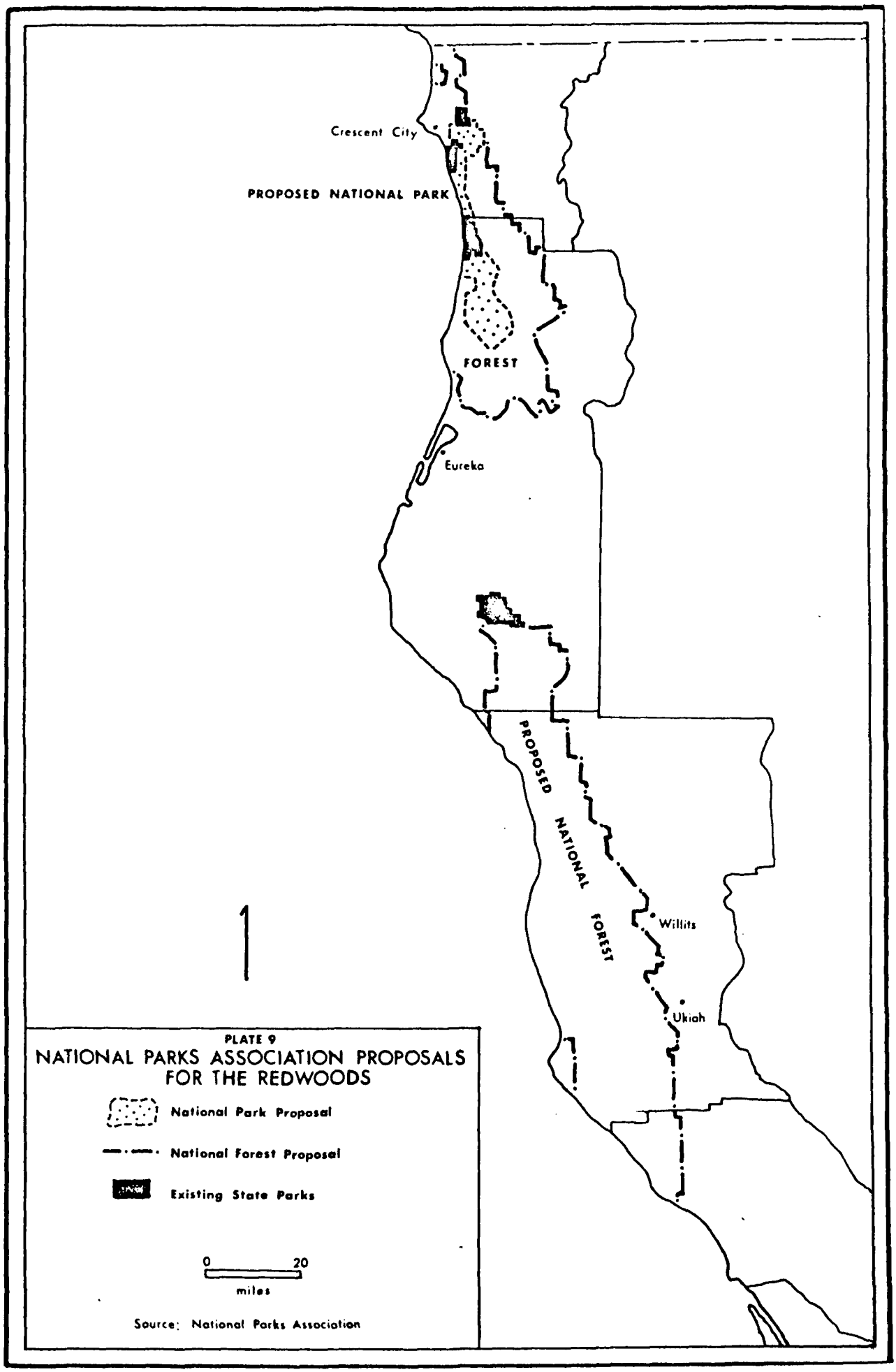
[34]See Rudolph Becking's Senate Subcommittee Hearing Record for June, 1966.

[35]Schlappi, op. cit., pp. 42-43.


Crescent City
PROPOSED NATIONAL PARK
FOREST
Eureka
PROPOSED NATIONAL FOREST
Willits
Ukiah
1
PLATE 9
NATIONAL PARKS ASSOCIATION PROPOSALS FOR THE REDWOODS
National Park Proposal
National Forest Proposal
Existing State Parks
0
20
miles
Source: National Parks Association

for an inexpensive, compromising Redwood National Park.[36]

Various other proposals of one sort or another have come forth, including slight variations on the basic Redwood Creek, Mill Creek, and Humboldt Redwoods State Park-to-the-sea plans.

The forest industry, which owns essentially all the major acreage of commercial redwoods, has proposed a plan to sell eight thousand acres of prime virgin old growth as additions to state parks, and open up two-hundred and thirty thousand acres of their own lands to recreational use.[37] (See Plate 9) The industry has cooperated by holding onto fine groves of redwoods, while paying taxes on them, until they could be purchased for park purposes. It cannot be overstated that this has been a gesture of foresight and understanding of the public good. As noted previously, the redwood lands were originally owned by the federal government and passed into private hands by graft and illegal use of various statutes. The question of who deserves the applause for restraint is not as simple as may first appear.

The congressman whose district includes the Del Norte-Humboldt County area, Don Clausen, is advocating a park proposal which he calls "redwoods-to-the-sea." On the north coast his plan envisions a national redwood park and seashore consisting of Jed Smith, Del Norte Coast, Prairie Creek, Dry Lagoon, and Patricks Point State Parks connected by thin strips of purchased lands, primarily along the coast. The forest products industry looks upon the plan with favor because very little private old growth

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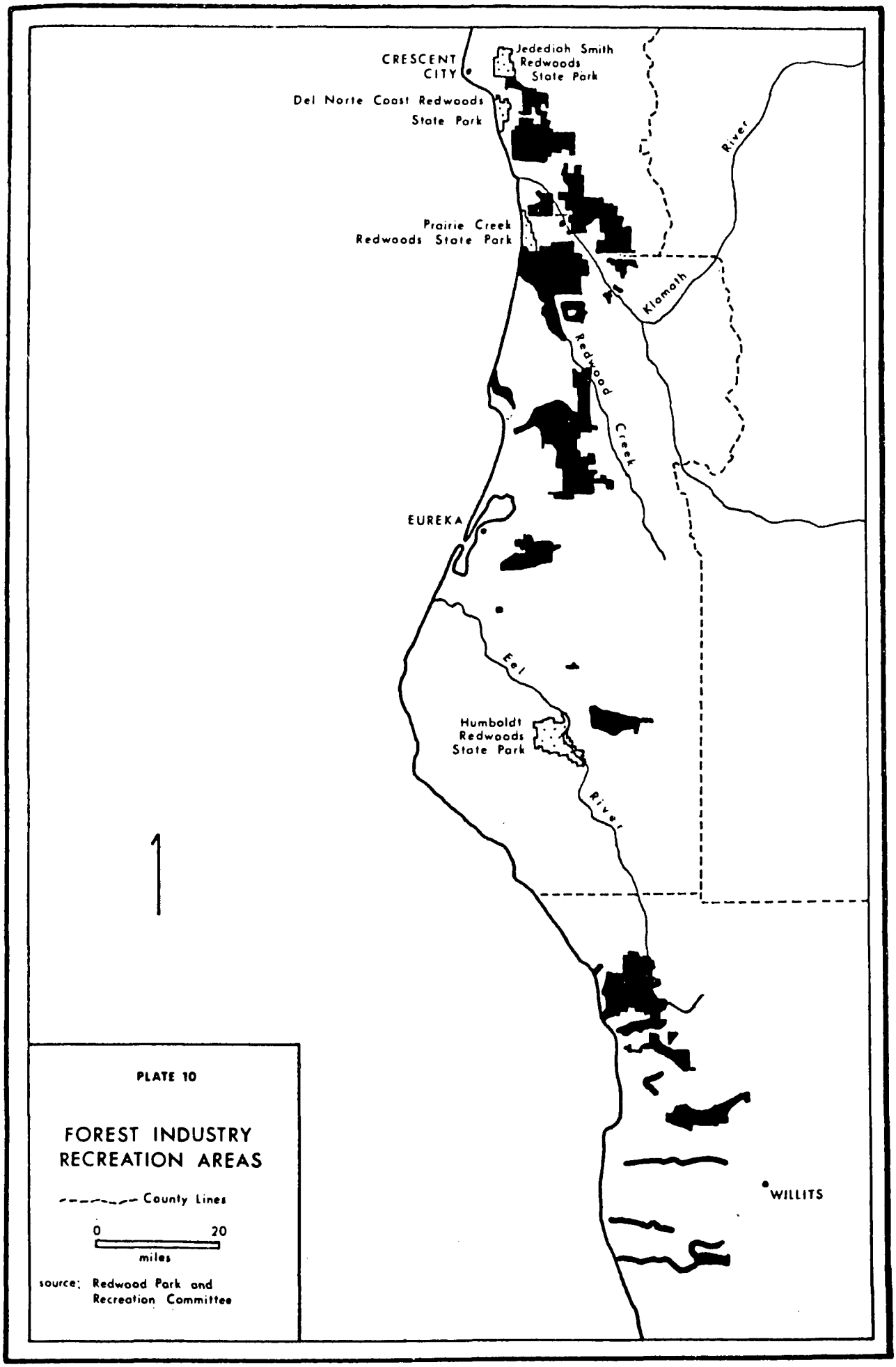
[36] Gordon Robinson, personal communication, May, 1968.

[37] See Redwood Park and Recreation Committee, The Redwood Park and Recreation Plan, Eureka: Redwood Park and Recreation Committee, undated, 24 pp.


CRESCENT CITY
Jededioh Smith Redwoods State Park
Del Norte Coast Redwoods State Park
Prairie Creek Redwoods State Park
Klamath River
Redwood Creek
EUREKA
Eel River
Humboldt Redwoods State Park
WILLITS
PLATE 10
FOREST INDUSTRY RECREATION AREAS
County Lines
0 20
miles
source: Redwood Park and Recreation Committee

timber is included. Congressman Clausen says his proposal "combines the very best of all proposals" and "is a regional plan" as it conceptually includes Humboldt Redwoods, the Kings Range Conservation Area, Point Reyes National Seashore, Mt. Tamalpais State Park, and Muir Woods National Monument. Exactly what this means, if anything, is unclear, except that a map of "the regional plan" looks quite impressive, but adds nothing to these already established park units. If one's interests include more park lands, this plan would not generate much enthusiasm; if, on the other hand, one's purpose is to maintain the status quo, this plan offers much.[38]

One proposal, which has had essentially no serious review, is to extend Big Basin and adjoining redwood state parks to the Pacific. The state already has a broken ownership of lands in this area (with a park in mind), but with the proximity to the metropolitan San Francisco area, land costs would be high. It must be said that the redwood forest is not of the same order of majesty in this part of its range.

There have also been suggestions for a national parkway through the entire redwood region (is this reminiscent of the early days in the Save-the-Redwoods League?) as well as offers to leave everything in the status quo. Conservation Associates (1960) reports that the latter is the general position of the county governments. This is in marked contrast to the local government position during some of the national forest purchase proposals, although the ends in each case are similar. The county governments pursue programs which will result in more conventional

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[38] See The Redwoods-to-the-Sea Citizen's Committee, Redwoods-to-the-Sea, Eureka: The Redwoods-to-the-Sea Citizens Committee, undated.

economic activity, i.e., programs that will send the most trees to the mills. The counties approach the redwood controversy, like everyone else, with their own purposes in mind.

The Senate-passed bill, S. 2515, (approved by the full Senate on October 10, 1967) includes three units: (1) in the north Jed Smith and Del Norte Coast Redwoods State Parks would be joined by a neck of purchased land and the coast line to the south of Del Norte Coast Redwoods State Park would be bought; (2) Prairie Creek Redwoods State Park would be enlarged to the north and south along the coast; and (3) 32,474 acres of old growth redwood would be purchased on Redwood Creek, Lost Man Creek, and Skunk Cabbage Creek. The bulk of new lands to be bought are in the area recommended by the National Park Service professional report and by the Sierra Club.

This bill cannot properly be thought of as an adjusted form of the administration proposal. Secretary Udall has indicated the executive branch would not oppose the purchase of such lands, although officially the administrative proposal remains unchanged. The Senate bill provides for the exchange of the federally-owned redwood purchase unit lands for privately-owned lands in Humboldt County desired for park purposes; this interjects the United States Forest Service into the picture and further complicates the conservation groups' position. This is discussed in another section.

The House-passed bill (approved by the House of Representatives on July 15, 1968) provides for a 28,400 acre park consisting primarily of ocean frontage connecting Del Norte Coast Redwoods State Park and Prairie Creek Redwoods State Park. A narrow strip along Redwood Creek is also

included. The outline most closely resembles the proposal of Congressman Clausen but even falls short of that modest plan. Park proponents are not at all enthusiastic (the Sierra Club calls it "a travesty")[39], and there was some suggestion that preservationists would vote against it on the floor. The House-Senate Conference Committee must decide upon the final park form, and it is expected to call for a larger park than that of the House bill.

Purposes

The basic question underlying the entire redwood park controversy is one of purpose. Specifically, what are the purposes of a national park, and how does each proposal and position meet these purposes?

What is a national park supposed to accomplish? An investigation of some of the legislation authorizing national parks suggests some purposes. The act creating the National Park Service (1916) declares that the aim of the Park Service is:

> "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The dual idea of preservation of natural features and use by people of those features is expressed: the park is pictured as a great outdoor museum wherein one may see, feel, and experience the natural scene without altering it. The act establishing Yellowstone National Park (1872) uses the phrase "public park or pleasuring-ground," and this

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39"House Passes Redwoods Park Bill," San Francisco Chronicle, July 16, 1968, p. 1.

suggests a somewhat greater field of purpose, taking in a general notion of use. Recreation (i.e., "pleasuring" in general terms), however, is not a proper part of national park use, except as it leads to enjoyment of the "scenery and natural and historic objects" and only to the extent that these objects are "unimpaired" by that use. In any event, this is what is implied by the wording in the early acts. It is not the author's intent to argue the role of recreation in the national parks, but the point should be made clear that the organic statute emphasizes preservation and not "outdoor recreation." The existence of other area designations in the National Park System (e.g., national recreation areas) suggest that national parks are something quite special.

Ideas develop and change, of course, and what was early envisioned as proper national park use might or might not be applicable today. In certain respects changes are obvious; consider early permissive regulations concerning wildlife and contrast with the very strict principles enforced today.[40] Recreation's role in the parks is indefinite and lacks a clearly-defined, persisting principle. The personal beliefs of individuals with responsibility plays a role, ranging from the more "purist" attitude of Park Director Drury in the 1930's to more "development" leanings during the Eisenhower administration.

In addition to the language of early laws in national park history and to the subsequent changing ideas about parks, another pattern should be noted. Ideals about the nature of national parks and political support in order to be realized. In the past, as today, such support has not

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[40] Early park regulations provided for elimination of predatory animals. The reversal Park Service policy toward protection of all wildlife has been developing since 1940. The recent Leopold Report on wildlife management in the parks is an indication of a strong preservation policy.

always been given. The people deciding controversies involving parks are often swayed by the pressures of the moment. The resulting decisions are consequently not guided by the principles given in laws. Differences of opinion about the best site for a Redwood National Park is in part an illustration of this fact. Mill Creek is looked upon as the politically feasible site. Its advocates say their position is more realistic and practical when considering the "pressures of the moment." The Redwood Creek site is championed by those who suggest no other area is so much in keeping with national park ideals.

Certainly there has developed through the nearly one hundred years of the parks an obvious general concern for preservation of the natural scene without outdoor recreation in the "resort" sense of the word. Where such activity does exist in the parks it is the result of very early establishment in the park (e.g., Yosemite), or it was present prior to creation of the park (e.g., Grand Teton). Recent trends continue the "preserve" concept of the parks; outdoor recreation compatible with, and adding to the understanding of such park purposes is recognized as a broad and varied grouping of activities. It is apparent that national parks are conceived as reserves of natural objects and not as centers primarily <u>for</u> outdoor recreation, although outdoor recreation in a limited sense looms large in the National Park Service picture of its purposes.

There have been recent indications that the Park Service feels it may have gotten too far into the "recreation" business, and this development is best indicated by policy changes in Yosemite National Park. Long overcrowded, Yosemite Valley takes on a slum-like atmosphere during the summer season. In an effort to reduce the congestion, the National Park

Service has proposed elimination of activities which are nonessential to enjoyment of the natural features. The famous firefall, "vaudeville" entertainment at campfires and river floating on rafts are to be eliminated. Other measures designed to handle Valley crowds include one-way roads, shuttlebus service, further restricting the number of campsites, and requiring reservations for camping.[41] All these things indicate a fear of overuse of park lands. In uncrowded parks, nonessential uses might be tolerated. But when use becomes the greatest threat to the natural scene, controls on the nature of use become necessary. Such crowding suggests, as it would for other resources, a full land which lacks the emptiness necessary for irresponsible acts.

If a Redwood National Park is deemed a desirable thing it should protect redwoods and the redwood community. Considerations of recreation potential are really irrelevant, except in the political world where great recreational possibilities make a given proposal more feasible. All of the proposals mention recreation potential, including those of the Sierra Club and the Save-the-Redwoods League. But the Conservation Associates' plan provides the most obvious example about national park purposes and recreation. The head of the California State Resources Agency has described the factors favoring the Conservation Associates site: (1) "best year-round weather conditions;" (2) "best terrain and soil conditions to allow for maximum carrying capacity;" (3) "greatest possibilities for

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[41] See "Uncrowding Yosemite Valley," San Francisco Chronicle, January 9, 1968, pp. 1, 19.

roads and trails;" (4) "potential for high-intensity recreational uses." A fifth and sixth factor deal with the economic and scenic aspects.[42] It is legitimate to ask what these items have to do with selection of a national park site.

Another purpose that is suggested is the economic enhancement which the increase in tourism will bring about by park establishment. This, too, is argued by people favoring both large parks and small ones, but it seems out of place except, again, in the political world.

The general tone of both the Sierra Club and the Save-the-Redwoods League arguments adhere to the idea that outstanding examples of the redwood type should be included in a national park; they disagree as to where the best unprotected stands are, in fact, located.

The American Forestry Association has proposed merely changing the name of Humboldt Redwoods State Park without changes in the boundaries to that of a national park, with this very idea of "the finest redwoods" in mind. Their position is that the Bull Creek-Dyerville forest is the best example of the redwood type, and no other area can justifiably be a national park.[43]

Whereas the Sierra Club might feel Humboldt Redwoods is the finest stand of redwoods (the author has no knowledge that the Club does feel this way), because they are already preserved, efforts for a national park must be directed elsewhere. Hugo Fisher of the California Resources Agency

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[42] Conservation Associates, A Proposal for a Pacific Redwood National Park and Seashore, San Francisco: Conservation Associates, 1966, p. 11.

[43] American Forestry Association, "Nothing But the Best," American Forests, 71, May, 1965, p. 37.

under Governor Edmund G. Brown explained a similar attitude in his criticism of the A.F.A. proposal. Since no more virgin redwoods would be protected, he saw "no improvement resulting." This type of attitude is basically that more redwoods must be saved, and it is unimportant which government agency takes the action.

How many redwoods must, indeed, be saved? The Sierra Club feels quite strongly that not enough have been saved:

> What appeared to be an ample acquisition program before World War II cannot provide redwood reserves that will withstand the impact of present visitor use, to say nothing of the demands and attrition of the future.[44]

and,

> The Sierra Club's first great battle in conservation was joined to preserve the Grand Canyon of the Tuolumne River from Hetch Hetchy Dam and Reservoir. This battle was lost fifty years ago because of the false premise that a canyon like Hetch Hetchy existed in the Yosemite Valley and only one was needed. The National Park Service knows only too well today how valuable Hetch Hetchy would be to relieve the over-crowding that overwhelms the Yosemite Valley. We face a singularly similar issue in the preservation of Redwood Forest now.[45]

The Save-the-Redwoods League, although sticking to its acquisition program, agrees that not enough land and trees have yet been saved.

Criticism has been levied against the state parks because of their condition of "underdevelopment." Some ask why buy more and more land when so much of that which is already owned is not used. Yet again the idea of park purpose must be posed: undeveloped land must be retained

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[44] Clyde Thomas, op. cit., p. 11.

[45] Edgar Wayburn, "The Redwoods Report: A Proposed National Park, Part II," Sierra Club Bulletin, 50, January, 1965, p. 9.

because it is this aspect of a park which prompted its status as a park in the first place.

Other people have commented that we are lucky that wildlands have been saved along with the scenery in our reservations. Redwood park use to date has definitely not been of a wilderness type and roadside uses have dominated. Loughman shows that wilderness users in the West have been largely interested in high mountain country at elevations above timberline and but little in the main forest belts of western mountains.[46] What is needed is a realistic balance between wild lands and developments such that the latter serves to aid in appreciation of the former and not interfere with it. None of these statements would be denied by any of the parties involved in the park controversy. The problem is where to strike the balance.

This difficulty is one of determining how crowded a park must be before it is "overcrowded." Undoubtedly this question would be answered differently depending on the general nature of the park (e.g., downtown city park versus a "primitive" national park). But without definite concepts of purpose and the appropriate degrees of crowding and use for a particular kind of park, problems involving overcrowding cannot be answered. This is no less true for urban parks than it is for redwood parks.

Just how much redwood park land is felt necessary (i.e., where to strike the balance) depends on a point of view that is determined by a concept of national or state park purpose. The Save-the-Redwoods League

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[46] Michael Loughman, National Parks, Wilderness Areas, and Recreation in the Southern Sierra Nevada, California: An Historical Geography, Master's Thesis, University of California, Berkeley, 1967, 193 pp.

has a long history which suggests its image of purpose is one of roadside recreation, and its view of redwoods is that they are scenic spectacles. For the League, redwood preservation involves saving areas on which redwood trees are growing. The Sierra Club's position is different and is consistent with its general conservation views. Scenic spectacles are worthy of preservation, certainly, but in the case of redwoods, as in most landscapes, it is not enough to set aside mere examples of the types. Rather, the Club will argue, an entire system must be preserved. Large blocks of wild land are necessary as environments for the scenic spectacles, and this is one reason why the Sierra Club has consistently been in favor of a large national park. Finally, most other groups seem more interested in providing "outdoor recreation" in parks, and their proposals for redwood national parks involve either providing for more development on existing park lands or purchasing new lands primarily for recreational use. (See Table 18) Although the author does not wish to argue the appropriate degree of recreational facilities for national parks, it is fair to say that these reservations have other, more basic, purposes.

Table 19 Conservation Groups in the Controversy

I. Conservation Groups Offering Proposals for a Redwood National Park

Organization	Purposes as Expressed by Organization	Purposes as Demonstrated by Activities	Proposal for a Redwood National Park	Characterization of Position in Redwood National Park Controversy
National Parks Association	"the protection of the great national parks and monuments of America ... and to the protection and restoration of the natural environment generally."	Strongly against developments in National Parks beyond simplest facilities; aggressive on wilderness boundaries in parks.	National Park combining Administration proposal on Mill Creek & National Park Service Plan I for Redwood Creek; creation of National Forest to eoncompass most of the rest of redwood land north of San Francisco.	Reversing entire status quo of land ownership in the redwood region; plan is "most aggressive" of any of the proposals; an active group but not the same extent as the Sierra Club or the Save-the-Redwoods League.
Sierra Club	"the study and protection of national scenic resources, particularly those of mountain regions."	Strongly supports wilderness preservation in forests and parks; against developments in parks and wilderness areas; the country's most aggressive conservation organization.	National Park of 90 000 acres on Redwood Creek plus substantial acreage additions to state parks.	Strong attack on the status quo; "very aggressive" or "militant"; activity is most aggressive of all the conservation groups.
Save-the-Redwoods League	"To rescue from destruction adequate tracts of the Sequoia sempervirens, or Redwoods."	Preservation of redwoods, primarily the coast redwood.	National Park of 44,000 acres on Mill Creek (Administration proposal.	Plan is "practical" or "moderate"; activity is major but nonmilitant.
Conservation Associates	"engaged in the conservation of air, land, and water resources with special reference to their cultural values in terms of parks."	None.	National Park of 159,000 acres in Humboldt County from Humboldt Redwoods State Park to the Pacific Ocean.	Plan is "compromising"; not active in the controversy.

II. Conservation Groups Supporting Redwood National Park

Organization	Proposal Supported	Note
National Audubon Society	Sierra Club	Recognizes difficulty in getting Sierra Club plan; expresses hope that the Administration proposal will be accepted if long Congressional delays develop.
California Alpine Club	Sierra Club	
California Roadside Council	Sierra Club	
Citizens Committee on Natural Resources	Both Sierra Club and Administration Proposals	
Citizens for a Redwood National Park	Sierra Club	
Citizens for Regional Parks and Recreation	Sierra Club	
Colorado Mountain Club	Sierra Club	
Contra Costa Hills Club	Sierra Club	
Contra Costa Park and Recreation Council	Sierra Club	
Defenders of Wildlife	Both Sierra Club and Administration Proposals	
Federated Garden Clubs of New York State, Inc.	Sierra Club	
Federation of Western Outdoor Clubs	Sierra Club	
Garden Club of America	Sierra Club	
Izaak Walton League	Sierra Club	

II. Conservation Groups Supporting Redwood National Park (cont'd.)

Organization	Proposal Supported	Note
Marin Conservation League	Sierra Club	
The Mountaineers	Sierra Club	
National Wildlife Federation	See note	Supports park but no specific plan; against spending of Land and Water Conservation Fund money if the park created is greater than 45,000 acres.
Nature Conservancy	Sierra Club	
Nature Friends, Inc.	Sierra Club	
Regional Parks Association	Sierra Club	
Tamalpais Conservation Club	Sierra Club	
Trustees for Conservation	Sierra Club	
The Wilderness Society	Sierra Club	
Wildlife Management Institute	Sierra Club	

X. Scenic Spectacles and Pruposes

It is proper to ask what the "ideal" national park should contain. This question is related to the idea of national park purpose but differs in emphasis. The problem is not how to use an established park, but rather to determine a locale suitable for national park designation. Although nothing definite exists in laws for selection of national park sites, and the traditions in such matters are not clearly defined, some observations are appropriate.

Table 20 lists the national parks in chronological order of creation dates, and for each park the outstanding feature is listed. Some subjectivity may be involved in the classification, but in general, the central characteristic is obvious (where such is not the case, a notation has been made). Yosemite Valley is clearly the central feature of Yosemite National Park, whereas Glacier National Park lacks any such single feature. The distincition being made here is between an outstanding "scenic spectacle" and one which is not. Further discussion will be necessary to develop this theme.

All the early national parks other than Hot Springs have clearly defined scenic spectacles of unusual merit, e.g., Yellowstone's geyser basins and the Grand Canyon of the Yellowstone River. Through the years a few other such parks have been created.

Another recurring theme for national park establishment is high mountain scenery (e.g., Rocky Mountain National Park). The California Sierra parks, originally limited to more localized spectacles, have all been enlarged to include adjacent high country and so should qualify as

Table 20 National Park Classification

National Park (Date of Establishment)	"Type"	Scenic Spectacle	Note
Hot Springs (1832)	--		
Yellowstone (1872)	Scenic	Geyser basins, etc.	
Sequoia (1890)	Biologic (Scenic)	Sequoia groves (Mountain scenery)	
Kings Canyon (General Grant) (1890)	Biologic (Scenic)	Sequoia groves (Mountain scenery)	High mountain country added in 1940.
Yosemite (1890)	Scenic (Biologic)	Yosemite Valley (Mountain scenery) Sequoia groves	Yosemite Valley given state park status in 1864.
Mount Rainier (1899)	Scenic	Mount Rainier	
Crater Lake (1902)	Scenic	Crater Lake	
Platt (1902)	--		
Wind Cave (1903)	Geologic [a] (Cave)	Wind Cave	
Mesa Verde (1906)	Archeologic	Indian ruins	
Petrified Forest (1906)	Geologic	Petrified wood.	National Monument until 1962.
Lassen Volcanic (1907)	Geologic (Scenic)	Tectonic activity (Mountain scenery)	
Grand Canyon (1908)	Scenic	The Grand Canyon	National Monument until 1919.
Olympic (1909)	Scenic (Biologic)	Mountain scenery (Forests)	Low elevation forests added in 1938,1940 and 1953.

National Park Classification (cont'd.)

National Park (Date of Establishment)	"Type"	Scenic Spectacle	Note
Zion (1909)	Scenic	Zion Canyon	National Monument until 1919.
Glacier (1910)	Scenic	Mountain scenery	
Rocky Mountain (1915)	Scenic	Mountain scenery	
Acadia (1916)	Scenic		National Monument until 1919.
Hawaii Volcanoes (1916)	Geologic	Tectonic activity	
Haleakala (1916)	Geologic	Tectonic activity	Haleakala and Hawaii Volcanoes National Parks were created as "Hawaii National Park" in 1916; in 1961 the two areas were given status as independent parks.
Mount McKinley (1917)	Scenic (Biologic?)	Mountain scenery (Wildlife?)	Main public support for creation of Mount McKinley National Park came from wildlife interests.
Bryce Canyon (1923)	Scenic	Bryce Canyon	National Monument until 1924.
Carlsbad Caverns (1923)	Geologic (Cave)	Carlsbad Caverns	National Monument until 1930.
Great Smoky Mountains (1926)	Scenic		
Shenandoah (1926)	Scenic		
Mammoth Cave (1926)	Geologic (Cave)	Mammoth Cave	
Grand Teton (1929)	Scenic	Mountain scenery	
Isle Royale (1931)	Scenic		

National Park (Date of Establishment)	"Type"	Scenic Spectacle	Note
Big Bend (1935)	Scenic		
Everglades (1947)	Biologic	Wildlife	
Virgin Islands (1956)	Scenic		
Canyonlands (1964)	Scenic	Canyons	
Guadalupe Mountains (1966)	Scenic		
Redwoods National Park?	Biologic	The Coast Redwoods	

a) "Geologic-type" parks are ones in which geologic processes themselves are the primary features, i.e., volcanoes, and ones in which geologic process has resulted in features not fitting the usual connoted meaning of "scenery", e.g., Petrified Forest. Caves are classified geologic by the second definition. Lassen Volcanic is a geologic park because it is the tectonic activity per se which is of primary interest; Yellowstone might be partly considered geologic by this standard because of the geysers, but the waterfall and canyon of Yellowstone River are scenic features; Yosemite is essentially a scenic park because the processes which shaped the Valley and surrounding high country are not as important as the forms themselves.

both "outstanding scenic spectacle" and as "high mountain country" parks.

A third grouping of parks would include those which, from time to time, are established on other grounds. In some cases it could be argued the area is inappropriate for national park designation (e.g., Platt National Park), although in others, such an argument is not appropriate (e.g., Big Bend National Park).

Such a classification helps to point out several things about the traditions which have been used in selecting national park sites.

First is the early need for a unique scenic spectacle. In this connection it is interesting to note Nash's comments that a large Yellowstone preserve was created (and not several small reserves in each of the geyser basins, etc.), not to protect wilderness, but to take in isolated scenic spectacles which might be discovered in future exploration of the park area.[1] After the first parks, the scenic spectacle apparently became less important because the greatest spectacles were already reserved. This is not to suggest that subsequent parks were not as deserving of national park status or that they lacked spectacular natural features. But it is fair to say that most of the parks after Crater Lake do not contain single features of spectacular and unique characteristics. The Grand Canyon, of course, is a conspicuous exception.

Secondly is what appears to be almost a type locality for the national park: the western mountains. This bias in favor of high mountain country may be a story in itself, but suffice it to note the pattern here. As has been pointed out by Loughman, lower forested areas

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[1]Roderick Nash, Wilderness and the American Mind, New Haven and London: Yale University Press, 1967, p. 112.

have not been of prime importance in these parks, but rather the elevations above the main forest belt have attracted most attnetion (p. 127). These areas are also ones lacking significant resources which might be developed in a more traditional manner; these parks protect lands which are not highly coveted by non-park interests. The Redwood National Park must be primarily a forest park, and it deviates from this traditional mountain situation. And the redwoods are highly valuable for commercial development; it is this dual possibility of use, in fact, which makes the Redwood National Park controversy so explosive.

Third, there is a decided emphasis on scenery as a spectacle and very little in the way of "biological" parks. The Everglades National Park is primarily a reserve for wildlife, and the initial parks for the Sierra redwood were for protection of trees, but these stand clearly apart from the rest of the park system. Other national parks provide wildlife and vegetation protection but not as the primary objective. Early policies dealing with predatory animal eradication in the parks supports the idea that national parks were not viewed as strict wildlife sanctuaries. Contrary to commonly held opinions, Yellowstone National Park was not conceived as a preserve for wildlife when it was created.[2]

It is interesting to note, however, that the efforts to set aside the Mount McKinley National Park stemmed largely from wildlife interests (Boone and Crockett Club and the Campfire Club of America, both groups concerned with wildlife protection).[3] Certainly boundaries have been

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[2]John Ise, Our National Park Policy: A Critical History, Baltimore: John Hopkins Press, 1961, p. 581.

[3]Robert Shankland, Steve Mather of the National Parks, New York: Knopf, 1954, p. 171.

adjusted with wildlife in mind, such as Yellowstone's revised boundary. But wildlife has rarely created enough excitement to generate a park.

The lack of parks for spectacular animals may be related to the development of national wildlife refuges from the turn of the century. Tradition has dictated it more appropriate to have wildlife wonders preserved in this system rather than in the parks. One of the greatest spectacles of American wildlife, the bison, has a special reserve for its existence in the national wildlife refuge system rather than the national park system. Similarly, the whooping crane is provided for by a wildlife refuge, although in Canada by a national park.

Vegetation has benefited by protection in national parks, yet, again, plants are not the primary objective of parks. When spectacular plant forms have been reserved, they have been added to the national park system as national monuments (e.g., Joshua Tree, Saguaro, and Muir Woods for coast redwoods, except, of course, the Sierra big trees--Sequoiadendron giganteum). Vegetation is recognized as more appropriate for special recognition in the park system than is wildlife. This is consistent with the idea that scenery is the basic concern of the parks; vegetation is a more obvious component of scenery than are animals.

Projects lacking scenery have great difficulty in generating enthusiasm, even among conservation groups. The proposed Prairie National Park would have protected a modest expanse of virgin Kansas prairie with bison, antelope, and the rest of the grassland wildlife community and yet the project was not supported, or even much noticed, by the conservation organizations.

Finally, to move away from the chart, a discussion on wildlife

conservation may highlight the importance of the spectacular in the American preservation attitude.

Concern for wildlife seems to have developed, as a significant public issue, at the turn of the century. Several things point this out: (1) the first wildlife refuge established in 1903, (2) fears over the demise of plume birds around 1900, and (3) federal action on behalf of songbirds in 1916. With deeper appreciation of wildlife forms, the public's concern for mammals spread from the bison to predatory animals. (This concern might be better described as, "is spreading today.") But even now there is widespread concern about only certain wildlife species. People quite commonly know about the plight of the whooping crane and, in California, of the California condor, and they have heard the story of the saving of the bison. Less spectacular forms, even more rare and just as important from a scientific viewpoint, are unknown except to the more enlightened preservationist. The black-footed ferret may be the rarest mammal in North America, but few have heard of it. The Sacramento perch is a species in danger of extinction, yet even the locally-based conservation groups are not trying to save it.

Birds enjoy a disproportionate fame because of mass appeal and organized interest groups, but even the bird-watching public has its spectacular or favorite causes. Bald eagles are widely recognized as endangered; many probably have heard of Kirtland's warbler and the unusual land management program for its survival. But how many bird watchers have concern for the rare Cape Sable Sparrow or Bachman's warbler?

A similar argument could be developed with the plant world; only

the spectacular forms receive recognition by the conservation-minded public.

The point is that the American preservationist attitude is centered around the spectacular and the unusual; the more unique and the more grand a natural object is, the more it is considered a spectacle, thereby worthy of preservation.

An application of these ideas to the redwoods is appropriate. Certainly redwoods are spectacular! And it is clear they are a spectacle appropriate for a national park. The fact they are biological features might work against park establishment. Yet their consideration for national park status suggests the spectacle is sufficient to overcome traditional views against biological parks.

It would be interesting to know how much public support would be generated on the merits of the trees alone without regard to their cutting. The fact that redwoods are being cut undoubtedly adds to the fire of the controversy. In this regard note that the Sierra redwoods were preserved in national parks under circumstances involving reports of devastated forests.

Recognizing redwoods as a spectacle, in a general sense, is obvious, yet determining the specific spectacle may not be. In the case of other parks with a spectacle (e.g., Yosemite, Crater Lake), the central spectacle is localized (Yosemite Valley, Crater Lake itself); such is not true for the redwoods. The lack of concensus on the park site may be an indication of this difficulty. Without a spectacle clearly defined in a spatial sense, the park protagonists apparently suffered in their arguments. The anti-park groups have consequently benefited. There

have even been efforts to shift the national park site to already protected redwoods (Humboldt Redwoods State Park), with the argument that only there can the true scenic spectacle be included in the park.

The concern for the "tallest tree" can be interpreted as an attempt to define a unique scenic spectacle. The world's tallest tree in the Redwood Creek drainage has provided those advocating the site for a park with much ammunition. Even park proposals involving other areas provide for protection of a small area with the tallest tree. Efforts were made in the summer of 1966 to locate a taller tree in Humboldt Redwoods State Park. Such a discovery would have released some of the pressure for a Redwood Creek park.

Anyone viewing good alluvial bottomland redwoods cannot distinguish between trees reaching heights of 300, 340, or 360 feet, but this is unimportant in the game of "tallest tree". The tallest tree is important, even if recognition is solely by a sign at its base.

XI. Secondary Influences in the Controversy

Soils

One of the recurring demands of the preservationists is that the national park protect an entire watershed. This position stems from claims that the floods of Bull Creek in Humboldt County resulted from logging in the upper watershed. Hundreds of old redwoods were lost along lower Bull Creek in Humboldt Redwoods State Park during the high water conditions. Others insist that complete watersheds are not necessary if sufficient protection is given upstream areas, and many say that the soil conditions on the steep slopes of the north coast ranges are unstable whether disturbed by logging or not.

An element of truth lies with each of these positions. Certainly much of the terrain is prone to mass movement, particularly the serpentine slopes. And it is reasonable that some sort of special care in upstream logging would reduce the downstream hazard. But the lesson of Bull Creek is a real one with which few would disagree: the very poor watershed conditions on the upper basin due to logging and recurring fires did play a part in the lower basin floods. However, this is not to say that all methods of logging would have had a similar effect.

Wahrhaftig and Curry conclude that erosion in the Eel and Mad Rivers appears to be proceeding at a rate ten to twenty times that of watersheds in similar climates in other parts of the world. "A significant part must be from accelerated erosion following logging and road building...", "since only a part of the basins of these two streams is currently being

affected by these activities, the rate of erosion for the parts affected may be many times the average..."[1] They suggest more research is needed before definite recommendations could be made. They do suggest that a number of entire drainage basins in a natural condition must be set aside to serve as a control for comparison with disturbed basins.

Whether or not Redwood Creek would be sufficiently undisturbed to act as such a control is questionable. Eighty-six miles of Redwood Creek studied by the California Department of Fish and Game includes sixty-four miles of "severely damaged" streambed conditions and only nine and one-half miles which is described as "undamaged." Perhaps only much smaller watersheds could be found sufficiently unchanged by human activity to act as controls in this kind of study.

Lending support to Wahrhaftig and Curry, Wallis' study of northwestern California soils concluded soil erosion was proceeding at a much faster rate than soil formation. Human activities were said to be the primary cause, and he implies more careful logging would stop the accelerated erosion.[2]

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[1]Clyde Wahrhaftig and Bob Curry, "Geologic Implications of Sediment Discharge Records from the Northern Coast Ranges, California," California Assembly, Committee on Natural Resources, Planning, and Public Works, Proceedings, Berkeley: August 17, 1966, pp. 152-157.

[2]James Wallis, A Factor Analysis of Soil Erosion and Stream Sedimentation in Northern California, Ph.D. Dissertation, University of California, Berkeley, 1965.

Hunting

National park proposals often invoke opposition from hunters, who fear the loss of hunting lands to park establishment.[3] This factor has not arisen in the Redwood National Park controversy for several reasons.

The small local population and isolation from large cities means light hunting pressure and less hunter demand. Also, the entire region is sparsely settled with abundant huntable land. The existence of Six Rivers National Forest and the recently-opened private forestry lands both contribute to the security of the hunter. Even the loss of 90,000 acres to a national park would not reduce the hunting potential of the area.

Another interesting explanation is the scarcity of game in the deep redwood forests. The reality of this phenomenon is indicated by early explorers, such as Josiah Gregg, who found animals scarce in the forest and consequently nearly starved. Lacking a reason to fight, hunters would not join in the dialogue over park establishment.[4]

Fish

The California State Department of Fish and Game indirectly gets into the controversy concerning the Redwood National Park. Fish and Game

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[3]This is generally the case. The proposed North Cascades National Park in Washington is now being opposed by the Washington State Game Commission and hunting groups because "there should be no reduction in the overall hunting area." See statements in the hearing record of the U.S. Congress, Senate, Committee on Interior and Insular Affairs, The North Cascades, 90th Congress, 1st Sess., April 24,25; May 25, 27, 29, 1967.

[4]Herbert M. Eder, personal communication.

Director Walter Shannon, before the Assembly Subcommittee on Forest Practices and Watershed Management in 1966, accused the forest products industry of damaging streams valuable for steelhead and salmon in the redwood country. His complaints were basically two: (1) actual physical destruction to streambeds by heavy logging equipment, and (2) deterioration of streams by logging debris and the sedimentation of silt washed down from cutover areas that fills pools and covers riffles of streams. Shannon stressed the importance of the second. Both produce situations in which fish reproduction is inhibited or prevented, and Shannon suggested several remedies. These included a limitation on logging skid road erosion, the prohibition of tractor use in streambeds, the preservation of buffer strips along streams in which no heavy equipment could be used, and the end to tractor logging on slopes in excess of fifty percent.[5]

A statement and related articles in the Fish and Game publication Outdoor California pointed accusing fingers at private timber operators in the state.[6] Whereas the controversy over California's Forest Practices Act (a law designed to require good forest practices by private land owners) is an involved affair in itself, certainly the timely pronouncements by the State Department of Fish and Game added fuel to the dissension concerning the redwoods.

In a very real sense, of course, the problem of fish passage and

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[5]Walter Shannon, "Forest Practices and Watershed Management in California," American Forests, 73, May, 1967, pp. 7; 48-50.

[6]California Department of Fish and Game, "Stream Clearance Pays Off," Outdoor California, 28, May-June, 1967, p. 6.

survival in the logging region of the north coast does not involve the national park; what is being asked for by the Fish and Game Department is more care in the logging operation, not its prevention in any specific area.

The Shannon statement may be used as an argument against the Redwood Creek site for a national park. In the statewide study of streams, four were analyzed in detail by biologists to determine how much damage had been caused by man's activities. Redwood Creek was one of two north coast streams and the only one in the heart of the old growth redwood country. From the standpoint of suitability as fish habitat, Redwood Creek had sixty-four miles of severely damaged streambed (as mentioned previously), four and one-half miles of moderately damaged stream, six miles lightly damaged, and only nine and one-half miles of "undamaged" stream conditions. This was comparable to the other north coast stream, the Garcia, but both of these were much worse than either Battle Creek (east of Redding) or the middle fork of the Mokelumne. The Sierra Club argument that the Redwood Creek drainage is needed as a unit to preserve its natural condition is unsupported by this evidence. Note, however, that most of the upstream portions of Redwood Creek, above the national park proposal area, are in a region subject to logging and other human disturbances, and it is probably this part of the stream which gives the drainage as a whole such a poor record. The section of Redwood Creek just above Orick, the area suggested for the park, is apparently little disturbed. Certainly, to think of the Redwood Creek drainage as untrampled and undisturbed wilderness is wrong.

The U. S. Forest Service

The U. S. Forest Service has become interested in the controversy because provision was made in the Senate-passed bill for the giving of Forest Service lands to private timber companies in trade for their lands within the national park boundaries. This transfer would involve some 14,567 acres of land within the Northern Redwood Purchase Unit on which there is an estimated one billion board feet of timber. Of this volume, seven hundred million board feet is redwood. Slightly more than twelve thousand acres have not been cut since purchased and are "primarily old growth (virgin timber) stands."[7]

Never pleased with transfers of national forest land to the National Park Service, the Forest Service is quietly but unalterably opposed to the idea of trading their lands to private concerns in order to establish a national park. Yet, as of November, 1967, the Forest Service reported that they "had developed no information as to the exchange proposals as this authorization is to the Secretary of the Interior rather than to the Forest Service."[8]

The transfer provision is a child of the Sentate Bill and was not instigated by the Federal Administration. In fact, the Executive Department's official position is in opposition to the plan. The antagonism stems from fears that such a transfer would set a precedent and future purchases by federal agencies would involve similar transfers. Also, the

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[7]Personal communication from the U.S. Forest Service, San Francisco, November 22, 1967.

[8]Loc. cit.

Executive Department says the disestablishment of the Purchase Unit would deprive half a dozen small mills depending on the federal timber. Miller-Rellim would be given deferential treatment at the expense of smaller outfits. An increase in Six Rivers National Forest cut is the Executive's plan for supplying Miller-Rellim with stumpage for continued operation.

Governor Reagan has insisted the Purchase Unit be traded to private lumber owners whose lands would be within the national park. This position is basic to the State's Administration.

Coupled with the difference of opinion within various branches and levels of government is a similar development within the conservationists. The groups which have come out most strongly opposed to the transfer are those least involved in the controversy. That is, the Sierra Club supports the provision, but the Audubon Society and the National Wildlife Federation are in opposition. Curiously, the Save-the-Redwoods League has taken a completely neutral stand on the particular issue but supports the Senate-passed bill. (Does this again suggest the non-aggressive nature of the League?)

It has been suggested the transfer provision originally offered the possibility of an intense Park Service-Forest Service squabble. The results of such an interagency row could have been no national park at all. However, it is doubtful this was the intent of proposing the transfer provision.

State of California

In addition to transfer of the Redwood Purchase Unit to private

industry, the State of California has other interests in the national park controversy. Under any of the proposals, state park land would be involved. Governor Reagan has indicated federal lands elsewhere in California should be transferred to the state in exchange for state parks taken within the national park. (See Plate 9) Two parcels of beach land are desired by the state: (1) one mile of San Onofre Beach and four additional miles on Camp Pendleton near San Diego, and (2) four miles of Fort Ord Beach near Monterey. In addition, Marin Headlands are "necessary" for the federal-state transfer, and twenty-five acres of the El Castillo area in Monterey County are desired.[9]

All of these lands are currently administered by the Defense Department. The Federal Administration claims neither San Onofre Beach nor the Fort Ord Beach can be transferred-in-fee. But the Defense Department agrees to the lease-transfer of San Onofre Beach and a portion of Fort Ord Beach. Recapture rights are deemed desirable by the military in case of need. The Marin Headlands transfer "will be explored", and the El Castillo area can be released to the state.

Governor Reagan and the Resources Agency indicate transfer-in-fee is desirable or eventually necessary. The national park could be created in any event and state park transfer might be postponed.

The Senate-passed bill provides for the transfer of Muir Woods National Monument and Kings Range Conservation Area to the state. California expresses lukewarm reaction to Muir Woods and is indifferent to administering

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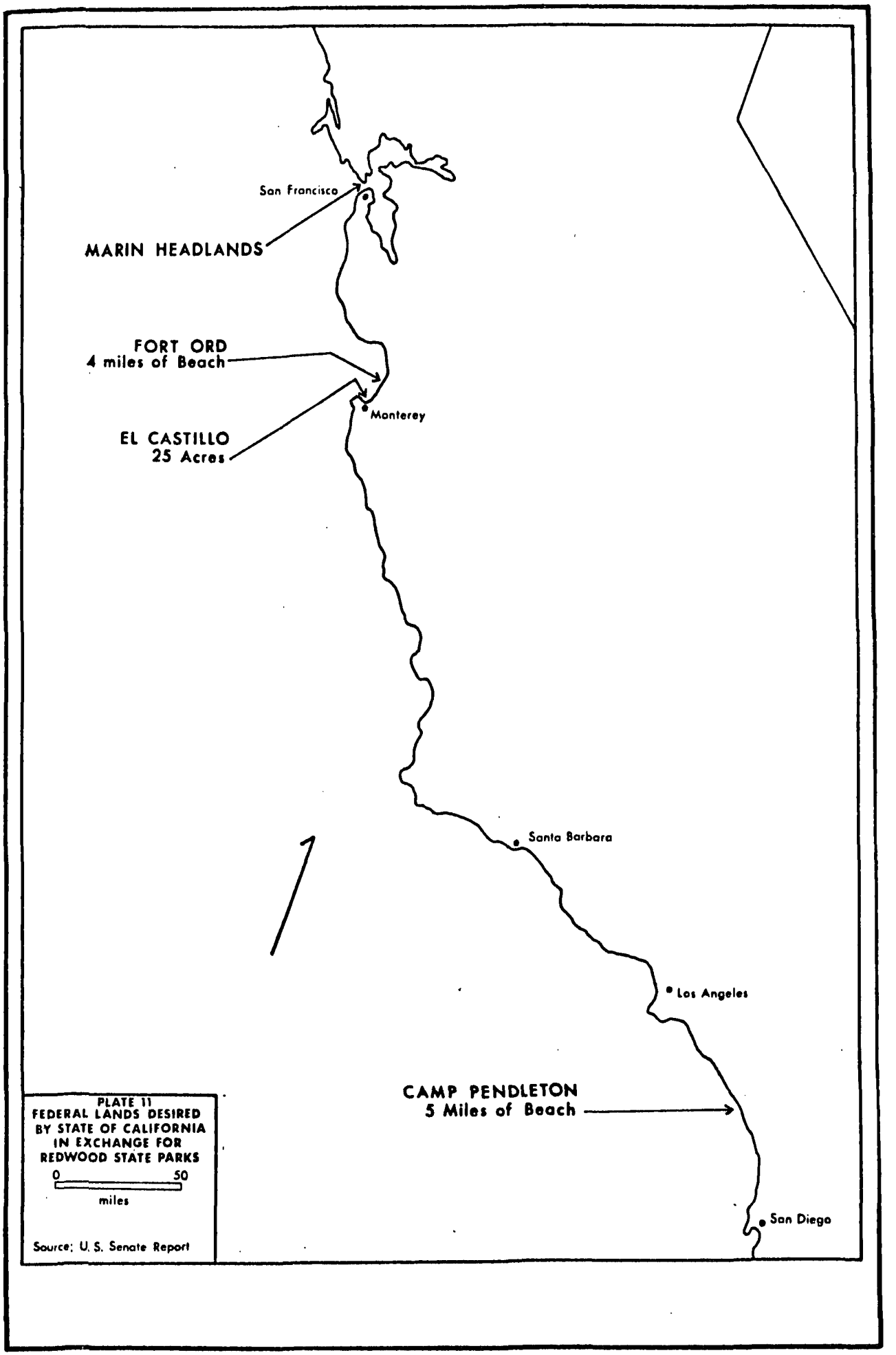
[9]See U.S. Congress, Senate, Committee on Interior and Insular Affairs, Report Authorizing the Establishment of the Redwood National Park in the State of California, and for other Purposes, 90th Cong., 1st Sess., S 2515, Washington: 1967.

Kings Range Conservation Area.


San Francisco
MARIN HEADLANDS
FORT ORD
4 miles of Beach
Monterey
EL CASTILLO
25 Acres
Santa Barbara
Los Angeles
CAMP PENDLETON
5 Miles of Beach
San Diego
PLATE 11
FEDERAL LANDS DESIRED
BY STATE OF CALIFORNIA
IN EXCHANGE FOR
REDWOOD STATE PARKS
0
50
miles
Source: U. S. Senate Report

XII. Conclusions

A good deal in the way of economic argument is being made in the redwood national park controversy, but it is incorrect to conclude from this that the primary decision rests in economics alone. In a very real sense and in spite of the strong economic talk, the choices being considered lie without the decision-making mechanism of the market place. This situation is the rule in contemporary scenic resource problems, and the trend in that direction will become pronounced. A non-economy-determined decision-making process in matters concerning land allocation may be a reflection of this country's affluence.[1]

As has been seen, the economic aspects of the controversy consist of three basic problems. The loss of taxable property and its effects on local government income is the least important in terms of harm to the north coast area and is easily rectified by Federal Governmental action. Such help would be in the form of in lieu taxes and thus would be an element of cost of the park project.

The forest products industry, both on a company basis and as a source of external income for the area, would be affected by park establishment. This problem is much more difficult to deal with than that of taxes, but the industry as a whole will be harmed much less than companies on an individual basis. The problematic and uncertain future of the industry makes any forecasts concerning the region precarious; this is true whether or not a park is ever established.

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[1] See D. B. Luten, "Empty Land, Full Land, Poor Folk, Rich Folk," to be published in the 1968 Yearbook of the Association of Pacific Coast Geographers, Oregon State University, Corvallis, Oregon.

The effects of the park on the forest products industry are largely represented by costs of lands, timber, improvements, and unrealized profits in the future. Such effects are the obvious monetary costs of the park project.

The third economic aspect of the controversy involves employment, and it is this problem which is the basic local concern, not the industry, per se. Unlike the other two aspects, employment is not directly tied to costs borne by the park project and is thus much more difficult to deal with as an economic problem. Something in this area certainly could be done, and proposals do provide for job aid.

Thus these local economic effects have a large component which can be identified as "costs of the project." The central question being asked is whether or not the public sector should assume these costs to provide a Redwood National Park.

As the population of the United States increases, the land becomes "filled", and pressures for particular uses on a given piece of land become more pronounced, land purchases of any size become increasingly more expensive.

The amounts of money spent by Congress for lands in the various national park projects of the past amount to 57MM. (See Table 21) Mostly carved out of the public domain in the West, and purchased with state and private funds in the East, costs of establishment of parks have been minimal. The Redwood National Park would involve costs of an entirely different order of magnitude. Only in the last few years has Congress authorized massive land purchase for recreation; still, the amounts involved are small when compared to many other governmental programs. The

demand that park land be purchased is a force which runs against establishment of a Redwood National Park.

The question of how to spend public funds, and the associated question of how much to enter into the private sector of society, are ones which lie outside the realm of strictly economic determination. The decision-making process is one in which the question being raised is not to be answered within the economy, but without.

It is suggested this type of decision-making results from increased affluence because the concerns of wealthy societies go beyond strict survival.[2] What criteria can be applied to resource allocation in such a society are unclear; if lying without the economy, economic methods are inadequate. The emergence of powerful preservationist groups is an indication of the "arrival" of the non-economic criteria in the decision-making mechanism.

Conservation controversies are battles between groups having different concepts of the "best" way of allocating resources. Economic analysis of these controversies may or may not aid in understanding certain facets of the problems, but such studies cannot provide the final answers. In addition to economics, decision makers must inquire into the customs and traditions of society; they cannot ignore society's purposes and goals. It is more in this realm, not in the economic, that the final answers lie. Scenic resource conservation is a confusing endeavor because, having matured beyond more easily applied economic determinates, the American society is now lacking the guidelines to make decisions concerning land use.

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[2] Ibid.

Table 21

Money Spent for National Park Land Acquisition*

	Park	Cost 1/	Acquired Acres 2/
1.	Great Smokies	$13,536,000	511,095.0
2.	Yosemite	8,167,000	38,134.6
3.	Everglades	6,194,000	1,302,509.0
4.	Grand Teton	3,964,000	36,784.5
5.	Olympic	3,783,000	54,054.8
6.	Rocky Mountain	3,168,000	11,353.8
7.	Mammoth Cave	2,385,000	51,351.4
8.	Glacier	2,178,000	21,590.7
9.	Shenandoah	1,848,000	193,646.2
10.	Big Bend	1,738,000	706,538.4
11.	Virgin Islands	1,608,000	10,835.6
12.	Acadia	1,243,000	31,695.1
13.	Hawaii Volcanoes	1,142,000	201,007.1
14.	Sequoia	1,006,000	4,415.2
15.	Lassen Volcanic	752,000	5,710.9
16.	Kings Canyon	740,000	4,687.1
17.	Isle Royale	710,000	528,900.0
18.	Petrified Forest	478,000	61,593.0
19.	Mount Rainier	397,000	606.4
20.	Zion	287,000	13,119.2
21.	Yellowstone	276,000	5,296.6
22.	Wind Cave	141,000	14,718.2
23.	Hot Springs	138,000	140.4
24.	Canyonlands	105,000	20,976.4
25.	Haleakala	94,000	17,130.0
26.	Grand Canyon	83,000	5,550.0
27.	Carlsbad Caverns	39,000	919.9
28.	Mount McKinley	34,000	453.7
29.	Platt	28,000	912.0
30.	Crater Lake	13,000	2,466.5
31.	Mesa Verde	5,000	668.0
32.	Bryce Canyon	1,000	720.0
		$56,281,000	3,859,579.7

*California Redwood Association, Redwood Fact Sheet, #9, San Francisco: California Redwood Association, 1967.

If "conservation" in the 1930's meant the prevention of soil erosion and the building of farm ponds, today it means scenic resource preservation. Whether one views contemporary conservation groups with pleasure or disgust, as aviors building a better world or as overzealous crusaders, they represent a force which is becoming influential in determining the appearance of the American landscape.

Geography is a discipline whose concern is the land. Geographical investigations seek to describe and explain patterns on the Earth, always keeping in mind the importance of man's activities. As in no other field, goegraphy attempts to understand man's environment and the interrelationships between man and nature.

No inquiry about the American landscape can be complete without some reference to the conservation movement. No other contemporary activity in American society so typifies the man-nature theme than does scenic-resource preservation. Yet, geography has ignored these problems for one reason or another; such a detached position of the discipline only does it harm. Geography must seek to understand the principles and patterns of activity in the conservation movement as well as its effects upon the land. To do otherwise is to get an incomplete picture of the processes at work.

APPENDIX

GLOSSARY

Board Foot - A measure of tree or log volume equal to one foot by one foot by one inch.

International 1/4 Inch Rule - A measure of log volume expressed in board feet. The relation to Scribner rule varies, but International 1/4 inch rule volume equals approximately (Scribner Volume) (1.075).

Inventory - The volume, usually expressed in board feet, of useable timber in a stand. Often refers to assessed volume only.

Large Young Growth - Young growth may be differentiated according to size. Large young growth is simply the larger trees, many decades old, that are or are approaching merchantable size.

Old Growth - Refers to trees existing prior to the initiating of logging by white settlers. Opposed to young or second growth.

Residual Timber - In cutting a stand of trees, not all individual trees may be logged. Those left are residual. As logging on the north coast is largely restricted to virgin forests, residual timber is old growth remaining in a non-virgin forest.

Salvage Timber - Not all trees or logs are useable in the mill. Technology or economics may make the use of some volume impractical. Left in the forest, such trees and logs are salvage and may be utilized in the future if conditions permit.

Scribner Rule - A measure of log volume expressed in board feet. The conversion to cubic feet varies, but 1 cubic foot of solid wood equals approximately six feet board measure, Scribner rule.

Second Growth - See "Young Growth".

Softwood - Coniferous tree species such as redwood or Douglas Fir.

Sustained Yield - The volume of cut from a forest that may be continued indefinitely into the future. A condition in which growth to the stand equals drain from the stand (cut).

Veneer - Veneer is produced by cutting thin strips from a log. Because the process is somewhat analagous to peeling an apple, veneer is said to be "peeled" fron logs. Veneer sheets are most commonly used for plywood production.

Virgin Forest - As usually used, virgin forests are uncut stands of old growth. All virgin growth is necessarily old growth but not vice versa. See "Residual Timber."

Whitewood - Non-redwood coniferous trees are called whitewood.

Young Growth - Stands of immature trees that grow in areas from which old growth timber has been logged.

CONGRESSIONAL CHRONOLOGY

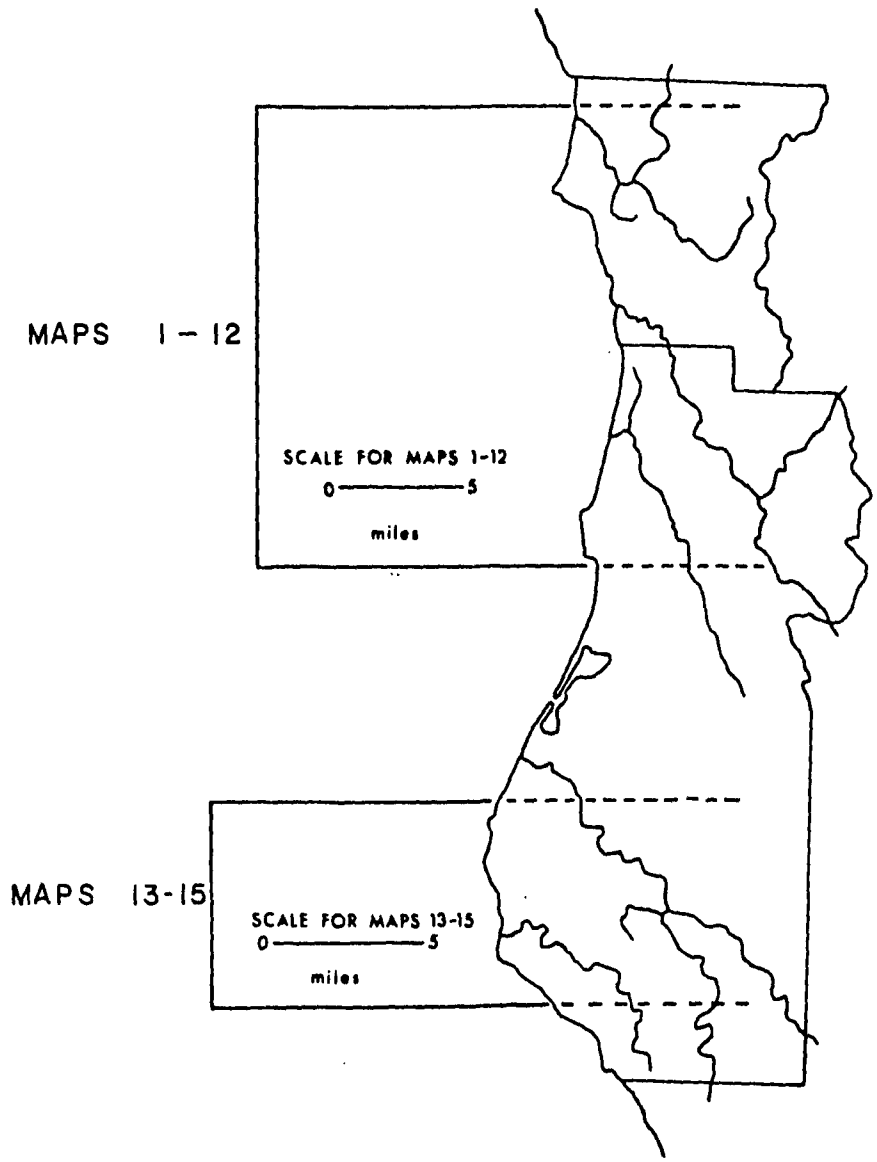
Date	Activity
October 1965	Four bills introduced into House for a 90,000 acre park on Redwood Creek (Sierra Club plan); this occurred on the day prior to first session adjournment; no recommendation from Executive Department.
January 1966	Beginning of second session; several new bills for the 90,000 acre Redwood Creek park but all in the House of Representatives.
February 1966	Recommendation from Executive Department for a 45,000 acre park on Mill Creek; Senator Kuchel introduces this proposal (S. 2962) and Senator Metcalf submits an amendment in form of a substitute for 90,000 acres on Redwood Creek Amendment No. 487 to S.2962; many companion bills introduced for each site.
June 1966	Senate Subcommittee Hearings held in Crescent City.
August 1966	Senate Subcommittee Hearings held in Washington; Senator Kuchel calls for cutting cessation by Miller-Rellim in Mill Creek park site; general recognition that the House of Representatives will not act during this Congress.
September 1966	Resolutions introduced to force Miller-Rellim to stop cutting within proposed park boundaries; this presumably requested by President Johnson and Interior Secretary Udall.
September 1966	Companies agree voluntarily to stop cutting in both Redwood Creek and Mill Creek park sites; the companies agreeing are Georgia-Pacific, Simpson, Arcata, and Miller-Rellim.
89th Congress adjourns without further action; all bills die.	
January 1967	90th Congress opens.
January 1967	Newly-elected Governor Reagan of California requests that Congress not act on park for 3 months while his administration studies the situation; Senate and House Committees agree.

Congressional Chronology (cont'd.)

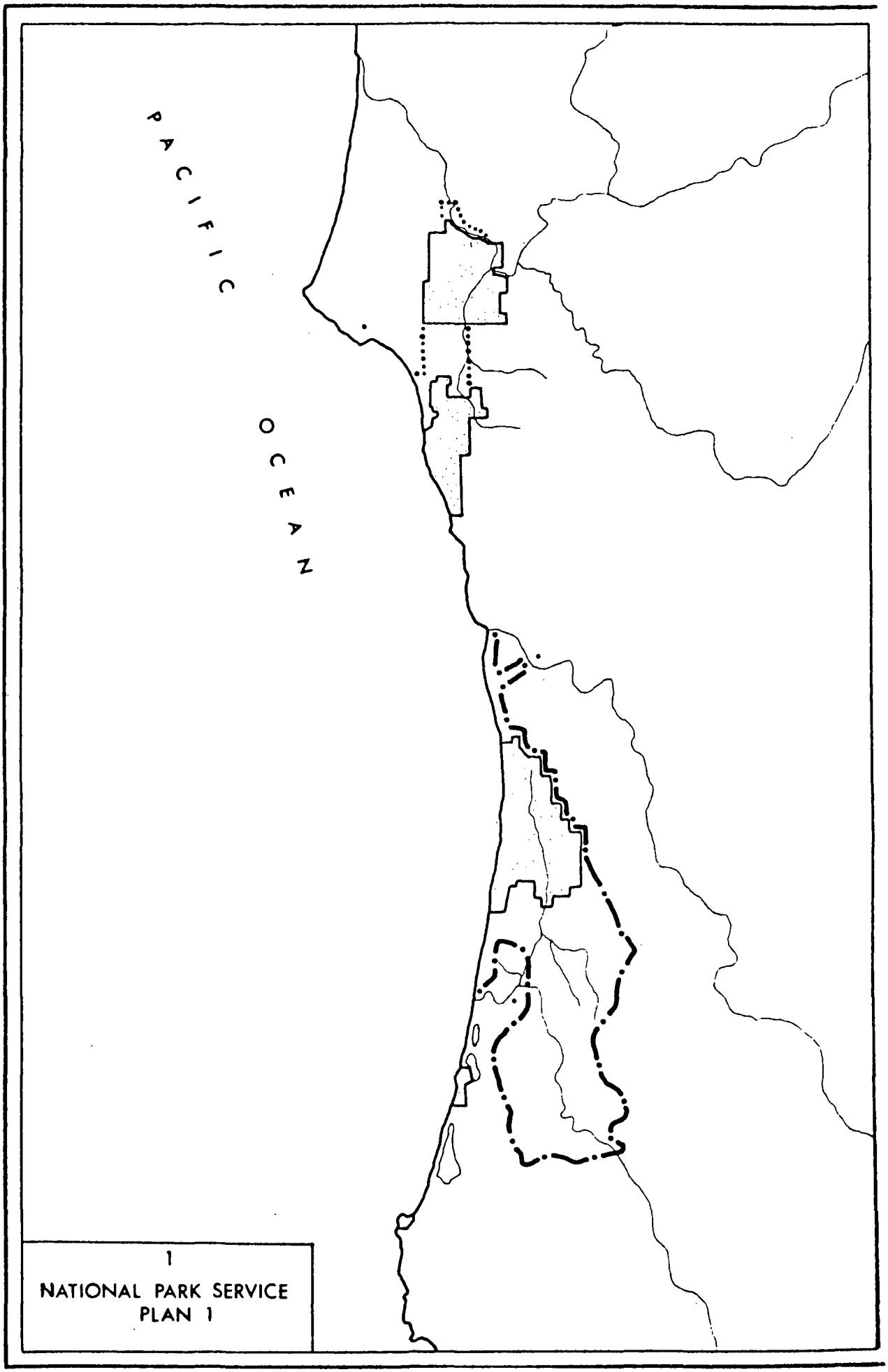
January 1967	17 Senators and 34 Congressmen introduce bills for 90,000 acre park on Redwood Creek. S. 514 in the Senate by Metcalf and H.R. 2849 by Cohelan.
February 1967	Congressman Clausen proposes his "Redwoods-to-the-Sea" plan in a House speech; no bill submitted.
March 1967	Clausen submits his plan (H.R. 7742); Senator Kuchel and others submit Administration plan (S. 1370 and H.R 10951).
April 1967	Senate Subcommittee Hearings in Washington; Congressman Cohelan offers compromise in speech which suggests a park of 4850 acres in Mill Creek, 18,830 acres in Redwood Creek, and 20,290 acres in Skunk Cabbage, Lost Man, and Little Lost Man Creeks; no bill submitted.
June 1967	House Subcommittee Hearings in Washington.
July 1967	Continued House Subcommittee Hearings.
September 1967	Release of California Assembly Committee Report on redwood preservation; endorses Redwood Creek as the national park site.
October 1967	Full Senate Committee reports to the Senate Floor the "Senate Compromise Plan" (S. 2515); the bill calls for a 61,000 acre park (authorizing up to 64,000 acres) with 25,970 acres in the north unit (Mill Creek-Del Norte Coast) and 35,684 acres in the south unit (Prairie Creek-Redwood Creek); provision for the trade of the Northern Redwood Purchase Unit lands to private industry.
November 1967	Senate passes the Senate Committee compromise bill by a vote of 77 to 6 (S. 2515); amendment to disallow the trade of the Purchase Unit lands is defeated by a vote of 51 to 30.
April 1968	House Subcommittee Hearings in Eureka; outlook for final Congressional action considered "fair."
July 1968	House passes a park bill by a vote of 388 to 15; 28,400 acres is included within the park; no provision is made to trade lands within the purchase unit.

Maps of Redwood Preservation Plans

These maps are grouped here together to facilitate comparison. But they also tell something about the nature of the society and of the redwood resource. The complicated and subtle differences in the plans say that the redwood is a scarce commodity in great demand by different factions in society. No such plans would be made if the redwood were abundant enough for everyone's uses. And these pressured demands are an indication of the fullness of the land, of a society no longer empty enough to make decisions about resource allocation in an uncomplicated manner.



NATIONAL PARK PROPOSAL MAPS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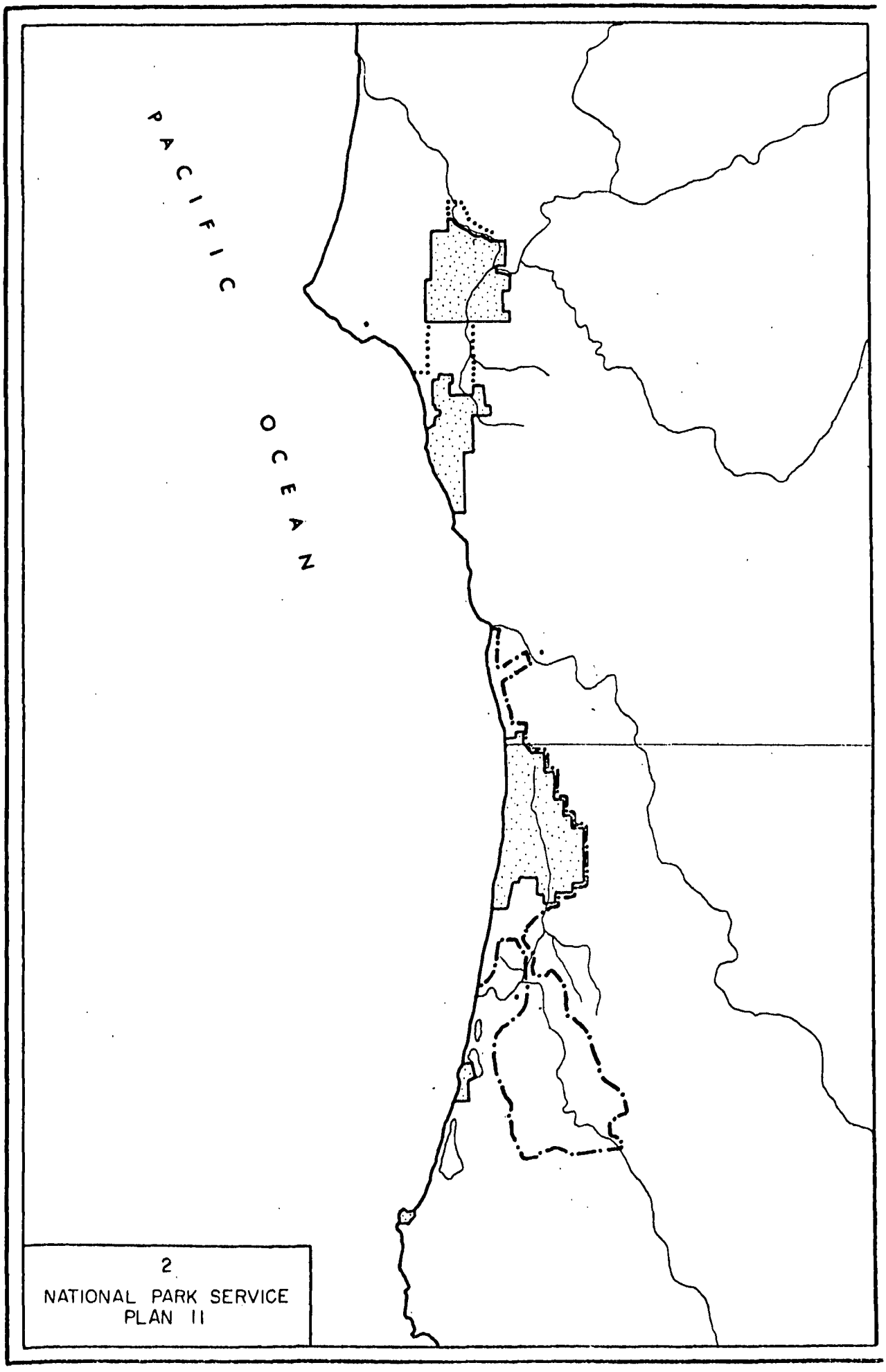
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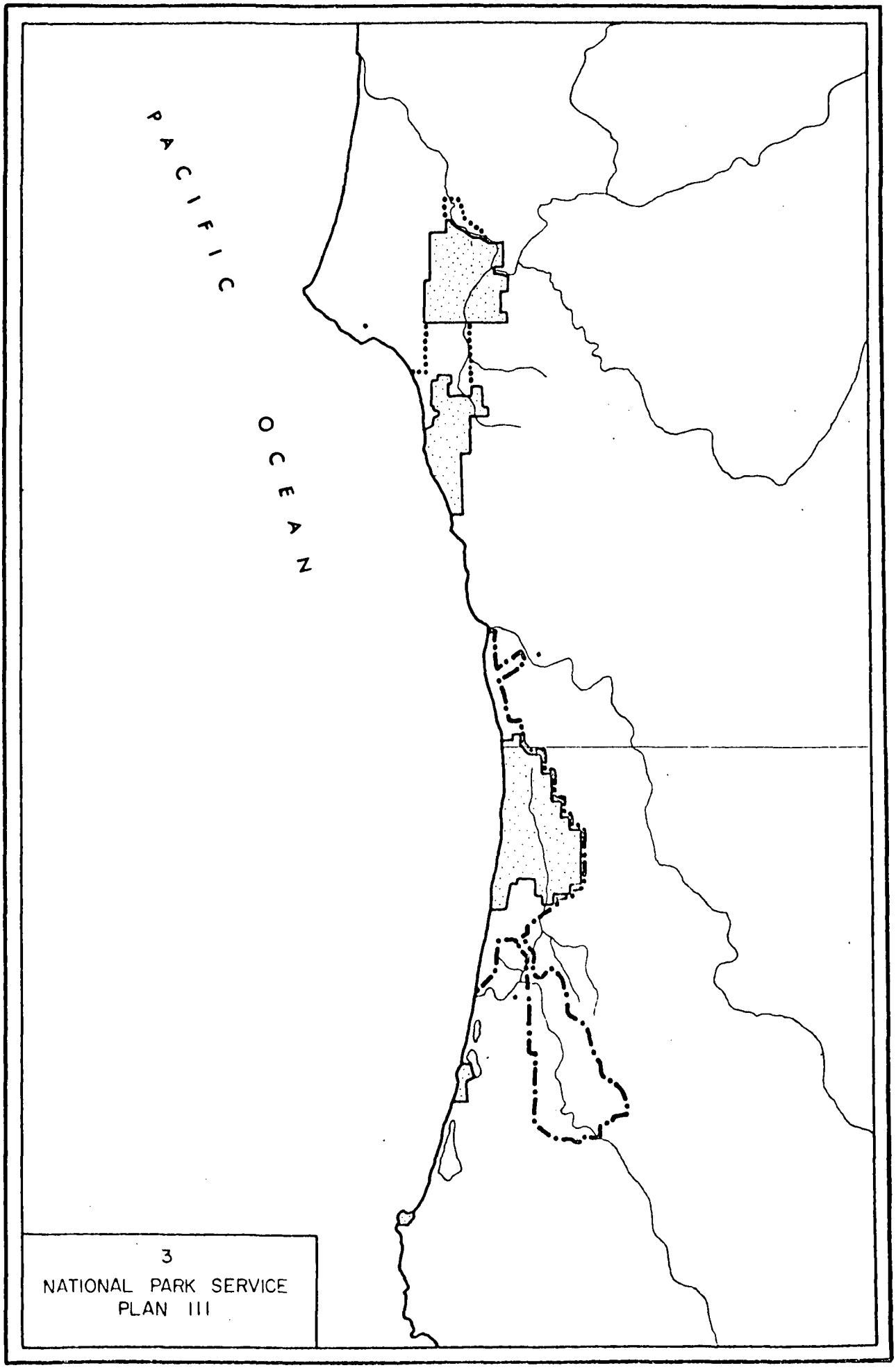
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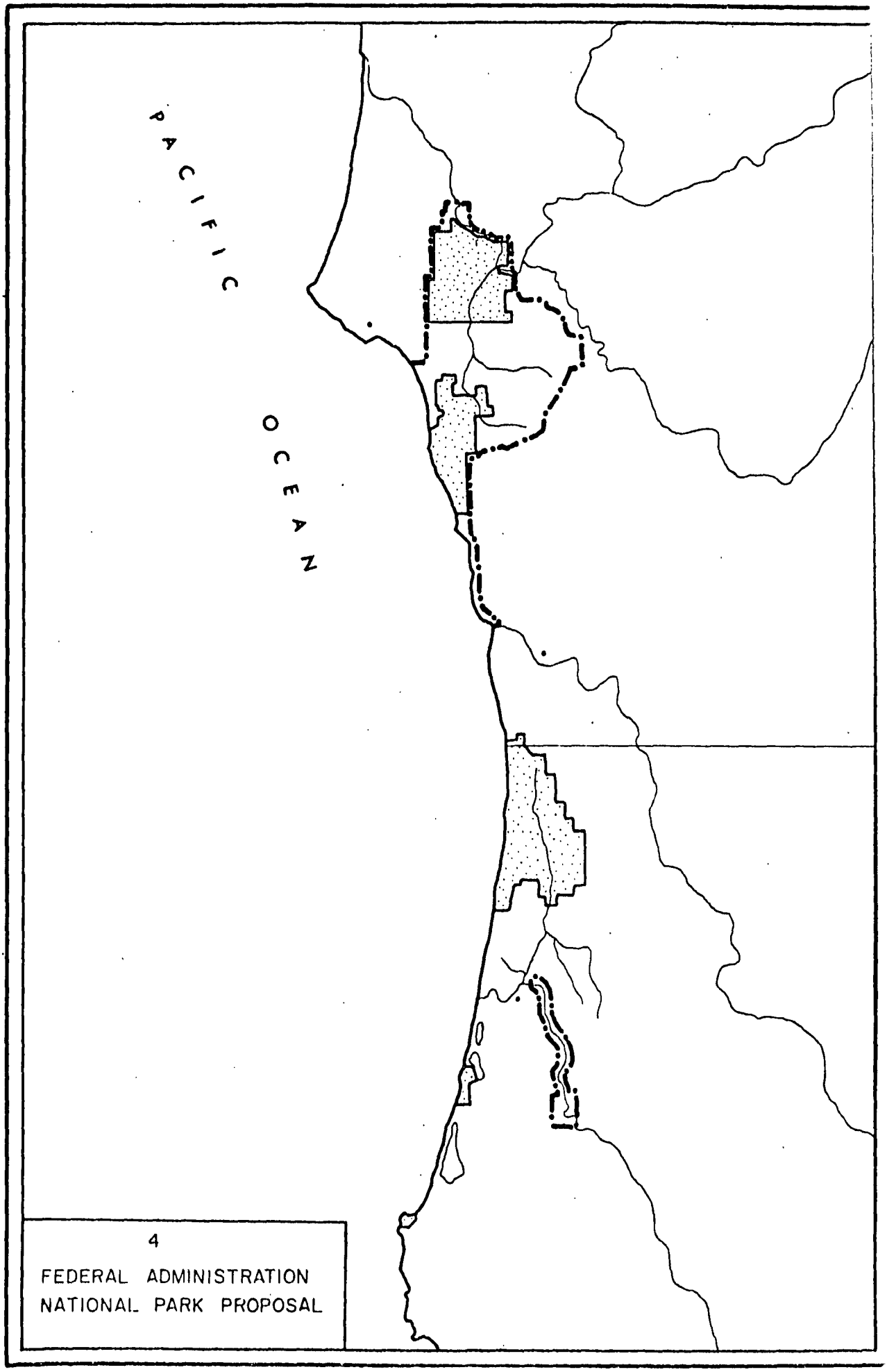
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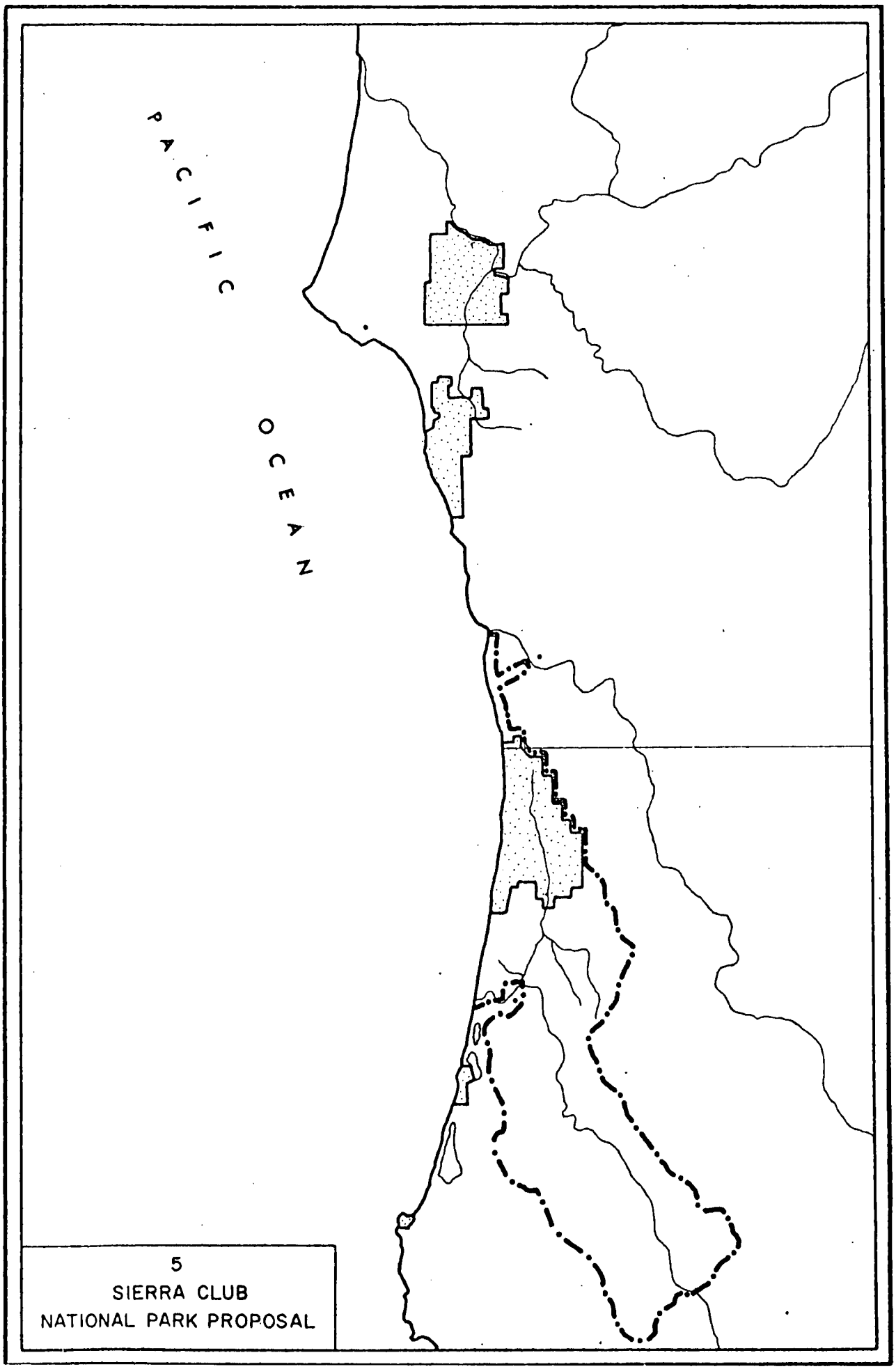
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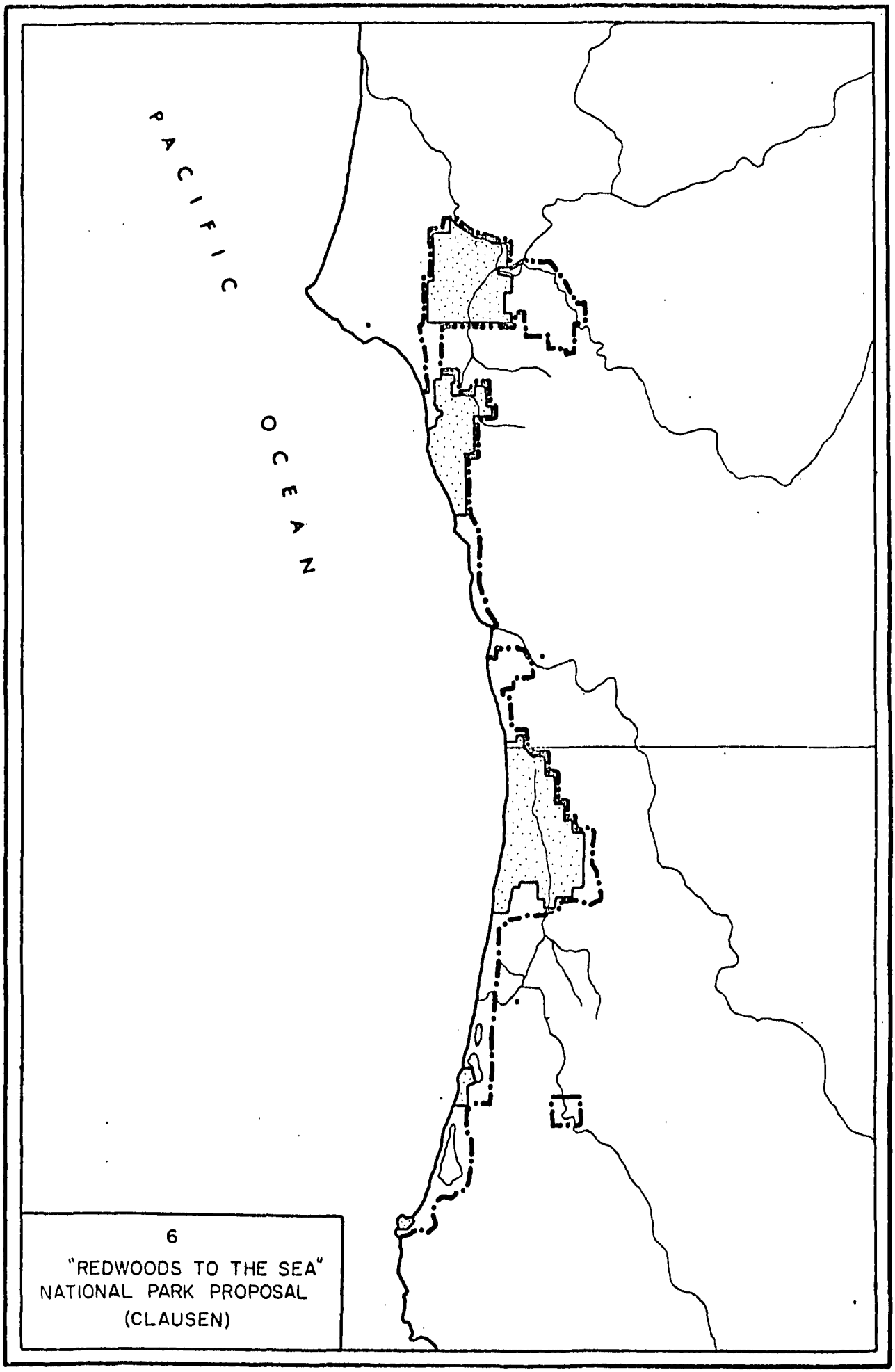

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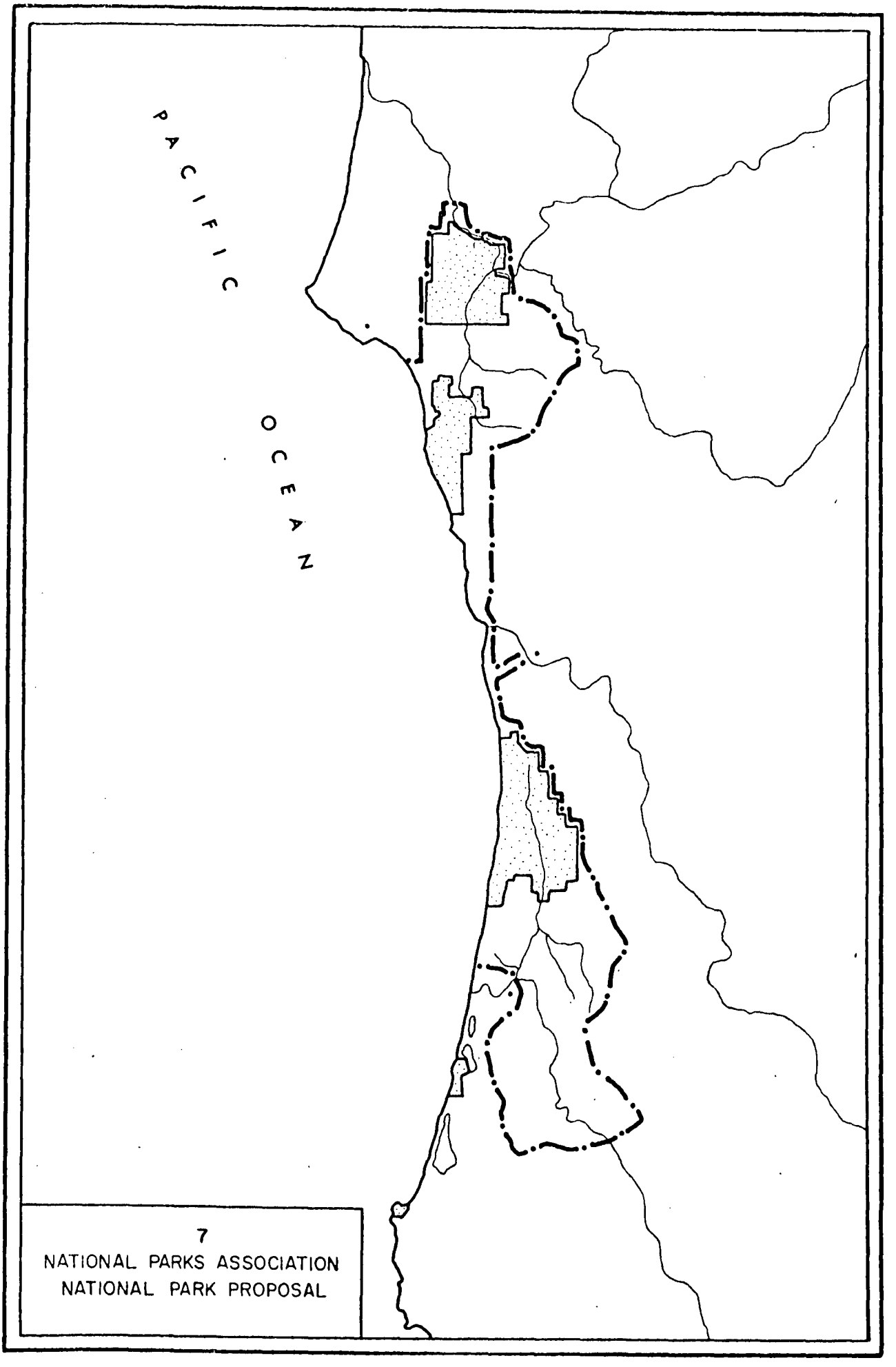
NATIONAL PARK PROPOSAL
(CLAUSEN)



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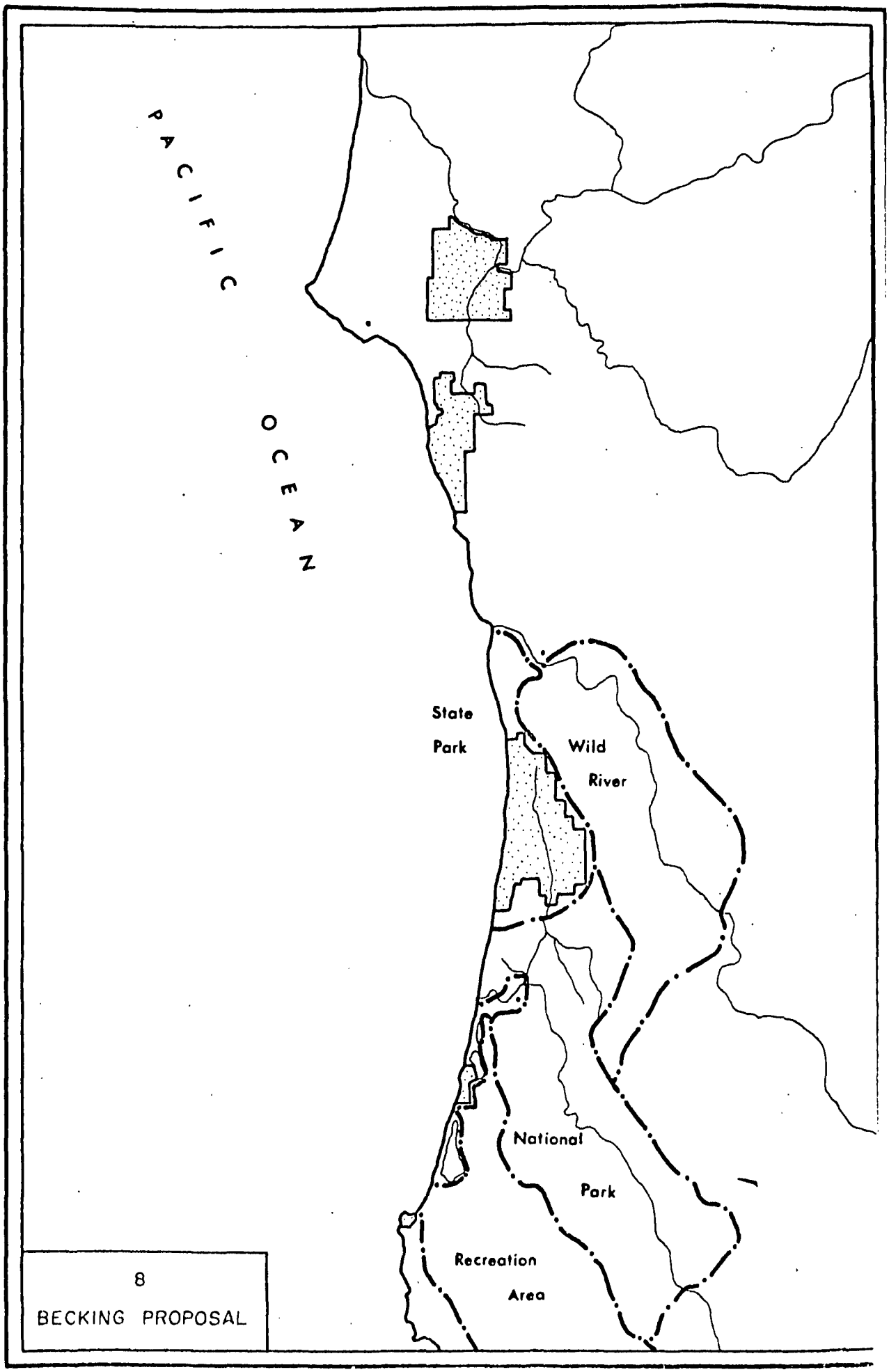
NATIONAL PARK PROPOSAL



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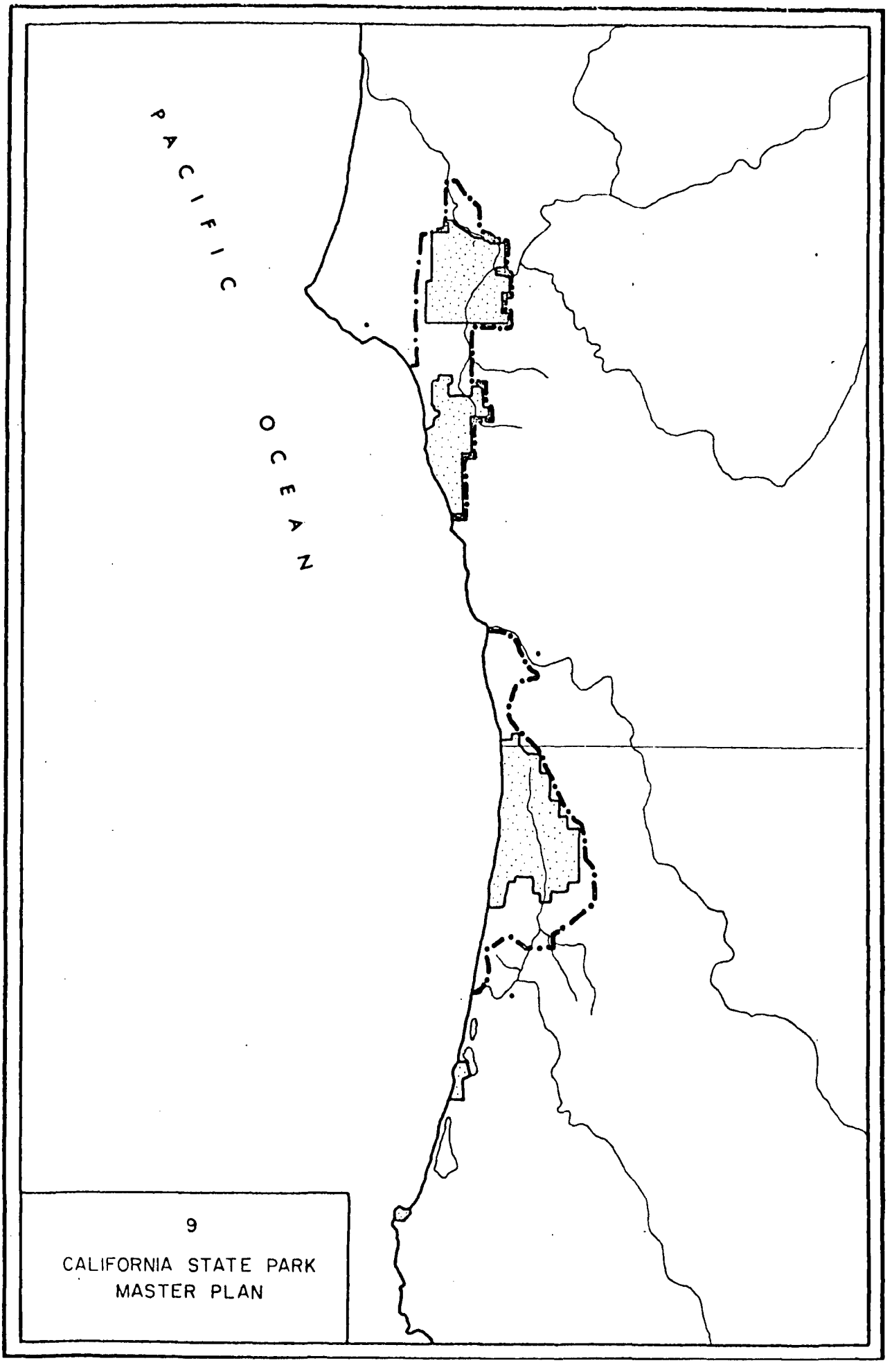

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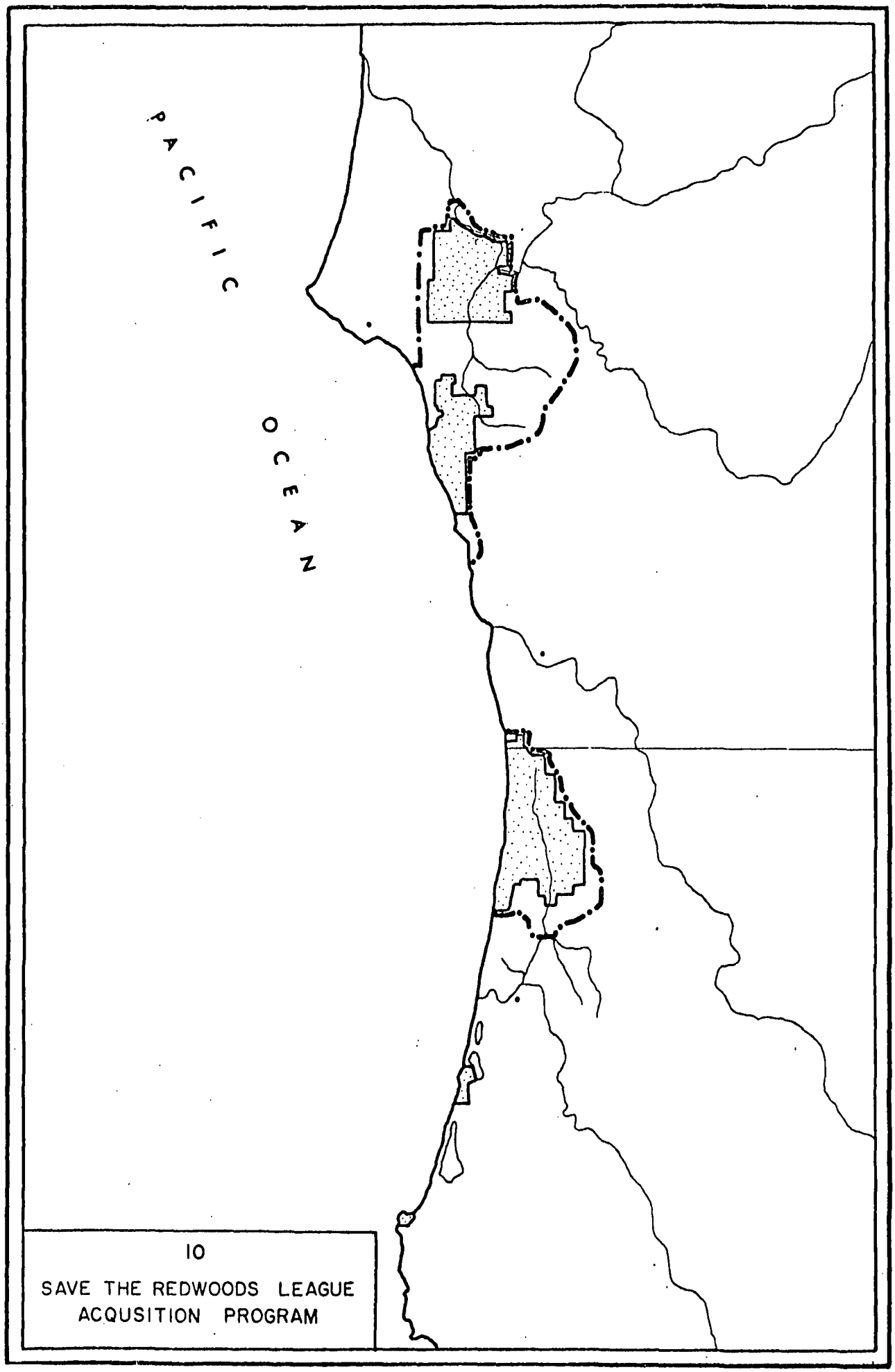
MASTER PLAN



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SAVE THE REDWOODS LEAGUE
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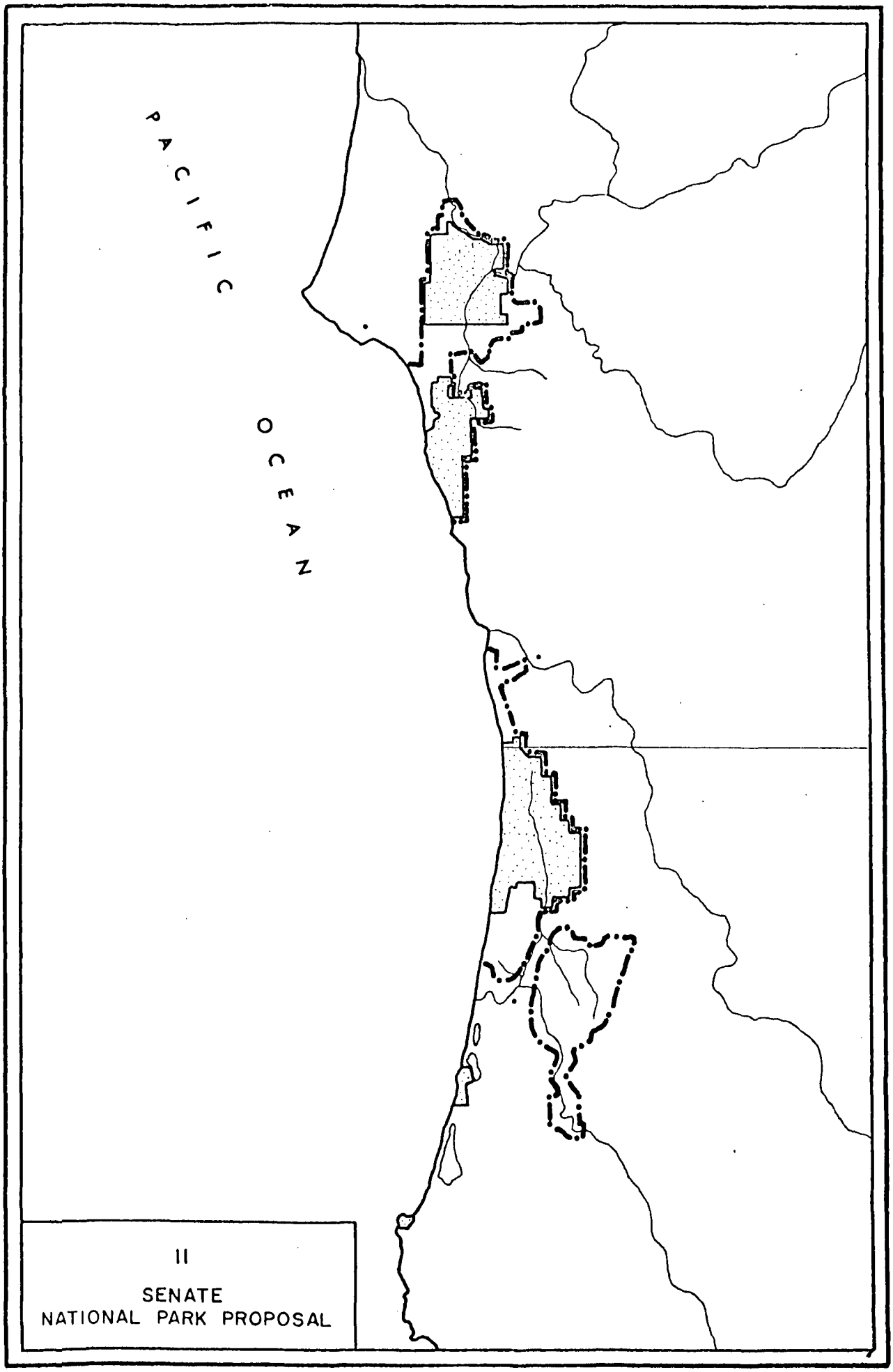
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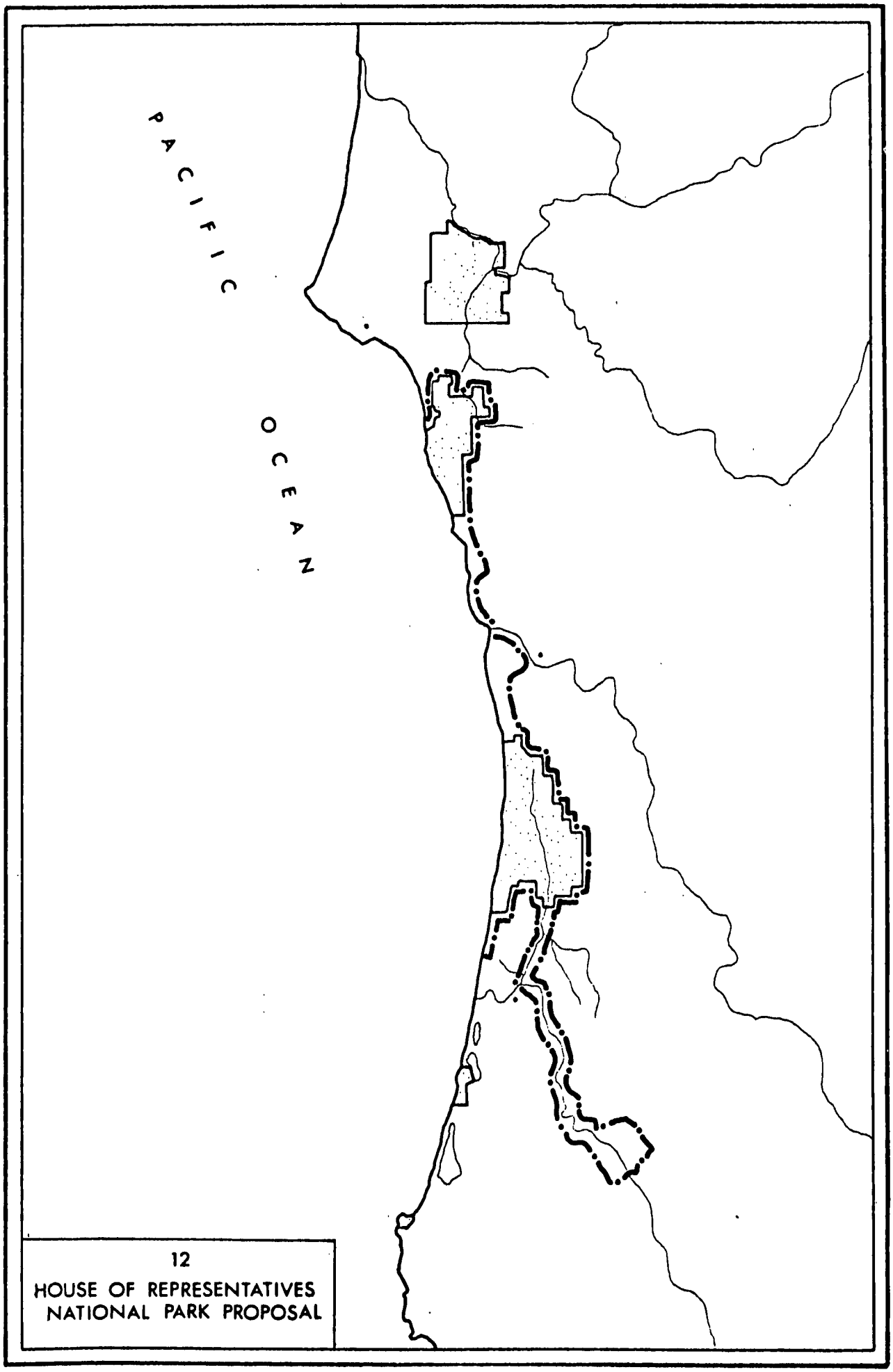
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HOUSE OF REPRESENTATIVES
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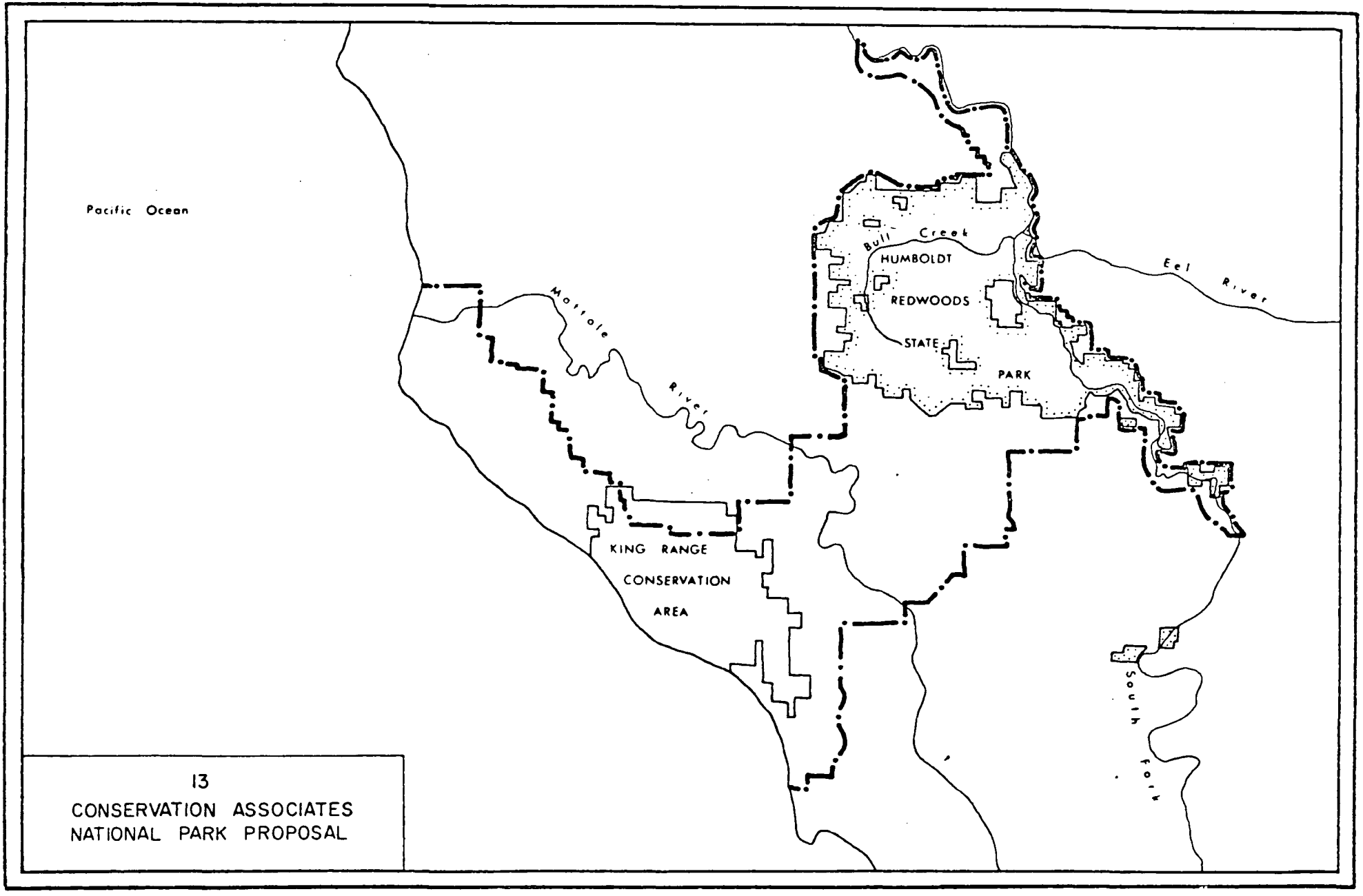

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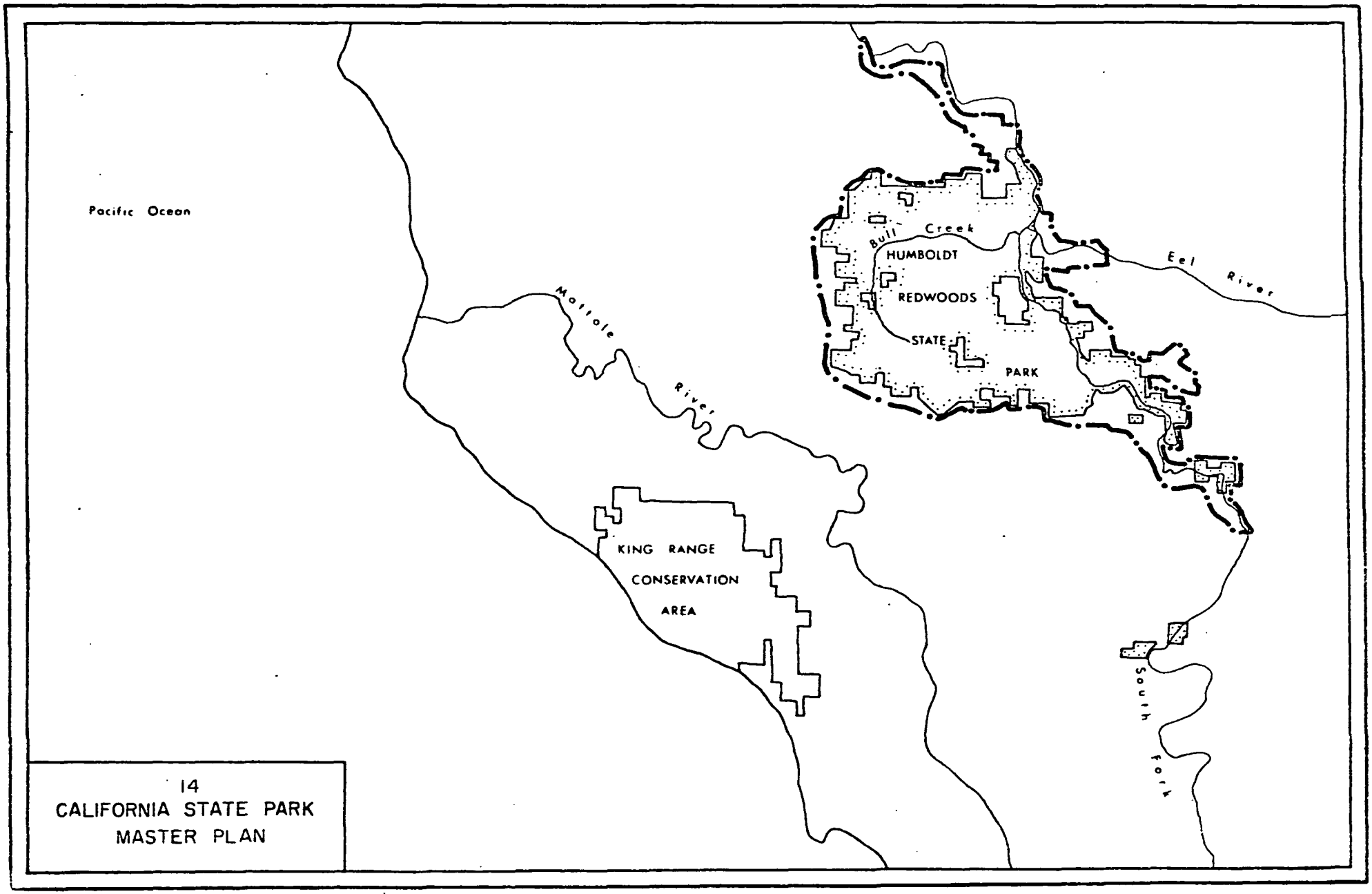

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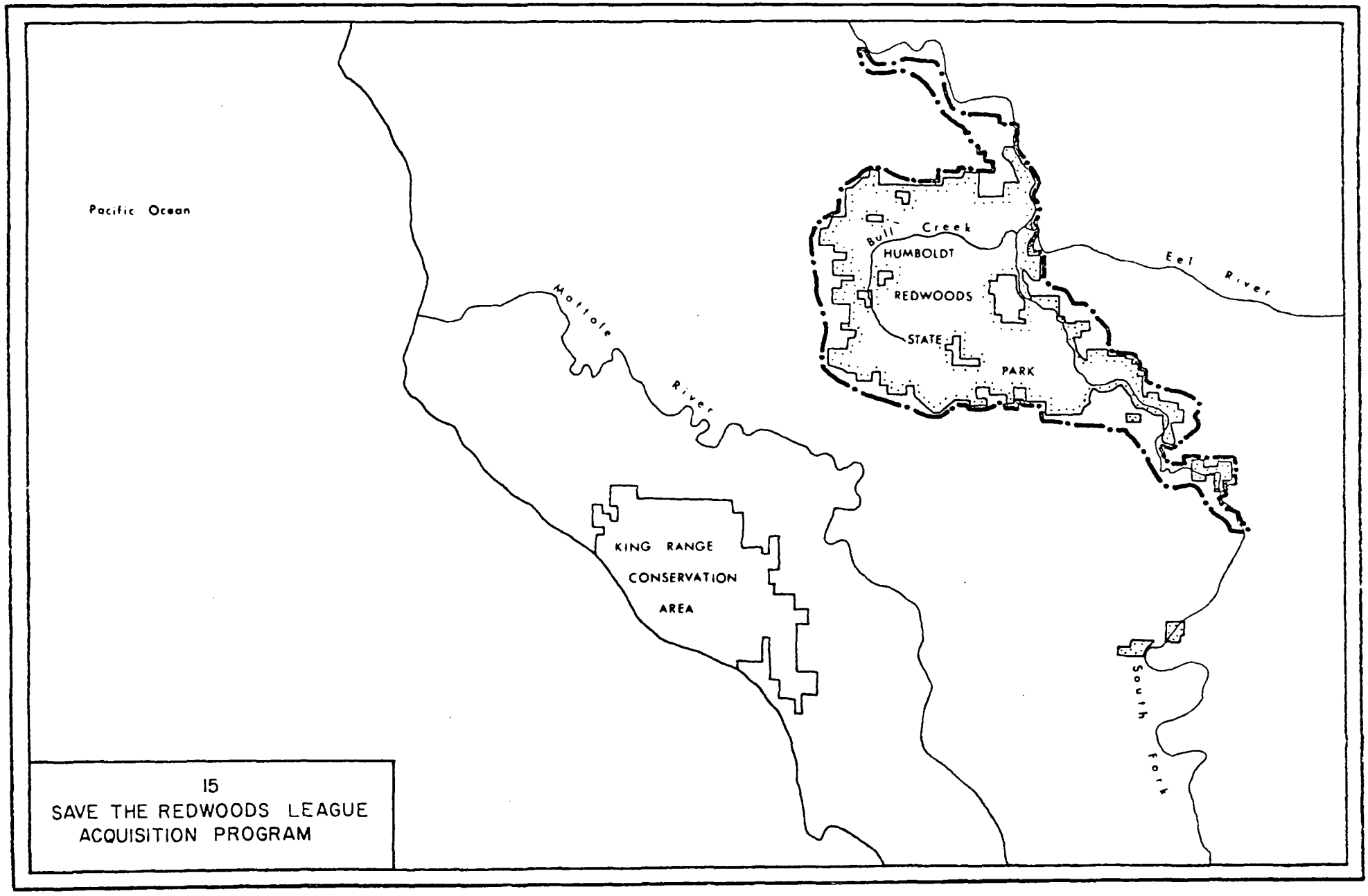

15
SAVE THE REDWOODS LEAGUE
ACQUISITION PROGRAM

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