THE LAND-USE HISTORY OF THE COAST RANGE PRESERVE, MENDOCINO COUNTY, CALIFORNIA

A thesis submitted to the faculty of
San Francisco State University
in partial fulfillment of the
requirements for the
degree
Master of Arts

by

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San Francisco, California

May, 1979

CERTIFICATION OF APPROVAL

I certify that I have read THE LAND-USE HISTORY OF THE COAST-RANGE PRESERVE, MENDOCINO COUNTY, CALIFORNIA by SHARON GRACE JOHNSON, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of requirements for the Master of Arts degree at San Francisco State University.

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The Land-Use History of the Coast Range Preserve, Mendocino County, California, is a detailed account of land-use practices throughout man's sequential occupation of the study area. Attention focuses on major stages of settlement, population densities of man and his domestic animals, and the type, degree, and aerial manifestations of various land use practices such as clearing, building, farming, grazing, and burning. Research methods include interviews, inspection of equipment used, library research, large scale field mapping of major homesites, interpretation of aerial and other photography, searching county, state and federal records for legal and landscape descriptions, changes in ownership, significant contracts, and relevant agricultural and economic information. Conclusions identify the intensity and aerial extent of man's land use in the study area, what changes occurred, both when and why, and what effect various land-use practices have had on the natural environment of the study area.

ACKNOWLEDGEMENTS

The preparation of this thesis would not have been possible without the generous assistance of a number of individuals. I am grateful to the late Robert Lovejoy for the initial inspiration and to Lucille Voight, Hattie Clarke, Danny Zager, Betty Barnes, Heath Angelo and particularly Mark Walker, who were always ready to answer my questions. I also appreciate the use of the historical photography provided by Lucille Voight, Hattie Clarke and Rena Lynn. Thanks also go to Alison Gardner for her assistance in field mapping, Brad Casoly for help in preparing photographs, the Redwood Coast Printers for use of thier equipment in the preparation of graphics, and to The Nature Conservancy for their financial support.

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CHAPTER I

INTRODUCTION

The Problem

The Northern California Coast Range Preserve, the study area of this thesis, is an area used for field research in the biological and physical sciences. Because it has experienced little human habitation in the last forty years, the environment appears relatively free from human disturbance. Man's previous imprint on the landscape has begun to fade and human features now blend into natural features. If this area is to be used for research on natural phenomena, then surely natural features must be differentiated from man-caused features. But before such differentiation can even begin, a classic geographic question arises, one whose answer may provide the foundations for later study and understanding of the natural features of this research area: What is the location and areal extent of man's past occupance and land use in this area and how did these factors vary through time? This is the question this thesis addresses.

The site of this study is the Northern California Coast Range Preserve, an 8,000 acre natural area (4,000 acres owned by The Nature Conservancy and 4,000 owned by the Bureau of Land Management) in northern Mendocino County

(See map 1). In a part of California where the timber industry forms the base of the economy, the virgin forest, unlogged watersheds and other intact environments of the preserve have become unique remnants of a landscape once typical of this part of the state. Because of its relatively untouched character, the preserve has been set aside as a natural area for research and education.

Scientists believe that research on such a natural area can provide insight into the functioning of natural systems--information that is becoming increasingly difficult to attain today because of the scarcity of intact natural areas. Recognizing this research potential, the United States Geological Survey has designated the preserve's largest intact watershed, Elder Creek, as one of its 57 national hydrologic bench-mark stations. Extensive hydrologic data are collected on these streams, in hopes of understanding hydrologic systems little affected by man. The information from these undisturbed stream systems will serve as "bench-marks" and offer a standard for comparison with disturbed systems.[1] The U.S. Department of the Interior has also recognized the importance of such natural areas and has declared the Elder Creek watershed a National Natural History Landmark.

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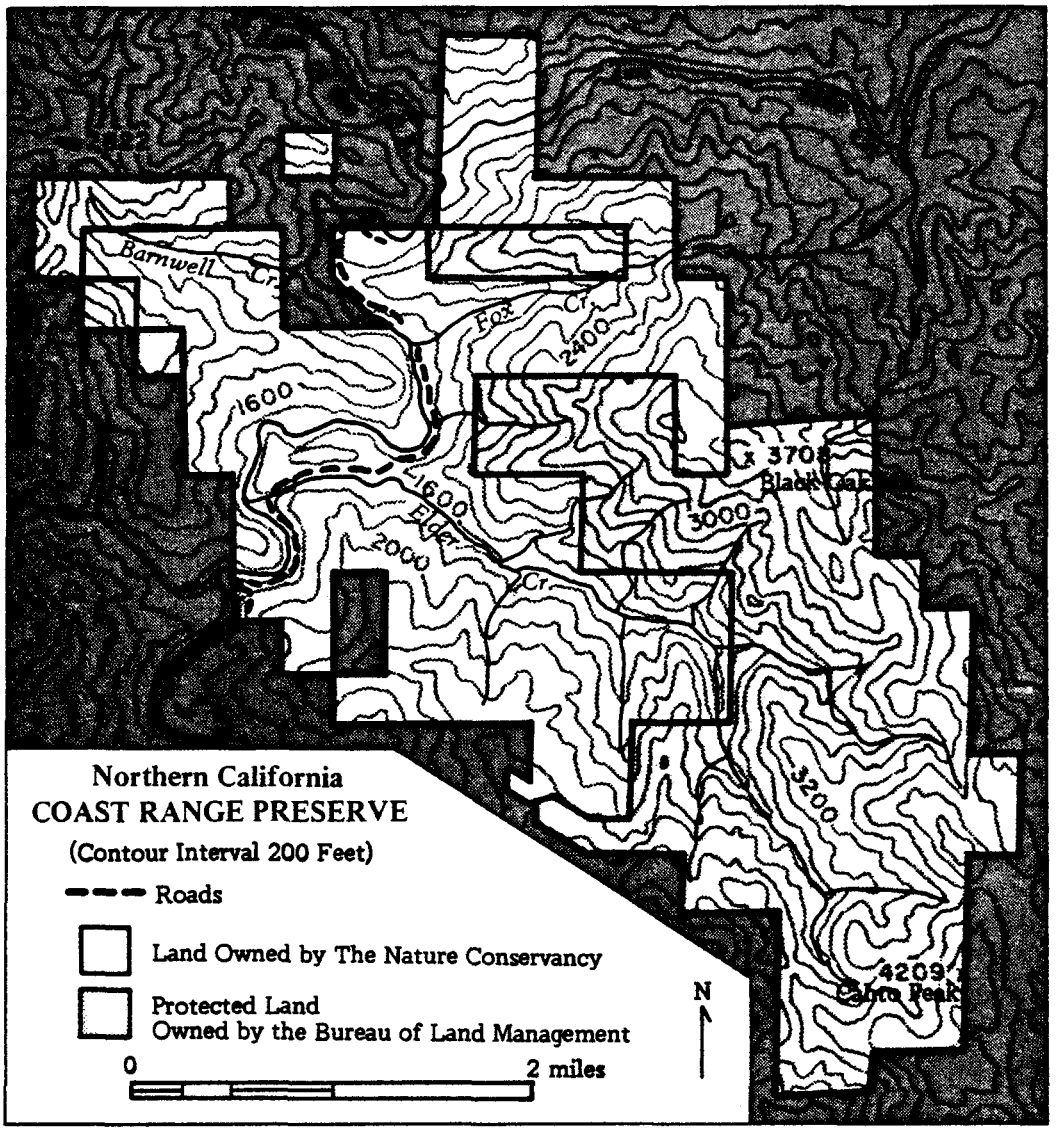
[1]Ernest D. Cobb and J. E. Biesecker, "The National Hydrologic Bench-Mark Netowrk" (Washington, D.C.: Conservation Networks, Geological Survey Circular 460-D, 1971), pp. 1-4.

MAP 1


Barnwell Cr.
Fox Cr.
2400
1600
1600
Elder Cr.
2000
3000
3200
4209
Cahto Peak
N
Northern California
COAST RANGE PRESERVE
(Contour Interval 200 Feet)
Roads
Land Owned by The Nature Conservancy
Protected Land
Owned by the Bureau of Land Management
0
2 miles

But if this area, so well recognized for its important natural qualities, is to be studied as a "bench-mark" or "landmark" for hydrology, natural history or other natural sciences, then a problem arises: Just how pristine is it? If the preserve was truly "natural", that is, never affected by man, this would not be a concern. But man has passed through and lived in virtually every part of California, including the preserve, and where he has been he has left his mark on the land.

Human occupation of the area began with the Indians but any imprint these aboriginal peoples may have had on the land is not easily detected by looking at the environment today. One can easily imagine, however, that their 5,000 or more years of occupance may have had some effect, perhaps by shaping the environment found by early settlers.[2] Although Spanish, Mexican, or Russian settlers never penetrated this area, the Americans certainly did. With the passage of the Homestead Act of 1862, the West was opened to settlement and northern Mendocino County, along with the rest of California, was filled with homesteading settlers trying to make a living on the land.

As one walks through the preserve today, signs of past occupance like chert flakes and arowheads from the In-

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[2]William Roop and Katherine Flynn of Archaeological Resource Service, personal interview, 1975. This date is given as the age of a projectile point found on the preserve by Heath Angelo.

dians, and abandoned fields, homesites or other remnants of early American settlement, are easily visible in the landscape. Perhaps the environment also bears other, more subtle human imprints that are not readily apparent today, changes in vegetation patterns, flora, fauna and hydrology for example. It does seem likely that man's influence is larger than is now perceived because of nature's tendency to cover and disguise areas where people once dwelled and made a living.

These seen and unseen features of man's past occupance may seem insignificant in comparison with the more dramatic effects of logging, the dominant land use of the surrounding area. However, if the preserve is to be used for bench-mark research, the impact of man's presence on the natural environment needs to be assessed so that man-caused features and successional features after human disturbance can easily be distinguished from natural features. Whereas the assessment of man's impact on this area might best be accomplished by biologic or other scientific study, before such impact assessment can even begin, certain geographic questions must be answered.

First, it must be determined how man used the area, the type and intensity of his use, the location and areal extent of his activities and how these "use" factors varied through time. This entails answering questions like: How did man use the land throughout the sequential occupation

of the preserve? Did he depend on the land for sustenance so that he hunted, raised food and animals, cleared, leveled, plowed and farmed, and built structures, roads and trails? It is the assumption of this thesis that he did and its objective is to describe these factors throughout the period of man's occupance.

Through detailed land-use maps, comparison of historical and contemporary maps and photographs, and the descriptions and commentary of the text, "The Land-Use History of the Coast Range Preserve, Mendocino County, California" will attempt to describe states of settlement, population densities of man and his domestic animals, and the type, intensity and areal manifestations of man's various land-use practices in this area. Besides providing information of historical and cultural interest, the basic geographic information of this thesis is intended to provide a foundation of information for all later research into the natural history of the preserve's environment.

Sources and Procedures

Information for this thesis was derived from numerous sources. Because there has been no previous research on historical land use in the study area, reliance on primary sources of information was required, particularly for Chapters Four and Five which deal with the American Period. One of the most significant sources, one without which this

study would not have been undertaken, is the "old timers". These individuals are the sons and daughters of the original homesteaders who spent the better part of their youth living on the homesteads in this area. Although this is a limited resource with only a certain number of individuals available, several were consulted for each of the major stages of American settlement (1885 to the establishment of the preserve in 1961). Information was gathered through interviews that were taped when it was allowed and, when distance was too great for a personal interview, through correspondence. A questionnaire was developed to aid in gathering initial data. This form was used in both personal interviews and correspondence. A copy is included in appendix A.

Another primary source of information for this study is contained in County, State, and Federal Records. Early surveyor's descriptions and maps from the U.S. Office of the Surveyor General provide descriptions of the landscape, settlement and land-use patterns and are available through the Bureau of Land Management in Sacramento. Legal descriptions of the first homestead claims and all subsequent changes in ownership of land or various rights is available through the Mendocino County Recorder's Office in Ukiah.

Secondary source information, such as population, agricultural and economic information of relevance, is available through various agencies of the State of California. All these records were searched, and pertinent infor-

mation, sometimes including maps, has been used in this thesis.

Library research also contributed a great deal of secondary information. Regional or topical data were provided in theses, dissertations and various publications. Perhaps the greatest single contribution any such reference made to this study was the "History of the Northern California Coast Range Preserve, 1884-1931" done by Robert F. Ettner in 1965. This is the only literature source that deals exclusively with this area on a scale of consideration similar to this thesis. This paper, as well as other unpublished reports concerning the preserve, is available through the preserve's base-data files. Reference work was also required for this study. The Kroeber Library and General Circulation Library at The University of California at Berkeley were the primary libraries used. Information on plants used by the Indians of this general area was obtained from the available literature. Those plants which grow on the preserve itself were identified using specimens in the preserve herbarium.

Photographs also provided a wealth of information for this thesis. Aerial photographs were used in constructing base maps of the homestead areas as well as for the detection and interpretation of other cultural features in the landscape. Early photographs, made available through the old timers interviewed, could be compared with photo-

graphs taken from the same locations today. These comparisons yielded significant information concerning the changes in vegetation cover, as well as assisting in the location of buildings, fields, roads and other developments.

Field mapping, primarily by using a surveyor's compass for triangulation and compass traverses, was undertaken to map details of the homesteads. Also of importance was the comparison of historical maps of the area with modern maps, photographs and other information compiled during this study.

Farm equipment, used by the settlers, is scattered around the old homesteads and is therefore available for inspection. The uses of these implements were discussed with the old timers interviewed.

Last but not least, field observation was important in locating cultural features in the landscape, locating archaeological sites, and for general insight. It was miscellaneous field observations and the insight and questions they provoked that were the first stimulus for this thesis.

Reliability of Sources

Considering the diversity of information resources utilized in this study, variation in reliability of information and sources is to be expected. Table 1 describes the types of information that have been used, the author's feelings as to their reliability, and what types of information were relied upon for each chapter. Information of

TABLE 1

RELIABILITY OF SOURCES

Types of Information	Reliability Index			Approx. Pct. Used Per Chapter				
				Chapter Number				
	High	Mod.	Low	2	3	4	5	6
Documentary Evidence								
From Primary Sources	X			32	10	5	20	
From Secondary Sources	X	X		35	40			
From Tertiary Sources		X		5	40			
Physical Evidence								
Evidence in the field explained by sources	X			15		15	10	60
Evidence in the field explained through deduction from sources		X		5	10	10	10	40
Evidence in the field unexplained with no related information			X					
Personal Communication								
Independent Collaboration of 3 parties								
First hand experience	X					5		
Second hand experience		X				5	10	
Independent Collaboration of 2 parties								
First hand experience		X		3		15	5	
Second hand experience		X				20	20	
Information from 1 party								
First hand experience		X		5		20	20	
Second hand experience			X			5	5	

low reliability, as determined by this table and through additional subjective evaluation, has been avoided.

Reliability of sources is particularly difficult to assess where personal communication is concerned. Some information has been considered of low reliability and not used primarily because of this author's subjective evaluation. Whenever possible, independent collaboration of information from separate informants were sought but when this was not possible, a subjective evaluation of the information's reliability needed to be made. In making this evaluation the informant was scrutinized in terms of general clarity of mind, recall of detail, tone, confidence and conviction in giving information, whether such information was readily and repeatedly recalled in the same form, how dates were remembered (One source, for example, related dates of events to births in his family, which were numerous. This information was considered reliable.), and whether or not the informant liked to tell seemingly "tall tales". If, through this subjective evaluation, reliability of information was felt to be questionable, the information was not used. Fortunately, several excellent informants were available for this study.

Thesis Organization

In order to discuss settlement and land use history, a basic understanding of the setting is required. The second chapter of this thesis, "Site and Situation",

provides such background, as it consists of basic descriptions of the location and boundaries of the study area, and its terrain, climate, hydrology, flora and fauna. Emphasis is placed on factors that strongly relate to land-use events.

From that point on, the thesis is organized in chronological order, considering first the earliest periods of land-use and proceeding to the present. The third chapter deals with the Indian period of habitation and includes a brief discussion of who they were, their general way of life, and basic food habits. These factors essentially define the Indian land-use practices that are discussed. This chapter concludes with a summary and discussion of possible Indian influence on shaping the environment found by early settlers.

Land use of the American Period is discussed in the fourth and fifth chapters, the Homesteading Period (1885 to approximately 1925) being covered in the fourth chapter, and the ownership and land-use from the close of the Homestead Period to the present (approximately 1930 to the present) being covered in the fifth chapter. These two chapters form the bulk of the thesis, encompassing the period of greatest intensity and areal manifestations of land-use.

The conclusion to this thesis forms chapter six. A brief summary of past events, including a series of comparative land use maps from 1885 to 1960, and accompanying discussion form the bulk of this chapter. Closing remarks

review the basic questions this thesis sought to explore and outlines the findings detailed in the preceeding chapters. Additional research needs are identified at this point.

CHAPTER II

SITE AND SITUATION

Location

The area of concern for this study is The Nature Conservancy's Northern California Coast Range Preserve, approximately 180 miles north of San Francisco and five miles northwest of the town of Branscomb in Mendocino County (See map 2). Vehicle access is provided by Wilderness Road via the Branscomb Road which can be reached by U.S. 101 at Laytonville, between San Francisco and Eureka, or by Highway 1, fifteen miles north of Fort Bragg. The Branscomb Road is the northernmost crossroad between Highways 1 and 101 before they meet at Leggett ten miles northeast of the preserve.

Boundaries of the Study Area

Since the Northern California Coast Range Preserve is the area of study, the boundaries of the study area are those of the preserve itself at the end of 1961. This area is described by map 1 on page 3.

The adjacent 4,000 acres of protected Bureau of Land Management land is not considered in this study because research showed that, aside from possible Indian uses that will be covered in chapter 3, little human use has been

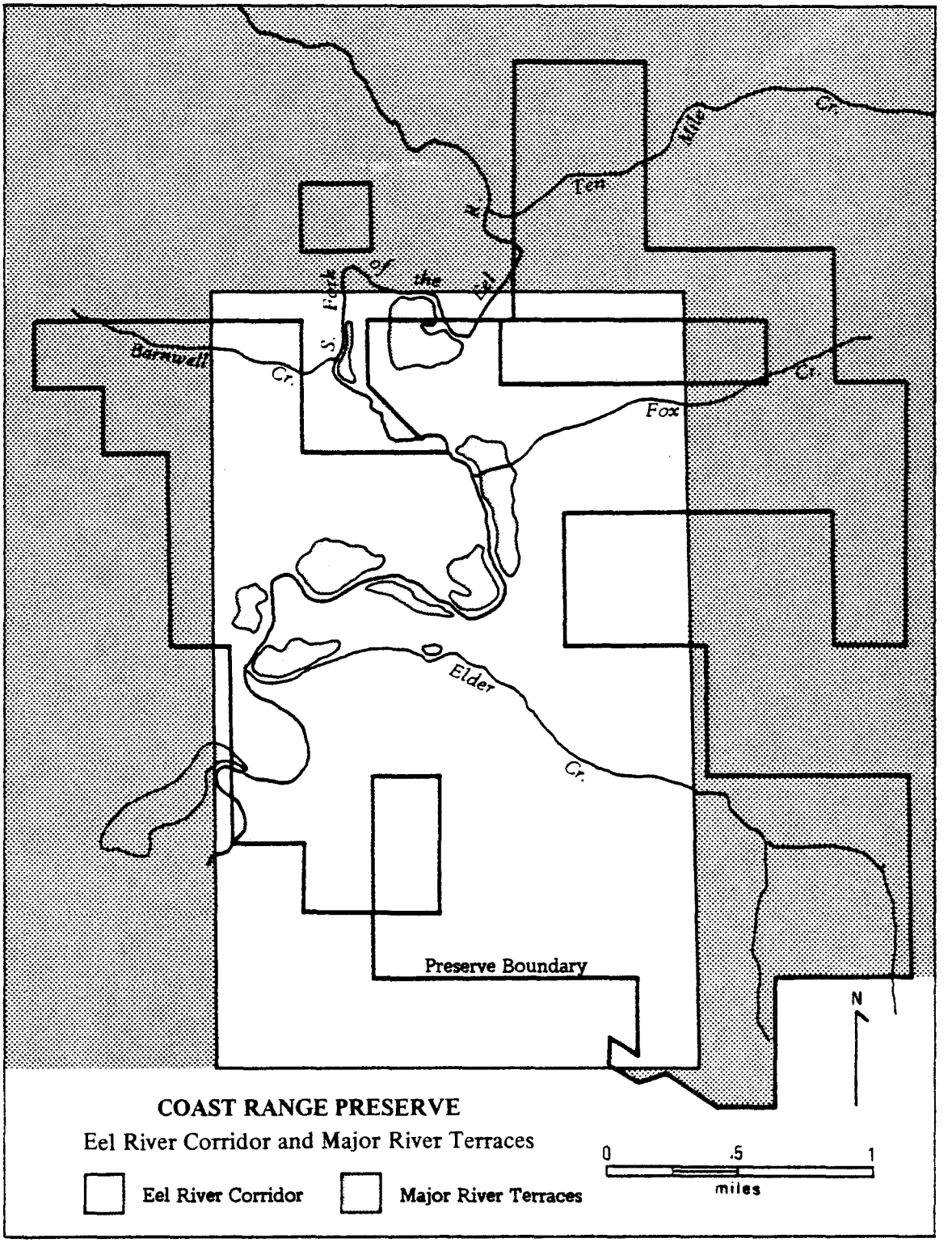
made of these lands, This is easily understandable as these are the higher, steeper, more isolated lands that were the least desirable to the homesteader. The very fact that these lands had been opened by the Homesteading Act of 1862, but remained in the public domain simply because they were never claimed, illustrates their more marginal character.

The intensity of land use in the study area itself has varied considerably from place to place. The preserve can be divided into two basic regions according to land-use intensities. The first is that area of intensive use that can be described as the "Eel River Corridor" (See map 3). This area contained the major homesteads and most of the human and domestic animal population. In contrast, a little-used area reaches from the Eel River corridor up into the higher elevations to the boundaries of the preserve. This region was the domain of squatters and scattered homesteaders. Agriculture was sparse, human and domestic animal populations were low and only intermittent, and man's influence on the landscape was minor. Although considered in much less detail, this little-used area is still of importance here in that only by studying the patterns and impact of both degrees of land use, can a holistic picture of the mosaic of man's influence on this landscape be developed.

Topography

As part of the Northern Coast Ranges geomorphic province, the topography of the preserve reflects that of

MAP 3


Ten Mile Cr.
South Fork of the Eel
Barnwell Cr.
Fox Cr.
Elder Cr.
Preserve Boundary
N
COAST RANGE PRESERVE
Eel River Corridor and Major River Terraces
Eel River Corridor
Major River Terraces
0 .5 1
miles

the general area.

> Topographically the province is characterized by elongated, northwest-trending ridges and valleys which are controlled by the underlying geologic structure...Zones of weakness such as faults or crush zones are commonly important factors in the development of major drainage channels.[1]

Within the preserve itself, the rocks are of the coastal belt of the Franciscan Formation. These rocks are probably of the Cretaceous age and are primarily unmetamorphosed sedimentary rocks like sandstone, shale and conglomerate.[2]

The terrain is steep and is characterized by young streams and a mature landscape of great relief. The highest elevation on the preserve is 4233 feet at Cahto Mountain and the lowest elevation is 1225 feet on the South Fork of the Eel River at Horseshoe Bend. Landsliding is common in such a steep terrain, but aside from major sliding due to river flooding and badly placed logging roads, the most common type of mass wasting on the preserve is soil creep. On many of the slopes of the preserve, soil creep is indicated by the chaotic orientation of leaning trees or the obvious downhill displacement of the lower trunks of trees and the upslope bend of the upper trunks--a configuration

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[1]"North Coastal Area Investigation", Bulletin No. 136, Appendix A, Watershed Management in the Eel River Basin (State of California, Department of Water Resources, June 1964, preliminary ed.) pp. 14-15.

[2]Ibid.

which develops as the trees attempt to maintain their center of balance in spite of the gradual downhill motion of their bases (See figure 1).

Of prime importance to the settlement history of the area are the river terraces. These are the old alluvial plains of the pre-Pliocene Eel River. Uplift in the Pliocene and Pleistocene epochs rejuvenated the river, causing it to downcut and form a new river channel well below its old alluvial bed,[3] recently, aged at between 40,000 and 125,000 years old.[4] The resultant river terraces are the only relatively flat areas in the preserve and consequently were the prime sites for homesteading and agriculture (See map 3).

Also of importance to the settlement of the area is its continual supply of water. Since snowfall is never heavy enough to provide a snow-pack to feed rivers and streams, it is groundwater that must provide this supply. There are numerous springs in the area, many of them rising along the tops of the mountains and ridges. These springs, some of which may be related to unmapped faults, keep the South Fork of the Eel River, and Elder, Fox and Skunk Creeks flowing all year. Water can also be found in various smaller seeps and creeks in the peak of the dry season.

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[3]Ibid., p. 17

[4]Kelly Collins, "Geology of the Northern California Coast Range Preserve, Mendocino County, California," (unpublished report to The Nature Conservancy, 1979), p. 19.

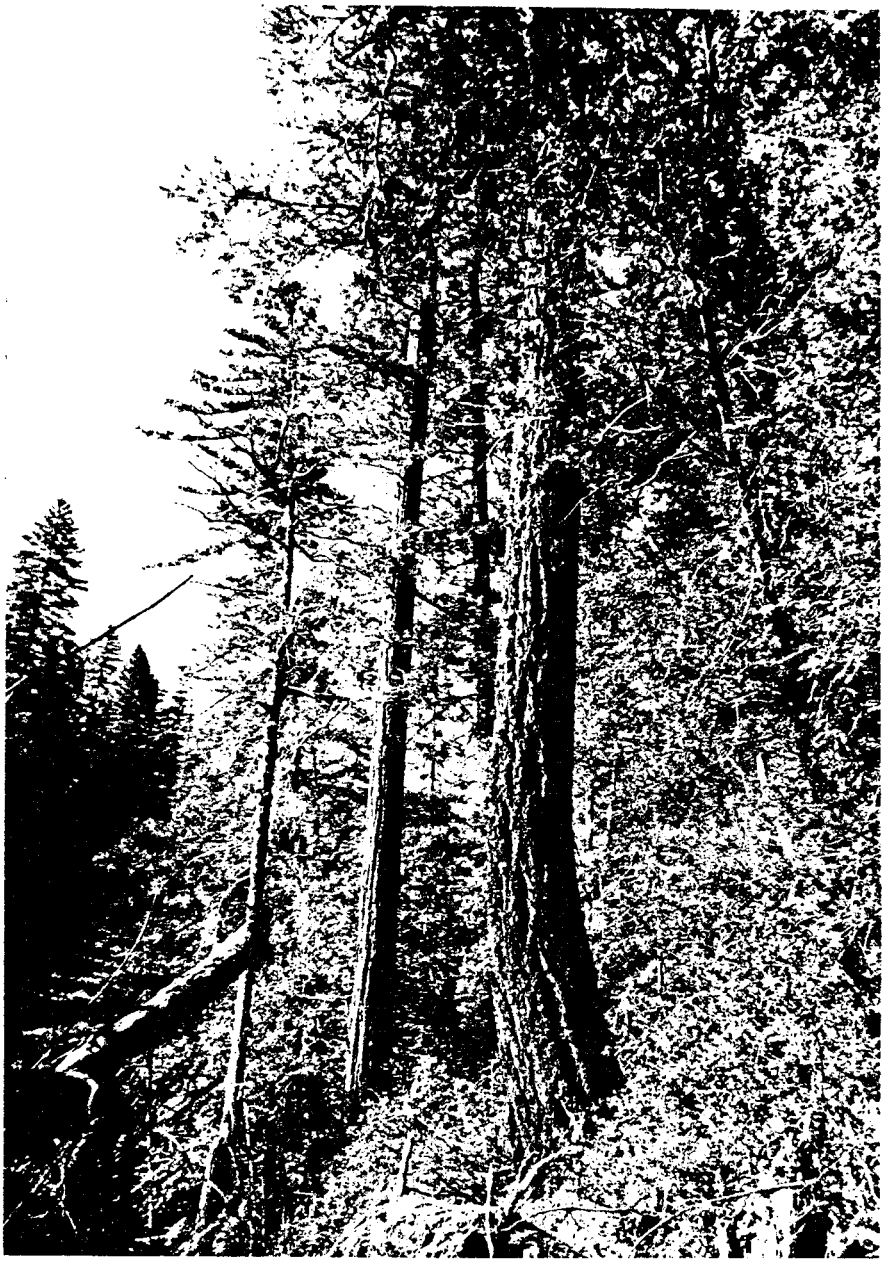

Figure 1. The bulge in the lower trunk of this tree indicates soil creep, a common type of mass wasting on the preserve. Because of the downhill displacement of the lower trunk, the tree attempts to compensate and maintain its center of balance by bending so that the upper trunk is either vertical or leaning uphill.

The terrain of the study area is rugged and complex. Because of its low economic mineral content and general inaccessibility, it has remained relatively unstudied by geologists. The lack of mineral wealth, coupled with the scarce availability of flat land, and general isolation, made this area one of the last penetrated by homesteading settlers.

Hydrology

The preserve is located in an area of heavy precipitation with an annual mean of 84.88 inches.[5] Heavy rainfall, with at least 65 percent of it being runoff,[6] gives birth to large streams that swell with the winter rains and shrink with the summer drought. The study area receives water from three major perennial streams: the South Fork of the Eel River, flowing approximately north-south through the preserve and Elder and Fox Creeks flowing approximately east-west and joining the South Fork of the Eel within the preserve. In addition to these sources of water, there are also numerous springs and spring-fed intermittent creeks.

The South Fork of the Eel River has a watershed of 43.9 square miles before it enters the preserve. From a

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[5]Calculated from rainfall records taken at the mouth of Elder Creek by Heath Angelo from 1946 to 1976.

[6]S. E. Rantz, "Surface-Water Hydrology of Coast Basins of Northern California." U.S. Geological Survey Water-Supply Paper 1758 (Washington, D.C., U.S. Government Printing Office, 1964).

clear, slow, and tranquil summer stream the river swells to a turbid torrent in the winter. The flow fluctuates greatly. Its extremes have gone from a minimum of 0.45 cfs in August of 1977 to a maximum of 20,000 cfs during the December 1955 flood.[7] Although the river has never been known to flood the river terraces in the preserve during historic times, it does present a major obstacle to travel in the winter. Often, crossing is only possible at trams and bridges, and bridges periodically wash out in winter floods. In contrast, the summer river can easily be stepped across without getting wet and vehicles can be driven over fords. Even though there is always some water in the river during the summer, its low elevation in comparison to the river terraces made it impractical to develop for irrigation before electric and gasoline pumps. Even domestic water supplies for early settlers were sought elsewhere.

Elder Creek is the second major stream on the preserve, with a watershed of 6.50 square miles. Like the South Fork of the Eel River, Elder Creek shrinks and swells with the arrival and departure of the winter rains. Elder Creek reached a record low of .39 cfs in August and September of 1977 and its estimated high during the 1964 flood

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[7]1969 Water Resources Data for California, Part 1. Surface Water Records, vol. 1 (U.S. Department of the Interior, Geological Survey), p. 442.

was 3,660 cfs.[8] The water from this stream was conveniently exploited for domestic use and irrigation by the Davis and Elder homesteads (see chapter 4) situated on the stream terrace on the north bank of the creek just before its confluence with the South Fork of the Eel. The Elder homestead is the site of the Angelo home today, which also utilizes Elder Creek water.

Fox Creek is the third major perennial stream on the preserve. Its 1.03 square mile watershed exhibits the same extremes between high and low water as do Elder Creek and the Eel River. Although the flow of Fox Creek has never been measured, seasonal fluctuations on this small watershed may actually be greater than on Elder Creek because "generally, the smaller the watershed the higher the [per-unit-area] peak flow to be expected therefrom and the less sustained the minimum flow."[9] Fox Creek dissects a river terrace into two meadow areas that were homesteaded. The creek provides a very practical source of water for agriculture and domestic use on these meadows.

Aside from these perennial streams, numerous springs and spring-fed creeks were also available to provide water

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[8]1972 Water Resources Data for California, Part 1. Surface Water Records, vol. 1 (U.S. Department of the Interior, Geological Survey), p. 457.

[9]Peter E. Black, "Elder Creek Project Studies" Progress Report (unpublished consultant report to the Bureau of Land Management and The Nature Conservancy, 1964), p. 24.

for early homesteaders. In fact, many of the meadows themselves had marshy areas where spring water collected. These springs were particularly important on the west side of the Eel River where large perennial streams are absent (perhaps because of a slight rainshadow from Elkhorn Ridge). Map 3 depicts the major streams of the study area. Those running into the river terraces were of particular importance to early settlement and consequently to this thesis.

Climate

The climate of the study area, like that of other parts of the Northern California Coast Range, is of the Mediterranean type. This is a mild, temperate climate with wet winters receiving rain between October and May from storms generated in the Aleutian Low near the Gulf of Alaska. With the northward shifting of the Hawaiian High in the summer months, the climate of the area comes under the influence of this high pressure cell which brings dry, warm-to-hot, summers.

The preserve is in one of the highest rainfall areas in California with an annual average of 84.88 inches. This annual precipitation is not the result of so many more rainy days than drier, neighboring areas, but rather, the result of increased intensity of rainfall. Four inches in a twenty-four hour period are not unusual and as much

as 12.26 inches have fallen in twenty-four hours.[10] Annual precipitation varies considerably from year to year, from a low of 53.95 inches in 1946-47 to a high of 136.40 inches in 1973-74.[11] Figure 2 further describes the precipitation characteristics of the area. Most of this falls as rain. Winter storms do bring some snow in the valleys but rarely more than twenty inches in a season or 6 inches on the ground at one time.[12] The higher elevations receive more snowfall and may maintain their snowcover for weeks at a time.

Although summers are essentially dry, some rain does occur. Thunderstorms that periodically develop to the east of the preserve may bring rain as well as infrequent lightning and lightning-caused fires.[13] Sometimes the freak occurence of a winter-type storm will also bring summer rain but, for the most part, in amounts insignificant in the general summer dry pattern.

In addition to the general Mediterranean climate,

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[10]Taken from rainfall records taken at the mouth of Elder Creek by Heath Angelo from 1946 to 1976. The record high was reached December 22, 1964.

[11]Ibid.

[12]Heath Angelo, area resident, personal interview and personal observation.

[13] Lightning from summer thunderstorms caused a fire in the Elder Creek Watershed in 1968, and in 1974, two separate fires near opposite boundaries of the preserve.

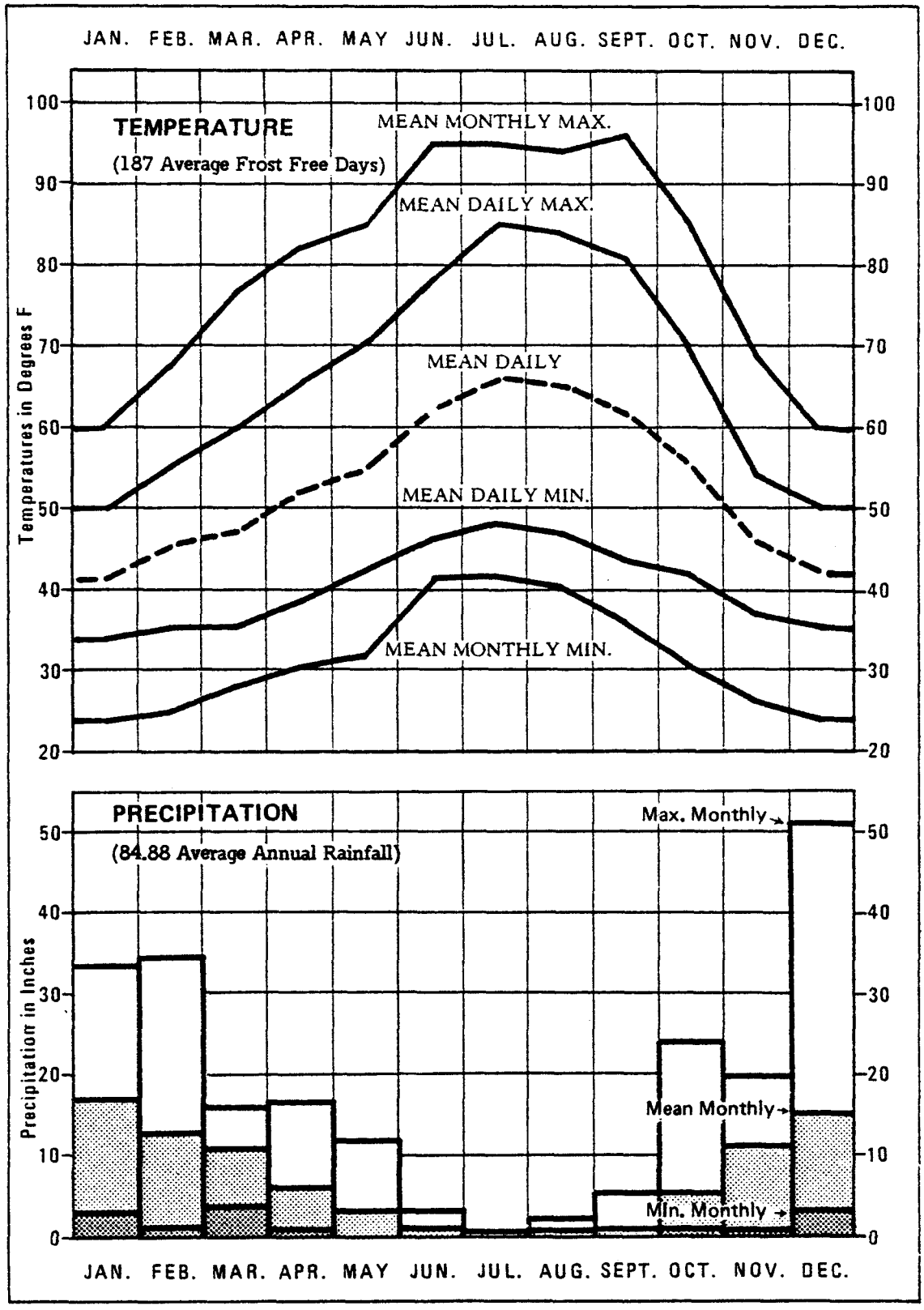
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEPT. OCT. NOV. DEC.
TEMPERATURE
(187 Average Frost Free Days)
MEAN MONTHLY MAX.
MEAN DAILY MAX.
MEAN DAILY
MEAN DAILY MIN.
MEAN MONTHLY MIN.
Temperatures in Degrees F
100
90
80
70
60
50
40
30
20
PRECIPITATION
(84.88 Average Annual Rainfall)
Max. Monthly
Mean Monthly
Min. Monthly
Precipitation in Inches
50
40
30
20
10
0
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEPT. OCT. NOV. DEC.

FIGURE 2.

throughout this part of the coast range the actual climate of a particular location is strongly influenced by site factors with elevation and orientation exerting perhaps the strongest influences.[14] These site factors create a variety of microclimates with varying rainfall and temperature characteristics which correspondingly affect the plants, animals and soils at their locations. As a result, general descriptions of the climate of the area have limited applicability to any particular site.

The Coast Range Preserve is within eight miles of the ocean, but the strong moderating effect of maritime air has a limited effect on the climate of the preserve due to the presence of Lincoln Ridge, a northwest-by-southeast trending ridge on the west side of the South Fork of the Eel River. Not dissected by major streams that open to the coast, it provides an effective barrier that retards the movement of maritime air into the South Fork Eel area. This topographic feature provides for a difference in climate between the study area and areas more strongly influenced by the marine "summer fog belt."[15]

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[14]"North Coastal Area Investigation," Bulletin No. 136, Appendix A, Watershed Management in the Eel River Basin (State of California, Department of Water Resources, June 1964, preliminary ed.), p. 14.

[15]An interesting point to note is that more summer fog is observable just slightly south of the preserve in the Big Charlie Creek area of the South Fork of the Eel drainage. Perhaps this creek provides a "fog gap."

Summer fog does penetrate the preserve late in the evening on some summer days but burns off early the next morning permitting much higher daytime temperatures than on the coast where the fog persists. Because of the general absence of summer fog, moisture provided by fog drip is lower here also.

With the reduced influence of marine air, the annual and diurnal fluctuation of temperature is greater on the preserve than on the coast; consequently, summer days are commonly in the eighties (Fahrenheit) and can reach into the high nineties and low hundreds, while winter lows are typically in the low twenties with extremes as low as the teens (See figure 2). The microclimates created by site factors tend to increase the temperature extremes. The steep topography of the environment allows for pronounced cold air drain. This dense air tends to collect in the valleys and stream courses, especially in the winter, creating temperature inversions and significant temperature differences between the valley floor and the ridges. The valleys have lower temperatures in general, including more frost and higher occurances of unseasonable frost that results in a shortening of the growing season. This characteristic is important because, for the most part, it was the river terraces that were homesteaded and where agriculture was attempted.

As can be seen from this description of the climate

of the study area, although it is of the temperate Mediterranean type, the topographic setting of the area and resulting influence of site factors tends to exaggerate climatic extremes at some locations. To the settlers, perhaps the most significant effect of the resultant microclimates was the unseasonable frost due to cold air drain in the valleys.

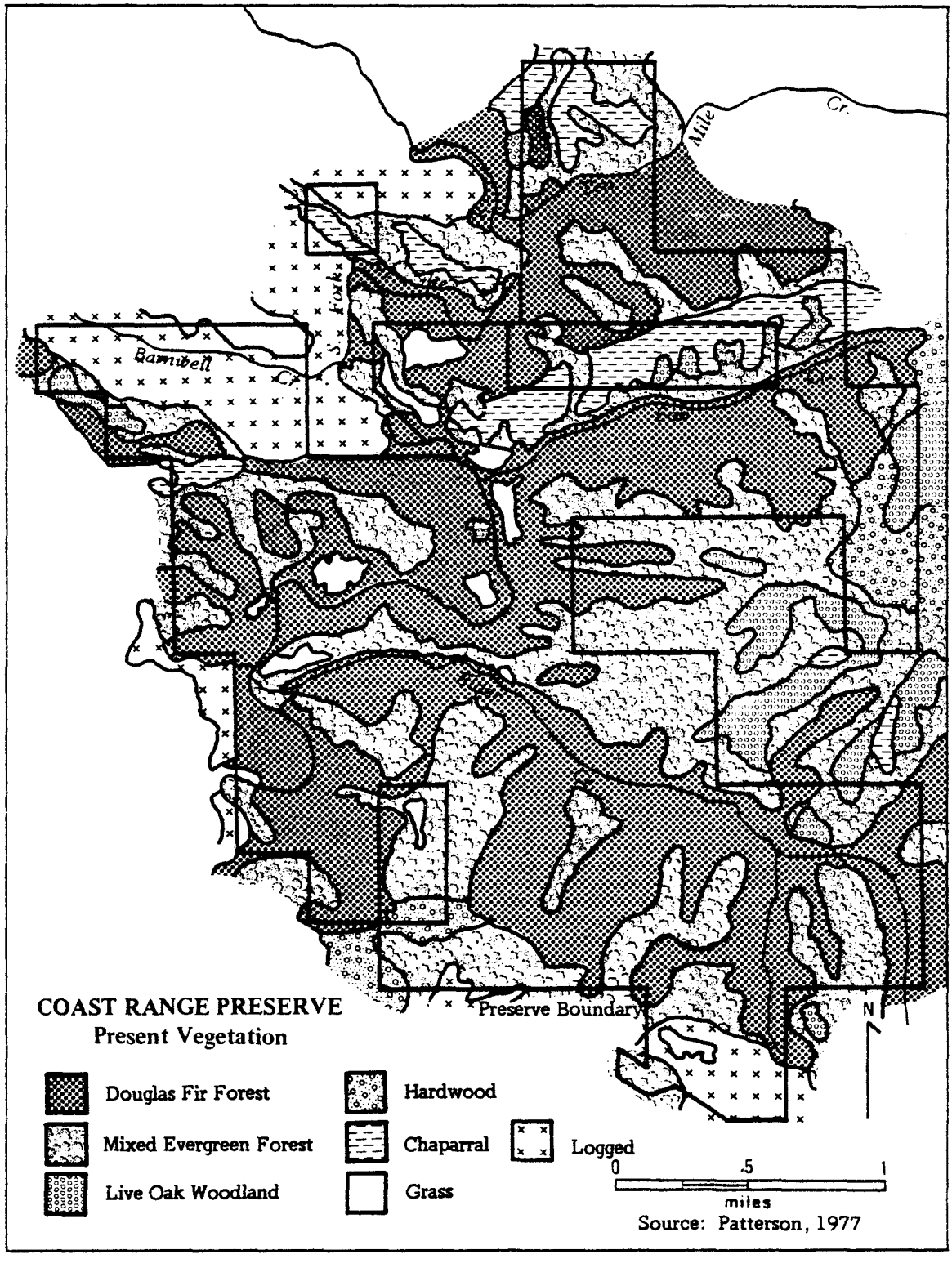
Vegetation

In the discussion of climate, it was emphasized that, in the Northern California Coast Range, the climate of a location is strongly influenced by site factors, particularly elevation and orientation. Resultant local climatic differences, or microclimates, may have significant effects on plant distribution. Coupled with the effects of microclimates, other factors such as variations in terrain and soils combine to provide great variety in the environments available for plant growth. Vegetation has responded accordingly by exhibiting great diversity both in species numbers and in the variety of plant associations found on the preserve, as shown by map 4.

The general vegetation type of the preserve has been described as "mixed evergreen forest" by Sawyer, Thornburgh, and Griffin:

> The term "mixed evergreen forest" describes a characteristic set of coastal California mountain communities...The closed stands and the broad-leaved, sclerophyllous nature of the dominants typify these forests, which may also contain a minor to significant conifer component...Characteristic dominants, at

MAP 4


Mile
Cr.
Barnhart
Cr.
S. Fork
COAST RANGE PRESERVE
Present Vegetation
Preserve Boundary
N
Douglas Fir Forest
Mixed Evergreen Forest
Live Oak Woodland
Hardwood
Chaparral
Grass
Logged
0
.5
1
miles
Source: Patterson, 1977

> least in some phases, are Arbutus menziesii, Lithocarpus densiflora,...Quercus chrysolepis, and Pseudotsuga menziesii.[16]

The vegetation of the preserve contains well developed Douglas fir forest (Pseudotsuga menziesii), tanoak (Lithocarpus densiflora), and madrone (Arbutus menziesii) forests as well as forests that are mixtures, exhibiting characteristics of each. Rather than considering these as separate forest types, Sawyer classes them as various stages of a single forest type whose apparent differences are the results of the dynamic, competitive interactions of the component species reacting to the history of disturbance.

> In the north coastal mountains, Pseudotsuga-hardwood forests presently form a complicated mosaic of early and late successional communities resulting from a long history of fire, grazing and logging...Competitive interactions among these species are the major factors determining existing forest patterns.[17]

Consequently, the vegetational mosaic found by the early settlers was the result of disturbance history, possibly influenced by the previous Indian land uses, and the mosaic seen today is the product of a disturbance history influenced by both the Indian inhabitants and the settlers.

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[16]Sawyer, Thornburgh, and Griffin, "Mixed Evergreen Forest," in Terrestrial Vegetation of California, eds. M. Barbour and J. Major (New York: Wiley, 1977), p. 360.

[17]Ibid., p. 369.

A recent study of the preserve's vegetation by C. Patterson[18] subdivided this "mixed evergreen forest" into its component factors for further description. For the purposes of establishing the setting of the preserve's land-use history, Patterson's subdivisions will be used and only the more relevant plant associations considered here. They are: Douglas fir forest, redwood grove, mixed evergreen (broadleaf) forest, oak woodland, chaparral, and meadow. To the land use history of the preserve, each of these communities had significant effects on the preserve's inhabitants.

Douglas fir forest. Douglas fir forest, the ultimate climax forest for this terrain and climate,[19] dominates approximately one half of the preserve's environment. It is found growing with the redwoods on the better watered flats by streams and in canyon bottoms and extends upslope, becoming more dominant in well developed stands as one moves higher. On its uphill margins it grades into tanoak and madrone forests with either species exerting dominance, depending on the dynamic interactions of the succession taking place. In addition to tanoak and madrone in the under-

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[18]Charlie Paterson, "A Vegetation Survey of the Northern California Coast Range Preserve," (unpublished report to The Nature Conservancy, 1977).

[19]Ibid., p. 35.

story of the Douglas fir forests, one also finds California hazel (Corylus cornuta), Oregon grape (Berberis nervosa), and the iris (Iris purdyi)as well as various herbaceous plants. These plants are by no means restricted to the Douglas fir forests; in fact, they are rather widespread throughout the mixed evergreen associations.

Douglas fir forest as the dominant vegetation type was important to the settlers primarily as firewood. It never was important as a building material because it required milling since it could not be split into usable products. Douglas fir came into its own, however, as a valuable timber tree in the 1940s and 1950s when large-scale logging reached this area. However, by this time much of the preserve area was in the hands of owners who would not allow their forests to be cut.

Redwood Grove. Most of the preserve's redwood areas occur on the river terraces and somewhat up the major drainages rising from these terraces. Several well-developed redwood groves usually mixed with Douglas fir can be found at the mouth of Skunk Creek, upstream from the upper Walker Meadow, on Barnwell Creek and across from Wilderness Lodge. Stebbins described these forests as "redwood border forests" and said,

> The mesic redwood associates found in coastal Mendocino County, such as deer fern (Blechnum spicant), Clintonia (Disporum smithii), and wild ginger (Asarum caudatum), are either absent or very rare. Even such redwood

> associates as huckleberry (Vaccunium ovatum), vanilla grass (Hierochloe occidentalis), and slink pod (Scoliopus bigelovii), are confined to the shadier, north facing slopes.
>
> On the other hand, the presence of such species as vanilla leaf (Aechlys triphylla), dogwood (Cornus nuttallii), Vancouveria hexandra, and pipsissewa (Chimaphila umbellata var. occidentalis) distinguishes these forests from the redwood and border forests found farther south in Marin and Santa Cruz counties.[20]

These redwood areas were extremely important to the early settlers as they provided prime construction materials, easily attainable through splitting the wood into such things as fence pickets, shakes and boards. Those homestead claims containing redwood were particularly desirable.

Mixed evergreen (broadleaf) forests. Beyond the Douglas fir forest, either higher in elevation or on more southerly slopes, are the mixed evergreen-broadleaf forests comprised primarily of madrone (Arbutus menziesii) and tanoak (Lithocarpus densiflora) in either mixed or nearly pure stands. As previously mentioned, Sawyer, Thornburgh and Griffin consider these areas as various stages of the mixed evergreen forest type whose different dominant species are determined by the disturbance history and the succession.[21] Either madrone or tanoak may be dominant with

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[20]G. L. Stebbins, "Preliminary List of the Vascular Plants Found on the Northern California Coast Range Preserve, Nature Conservancy," Ecological Studies Leaflet No. 14, ed. Ethel Durham (Washington, D.C.: The Nature Conservancy, 1968), p. 45.

[21]Sawyer, Thronburgh, Griffin, loc. cit.

Douglas fir usually assuming some aspect in the association either as insignificant seedlings or as aggressive, young competitors reaching into the canopy and competing with the established madrone and tanoak for light. The only thing that distinguishes these forests from the Douglas fir forest itself is that Douglas fir has not yet attained dominance, although ultimately it will.

This forest type may have been much less extensive at the time of the settlers, as early pictures reveal that many of the areas now so vegetated were then covered in chaparral type brush, the probable result of fire maintenance by the Indians and settlers (See chapters 3 through 5). Indeed, the trees themselves attest to a fire history through fire scars that are common in the base of trees and obvious "family groups" that sprouted from the roots of a single adult.

When considering the mixed evergreen (broadleaf) forests, several points relevant to this study are important to keep in mind. Tanoak was the preferred acorn of the Indians.[22] It also became a source of income for some settlers who peeled and sold its bark. Chinquapin (Castanopsis chrysophylla), a type of chestnut, and a minor component of

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[22]Martin A. Baumhoff, "Ecological Determinants of Aboriginal California Populations," University of California Pubs. in American Arcaeology and Ethnology, vol. 19, No. 2 (Berkeley and Los Angeles: University of California Press, 1963), p. 163.

these forests, was also an important food nut to the Indians. The patterns and degrees of these uses will be discussed in some detail in chapters 3 through 5.

Oak woodland. Patterson said of the oak woodland on the preserve, "The live oaks and deciduous oaks, when mixed with tanbark oak, madrone, and douglas fir, result in a variation of the mixed evergreen forest, but may occur as isolated pockets or even extensive, oak-dominated woodland."[23] In regards to the land-use history of the area, several types of oak woodland are particularly important. Black oak woodland (Quercus kelloggii) occurs in large, open, nearly pure stands on the eastern margins of the preserve on Black Oak Mountain and adjacent ridges. Almost certainly maintained by previous, repeated burning by the settlers and possibly Indians (See chapters 3 through 5), one wonders if these old well-established groves might actually be the result of early Indian fire management, especially since black oak acorns were second only to tanoak in local Indian acorn preference.[24] Today, these groves are receiving severe competition from invading Douglas fir and are showing signs of decline through fungus and disease and are not reproducing. Without fire these groves will most certainly disappear.

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[23] Patterson, op. cit., p. 39

[24] Baumhoff, loc, cit.

White oak woodland (Quercus garryana) is found almost exclusively on the more level terraces by streams. Less extensive than the black oak woodland, occurring primarily in small pockets, it is also composed of older trees forming open, pure stands. These groves appear to be less threatened by Douglas fir competition than the black oak woodland. White oak acorns were almost as important as black oak acorns in the Indian diet.[25]

Chaparral. There are two basic chaparral types on the preserve. One is a somewhat mesophytic chaparral occupying the lower elevations and wetter, more sheltered spots in the higher elevations, and is comprised primarily of several species of manzanita and ceonothus along with shruby live oaks (Quercus wizlinzeneii, and Q. chrysolepis). The other, a xerophytic type of chararral, found in the higher elevations and drier more exposed spots, is composed primarily of chemise (Adenostoma fasciculatum) with some ceonothus and shruby live oaks.

Chaparral areas are extensive on the preserve, comprising the dominant cover on the south slopes of higher elevations. Some of the mesophytic chaparral areas appear to be successional in nature, going into Douglas fir or mixed evergreen broadleaf on the downhill boundaries. W. W. Cooper offers an explanation of such areas, "...the

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[25]Baumhoff, loc. cit.

climax chaparral has transgressed its normal climatic limits along its mesophytic boarder through its invasion of forest, fire being the causative agent."[26] As is the case with the broadleaf evergreen forests, fire history and man's past land-use may be important to the chaparral distributions.

Early photographs reveal that chaparral was probably once much more extensive then than now and occupied many of the areas now in mixed evergreen and broadleaf forest. Such extensive chaparral, providing excellent wildlife and game habitat was extremely important to both the Indians and settlers, and could only be maintained through repeated burning.

Meadowland. Eight meadows are found along the river terraces of the South Fork of the Eel River. These were the areas homesteaded and farmed by the early settlers and now they reflect their disturbance by being covered in primarily non-native grasses and weedy species typical of such disturbed areas.

What the condition of these areas was before settlement is unclear. Some of the meadow areas were apparently covered with brush, primarily whitethorn (Ceanothus incanus) and manzanita, Douglas fir, oaks and

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[26]W. S. Cooper, The Broad-Sclerophyll Vegetation of California (Washington: Carnegie Institute, 1922), p. 82.

other hardwoods. These areas were then cleared by a "grubbing bee"[27] where the families got together and worked at clearing.

Some of the settlers said they moved into "natural openings." Others said they moved into the areas once inhabited by the Indians. Whether the Indians cleared areas or just what the character of these "natural openings" was is unclear. The author has noticed, however, that all of these meadows have spring lines or marshy areas. At Wilderness Lodge there is even evidence that this water was purposely channeled off the field. Perhaps the "natural openings" originated as small wet areas where the forest could not exist and were thus vegetated by rushes, sedges and moisture-tolerant shrubs. If this was the case, then these areas would appear as "natural openings" which the Indians and settlers might have inhabited and enlarged. An adequate explanation for these meadow areas is yet to be given.

Summary. From the air, the pattern of the vegetation of the preserve takes on a patchy character. Even the dominance of chaparral on south-facing slopes is broken by broadleaf trees or Douglas fir in wetter areas or draws. It

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[27]Robert F. Ettner, "History of the Northern California Coast Range Preserve, 1884-1931" (unpublished paper, 1965), p. 4.

is apparent form this aerial vista that elevation and orientation is significant to the vegetation distributions, perhaps due to the microclimates created. But besides microclimate, the pattern of vegetation and the successional character of many of the vegetation zones indicates that probably some past disturbance, perhaps fire, was responsible for some of the present patterns. Man's role in this "disturbance" will be discussed in chapters 3 through 5.

Fauna

The various vegetation associations of the study area provide specific habitats and support a fauna typical of these habitats in what Yocum and Dasmann call the Pacific Coastal Wildlife Region.[28] Additionally, many species now considered either rare or unusual in their former range are relatively numerous in the preserve because of its large size and relatively pristine condition. River otter, bear and mountain lion are examples of such species

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[28]Yocum and Dasman, The Pacific Coastal Wildlife Region (Healdsburg, California: Naturegraph Co., 1965), p. 3, "Wildlife regions,...are distinctive natural geographic areas of similar climate and topography, which tend to have characteristic animals and vegetation within their boundaries. Overlapping between regions makes it impossible to draw a rigid line separating them. Some species of plants and animals appear in several regions.

"The Coastal Wildlife Region, as defined in this book, extends from Monterey, California, north to the southern part of British Columbia."

to exist to allow for population by roving animals. There are several local stories of elk in the preserve, including one that claims that the last major elk kill occurred in Elder Creek. Several stories also claim that elk horns have been found in the area; for example, George Lovejoy reportedly found an old horn in Barnwell Creek. Even the ridge on the western boundary of the preserve is named Elkhorn Ridge. A probable reason for elk extermination in this area was that they competed with domestic livestock for grazing and browse and were damaging to crops. They were readily visible because of their tendency to group in and around meadows; consequently, they could be easily and systematically hunted and killed. The last elk kill supposedly occurred about 1930,[31] when the last known band of elk was rounded up in a box canyon and shot down. Some locals say the box canyon is in the Elder Creek Watershed.[32]

Some other species of mammals did not suffer extinction but did suffer reduction of numbers at the hands of settlers. Fur bearers, most notably the river otter and mink, were heavily trapped because of the high value of their pelts. A river otter pelt could bring in up to $15.00

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[31]Kate Mayo, "Pioneering in the Shadow of Cahto Mountain," First Centennial Edition: 1874-1974, pp. 130-131.

[32]Walt Barnes, area resident. Personal interview, 1975.

and a mink, $5.00, comparatively high prices considering that the going rate of the time for room and board was $1.00 a day.[33] Other animals were hunted and killed as "varmints" since they were believed to threaten domestic stock and agriculture. Such animals were fox, racoon, weasels, skunks, bobcat, and mountain lion. These pelts were also sold. Perhaps even hawks, eagles and other large birds of prey were also considered as threats and killed when the opportunity arose. For example, preserve neighbors today claim to have shot goshawks in the past, because the hawk would prey on domestic fowl.[34]

Hunting for food also quite possibly affected mammal numbers. Deer were an important meat source for all the settlers and, during the Horseshoe Bend and Wilderness Lodge resort era, hunters would take numerous animals. Surprisingly, bear was also an important meat source and, between Wilderness Lodge and Horseshoe Bend alone, six to eight bear a year would be killed (smoked and used much like pork).[35] Even band tailed pigeons, which roost in the preserve in great numbers during the winter, were an

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[33]Hattie (Lovejoy) Clarke, daughter of homesteaders George and Annie Lovejoy. Personal interview, August 1978. The Lovejoys at Horseshoe Bend would typically trap 1 dozen otter and 1-1/2 dozen mink a year.

[34]Betty Barnes, area resident. Personal communication.

[35]Hattie (Lovejoy) Clarke, loc. cit.

important meat source for some settlers.[36]

What other native mammals or species of other classes that were once here and eradicated or severely affected by past human occupance is unknown. Some animals like the elk and grizzly bear were purposely hunted out. Other animals may have been displaced by man's settlement and use of the land, through changes in habitat and competition with domestic species. Some animals were favored, perhaps at the expense of other species, by the habitats created by man's disturbance. Such a favored animal is the Beechy ground squirrel that thrives in disturbed meadow areas. Today they are abundant at Mr. Angelo's and Wilderness Lodge. Porcupine were unknown to the settlers, but after large scale logging in surrounding lands began, porcupines started being seen. Heath Angelo saw his first porcupine sometime after 1940.[37] All of these changes are difficult to assess now because of a lack of information describing conditions prior to human settlement.

Extinction or reduction of numbers may be difficult to detect but man's occupance also had the opposite effect of introducing new species. A variety of feral animals resulted from man's occupance of this area. Examples of

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[36]Danny Zager, son of homesteaders Frank and Eva Zager. Personal interview, January 1978.

[37]Heath Angelo and Betty Barnes, area residents. Personal communication.

such feral animals are goats, cattle and hogs. But of all these introductions only the feral hogs remain in this area today. They are extremely successful competitors and have naturalized well. Even hunting around the preserve has not affected their numbers. The introduction of such a successful competitive species into an ecosystem that has no natural predators, is bound to have its effects. Food once available to native species is being consumed by the feral hogs and, perhaps even more serious, some species may be suffering extreme predation by hogs. Herpetologists visiting the preserve have suggested that the reptiles and amphibians may be significantly affected by hog predation. If this is the case, species may have been lost that we do not even know of.

Another introduction, silver-tip fox, resulted when, during the 1930's to the 1950's, relatively large-scale fox farming for pelts was attempted by several settlers as a method of raising money. Although rarely seen, they are still thought to survive here.

In summary, with but a few exceptions such as the elk and grizzly bear, the fauna of the area might appear to be in a fairly natural condition. But since it is only the larger mammals that have been observed over time, and because of the changes brought about by man (the impact of his land use, and competition with and predation by feral animals has not been assessed), historical changes in the fauna

are poorly known.

CHAPTER III

ABORIGINAL INHABITANTS

The preserve area was inhabited by Native Americans for at least 5,000 years.[1] This chapter focuses primarily on the most recent Indian inhabitants, because land use during their years of occupancy was the most significant in shaping the environment found by early white settlers. However, it must be remembered that land use of even earlier occupants may well have shaped the environment found by the more recent Indian group.

Of the earlier peoples, very little is known. Since technological specialization enabling Indians to take advantage of a specific food resource, like fish or acorns, was a later development, Baumhoff[2] suggests that these earlier inhabitants were probably generalists in foraging and that their "subsistence practices were directed equally toward all available aspects of the environment." As generalists,

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[1]This date is given by Roop and Flynn of the Archaeological Resource Service as the age of a projectile point found on the preserve by Mr. Heath Angelo.

[2]Martin A. Baumhoff, "Ecological Determinants of Aboriginal California Populations," University of California Publications in American Archaeology and Ethnology, vol. 19, no. 2 (May 1963), p. 190.

foraging activities would be opportunistic, taking advantage of resources when they were available and exploiting all potential food resources, and thus probably not seriously impacting any in particular.

The most significant impact such a group might have had would be if they had used fire as a tool to manipulate their environment. But there is no direct evidence about fire use among such early peoples. In later sections of this chapter, the difficulties of proving fire uses of even more recent groups will be discussed. Making such a determination for earlier groups will depend upon improving the various means of investigating the physical remains of these earlier peoples.

At some point, the earlier culture group was replaced by the Kato Indians, the southernmost group of Athabascan-speaking peoples in Northern California. Although the Kato had Athabascan neighbors in the Wailaki and Sinkyone to their north, as shown in map 5, they were surrounded on three sides by Yukian peoples and have long been confused with these and other southern Indian tribes. An 1880 history of Mendocino County[3] speaks of the "Cah-to Pomo" and comments on the curious fact that they could not converse with the Sherwood Valley Indians just ten miles to

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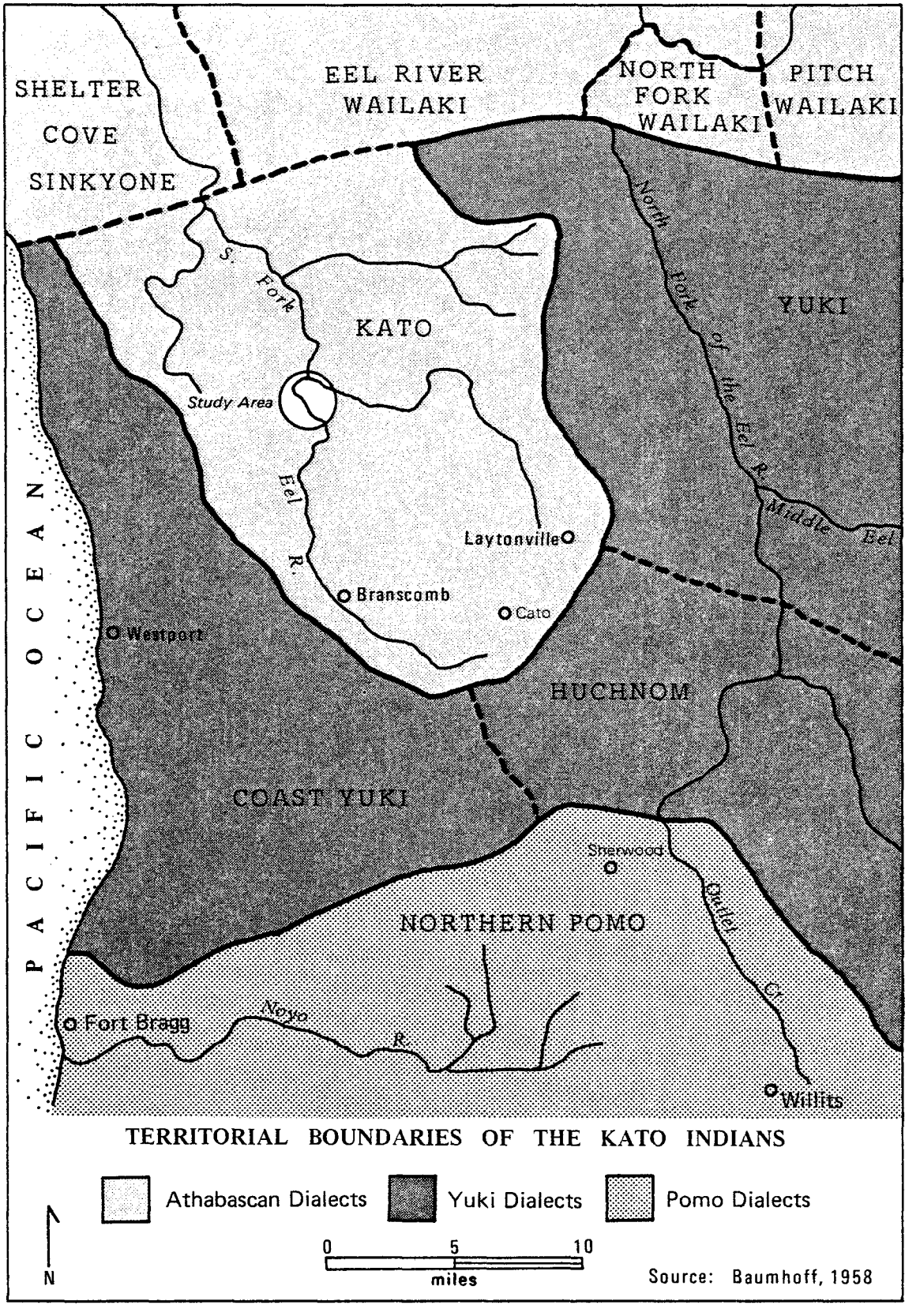
[3]Lyman E. Palmer, History of Mendocino County, California (San Francisco: Alley Bowen and Co., 1880).

MAP 5


SHELTER COVE SINKYONE
EEL RIVER WAILAKI
NORTH FORK WAILAKI
PITCH WAILAKI
YUKI
KATO
S. Fork
Study Area
Eel R.
North Fork of the Eel R.
Middle Eel
Laytonville
Branscomb
Cato
Westport
HUCHNOM
COAST YUKI
PACIFIC OCEAN
Sherwood
NORTHERN POMO
Outlet Cr.
Noyo R.
Fort Bragg
Willits
TERRITORIAL BOUNDARIES OF THE KATO INDIANS
Athabascan Dialects
Yuki Dialects
Pomo Dialects
N
0 5 10
miles
Source: Baumhoff, 1958

the south. It was not until 1903 that Pliny Earl Goddard,[4] studying linguistic groups among northern California Indians, realized that the Kato did not speak a Hokan language like the Pomo but spoke an Athabascan dialect similar to those of their northern neighbors, the Wailaki and Sinkyone.

Although Athabascan in origin, the Kato Indians picked up many of the food habits and cultural characteristics of their southern neighbors. Baumhoff[5] suggests that the Kato may have once relied on fish as their primary source of food as is assumed to be the case with other Athabascan groups in the lower Klamath province. But, by the opening of the historic period, they had developed more of a generalist food strategy perhaps because their territory did not include enough good fishing streams to provide for a primarily fish-dependent culture. The Kato, then, utilized the same food resources as their Yuki and Pomo neighbors, rather than their Athabascan kin, and since they occupied a transitional area between the Athabascans and the southern groups, their cultural characteristics were also a mixture of both.[6]

Early ethnographic studies of the southern Athabas-

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[4]Pliny Earl Goddard, "Kato Pomo not Pomo," American Anthropologist, vol. 5 (1903), pp. 375-376.

[5]Baumhoff, op. cit., p.222.

[6]James E. Myers, "Cahto," Handbook of North American Indians, vol. 8, California (Washington: Smithsonian Institute, 1978, Robert F. Heizer ed.), p. 222.

cans are spotty and incomplete. The remoteness of the Kato territory and the confusion of their cultural and linguistic associations may have been responsible for the paucity of ethnographic information concerning them in particular. Goddard did conduct early studies on the Kato and other Athabascan groups[7] but since he was primarily a linguist, he did not gather detailed ethnographic information. Kroeber[8] did some work on the Kato and Baumhoff[9] published a monograph on Athabascan groups based upon the field notes of C. Hart Merriam. But even Baumhoff's description of the general life style of Athabascan peoples, which is one of the most detailed available in the literature, is based on Essene's[10] description of the Lassik peoples and not on information gathered dealing with the particular groups he considered. Regardless of this shortcoming, Baumhoff believed that this description is generally accurate for most Athabascan peoples.

As a result of the limited and general nature of available information, descriptions of the Kato Indians and

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[7]Goddard, loc. cit.

[8]A. L. Kroeber, Handbook of the Indians of California (Washington: Government Printing Office, 1925).

[9]Martin A. Baumhoff, "California Athabascan Groups," University of California Anthropological Records, vol. 10, no. 5 (1958).

[10]Frank Essene, "Culture Element Distributions: XXI Round Valley," University of California Anthropological Records, vol. 8 (1942) pp. 1-97.

their livelihood included in this thesis are restricted to basic discussions and rely primarily on Baumhoff's accounts.

Population and Settlement

The major known Kato villages are situated in the valleys now occupied by Laytonville (Long Valley), Branscomb (Jackson Valley) and the valley where the 1880 town of Cahto was located, approximately three miles southeast of Laytonville (See map 5). These lowland locations were the most accessible to early travelers due to established trails and thus were the first discovered. However, the rugged hill territory also visited by the Kato could well have hidden encampments or villages that were never recorded.

Estimates of the Kato population size are quite varied, ranging from 500 to 1523 individuals depending on the information upon which the estimates were based. Kroeber,[11] evaluating the rugged nature of the Kato habitat, stated that 1000 was about the maximum and that 500 was "probably nearer the mark."[12] Cook,[13] using the value of

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[11]Kroeber, op. cit., p. 155.

[12]Baumhoff (1963, 160) says that Kroeber's estimates are "based on quite unacceptable evidence . . . making it impossible to judge their reliability." I agree with Baumhoff's criticism because of the offhand manner by which Kroeber's Kato population estimate was derived.

[13]S. F. Cook, "The Aboriginal Population of the North Coast of California," University of California Anthro-

40 persons per village for the 20 villages listed by Merriam,[14] and adding 300 individuals for unaccounted-for territory, gave an estimate of 1100. Baumhoff estimating population from available fishing miles within the territory, reached an estimate of 1523.[15]

Adding to the difficulty of making estimates of Kato population is the incomplete information concerning village numbers and locations. Nineteen villages are known that have been located.[16] Curtis[17] mentions six more that ethnographers have been unable to locate. Goddard's notes[18] likewise cite two other non-relocatable villages. But perhaps an even more intriguing point is that, in Goddard's field notes, these two villages are listed as numbers 51 and 52. Apparently he recorded 50 other villages for which all information has been lost. Information on these other villages could considerably change population estimates, especially those based on Cook's technique.

Although none of the presently-recorded village

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pology Records, vol. 16 (1956), pp. 81-130, as taken from a study of the Wilkut.

[14]C. Hart Merriam, "The Indian Population of California," American Anthropologist, vol. 7 (1905), pp. 594-606.

[15]Baumhoff, 1958, op. cit., p. 223.

[16]Baumhoff, op. cit., p. 166.

[17]E. S. Curtis, The North American Indian (Massachusetts: Frederick W. Hodge, 1924), vol. 13, p- 184.

[18]Baumhoff, op. cit., p. 167.

sites are located within the preserve, through the years numerous Indian artifacts have been found that have enabled preserve staff to locate seven new sites (See map 6). These artifacts were found on the surface and no follow-up survey has been conducted. Without such a survey, it is difficult to tell what the nature of these sites is. Were they just periodically-visited hunting camps or more permanently-occupied villages? Were these sites occupied year-round, or only during certain seasons such as the summer? Resolving these questions and surveying the entire Kato area to discover similar unrecorded sites could also significantly alter previous estimates of Kato population size.

Regardless of the scanty nature of the present information, some preliminary assessment of the preserve's aboriginal sites can be made from the artifacts found thus far. The only sites with artifacts indicative of women's activities are the sites at Wilderness Lodge and the Elder Homestead. In both of these areas, grinding implements such as metates (grinding slabs), mortars, and pestles have been found. The recovery of these kinds of artifacts suggests the presence of specialized activity areas within the preserve where major subsistance tasks such as vegetable food processing took place. Artifacts from the other sites are those related to men's activities, such as hunting and butchering of animals, and include flake scrapers, projectile points, and chert waste flakes from tool manufacture.

Such artifacts often indicate the presence of a hunting camp, but it is possible that future study in these areas might also turn up evidence of more intensive habitation and consequently affect population estimates for the Kato.

Although the present information is inadequate to accurately describe the Kato settlement and population in the preserve area, an estimate of inhabitants can be made by adapting one of Baumhoff's techniques on food resources. Baumhoff believed that food was the limiting factor for population size and that populations were maintained in a Malthusian equilibrium.[19] He offered one method of making population estimates based on the number of miles of prime salmon and steelhead stream running through a territory. From known population reports, and measured fishing miles, he developed a regression line that fitted those known populations.[20] Applying his regression line to approximately four miles of stream found within the preserve, a population size of 40 Indians is predicted.[21] Of particular significance here is that these figures all refer to a year-round population, a possibility not previously considered for the preserve.

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[19]Baumhoff, 1963, loc. cit.

[20]Baumhoff, 1958, loc. cit.

[21]In an attempt to refine methods for predicting Indian populations, Baumhoff later developed another technique that took into account the productivity of the terri-

This figure should be regarded with some caution, however, due to several problems in its application to Indians on the preserve. First, the sample of populations on which Baumhoff based his regression line was quite small, with only six data points. It is questionable whether such a small sample can establish a trend in the relationship that the model assumes. Second, these data points appear to reflect two distinct populations, those with a relatively high number of people per fishing mile, like the Wailaki and Pitch Wailaki with 72 and 73.6 people per mile respectively, as opposed to the Matole, Lonlangkik Sinkyone, Hupa and Wilkut with a noticeable lower number of people per mile (31.2, 33, 37.8, and 37, respectively). If the supposition of this model is true, that number of fishing miles is linearly related to the population size, then perhaps these actual figures reflect the productivity of the fishing streams inhabited by each group; thus the

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tory in terms of fish, game and acorn resources (Baumhoff, 1963). This technique requires the determination of the areal extent of vegetation associations such as oak woodland, chaparral and forest, to be used in the calculations. All investigations into the preserve's vegetation history indicate that rapid, radical changes in vegetation composition are occuring (See chapter 2). This is so extensive that a vegetation map today would not reflect the vegetation pattern during the Indian period. As a result of this problem, the complexity of trying to estimate former vegetation cover, and the inherent possibilities for significant error, this author did not feel that adapting this technique to the preserve area was warranted.

more productive streams could support a population of greater density, and it is true that the territory of both Wailaki groups does possess prime sections of the Eel River where salmon and steelhead fishing is at its best. Thus, using data from these two seemingly different populations reduces the applicability of the regression line to either type of population.

A third problem with utilizing Baumhoff's regression line for predicting Indians in the preserve is that the Y-value (population size) calculated for four miles of fishing stream is well below any of the data points used to construct the line, and in fact, is not far above the region where negative Indians would be to be predicted! Thus, extrapolations made to this range of values are particularly suspect.

A fourth problem with applying Baumhoff's regression line is that, in his discussion, he offers no theoretical justification for using a linear regression model, as opposed to some other form of model. Thus the reader is unable to evaluate the appropriateness of the model for this application.

Considering the problems with the application of Baumhoff's regression line, another way to approach the prediction of Indian population in the preserve area is to simply take the mean value of the people per fishing mile figures that Baumhoff used to estimate population in the

preserve area. If all the figures are used, a mean of 47.4 people per mile is reached; thus, the preserve's four fishable miles could have supported 190 Indians. Considering the previously stated criticism that Baumhoff's figures appear to represent two different populations, this estimate may be too high, since the fishing territory of the Kato more closely resembles that of those tribes with fewer people per mile. The mean of these lower figures is 34.75 Indians per mile; applying that, the preserve's four miles could have consequently supported 140 Indians.

Regardless of the shortcomings of any of these prediction techniques, they do provide a possible range for the preserve's previous Indian population, from a low of 40 Indians, as predicted from Baumhoff's regression line, to a high of 190 Indians, as calculated from the mean of Indians per fishing mile from the samples Baumhoff used and then applied to the four miles of fishing stream within the preserve.

Since the preserve is located outside of the major known Indian village areas near Laytonville and Cahto (See map 5), the preserve area has consequently been considered as a seasonal hunting and gathering grounds. Because these estimates are based on the assumption that the preserve area actually supported a year-round resident population, further archaeological work on the preserve will be needed to provide the additional information

necessary to test, validate, and verify this assumption.

Location of Preserve Indian Sites

Judging from artifacts found, the Indians, like the early settlers, chose the river terraces as their preferred spots for habitation (See map 6).[22] These locations were particularly advantageous for the aborigines because of their proximity to river food sources such as fish. Two particular sites, one at the confluence of the Eel River and Elder Creek and the other at the confluence of the Eel and Ten Mile Creek, were particularly favorable because spawning salmon and steelhead go into both these relatively large tributaries.[23]

In addition to the fish resource, the river terraces were probably good sites for other native foods as well. The type of food resource available depended on the former vegetation cover. If the terraces had grassy openings, as they have now, seeds, and herbaceous and root foods could be obtained. If these areas were brushy, and the settlers apparently found some of them, berries, nuts and other plant foods, as well as an abundance of wildlife

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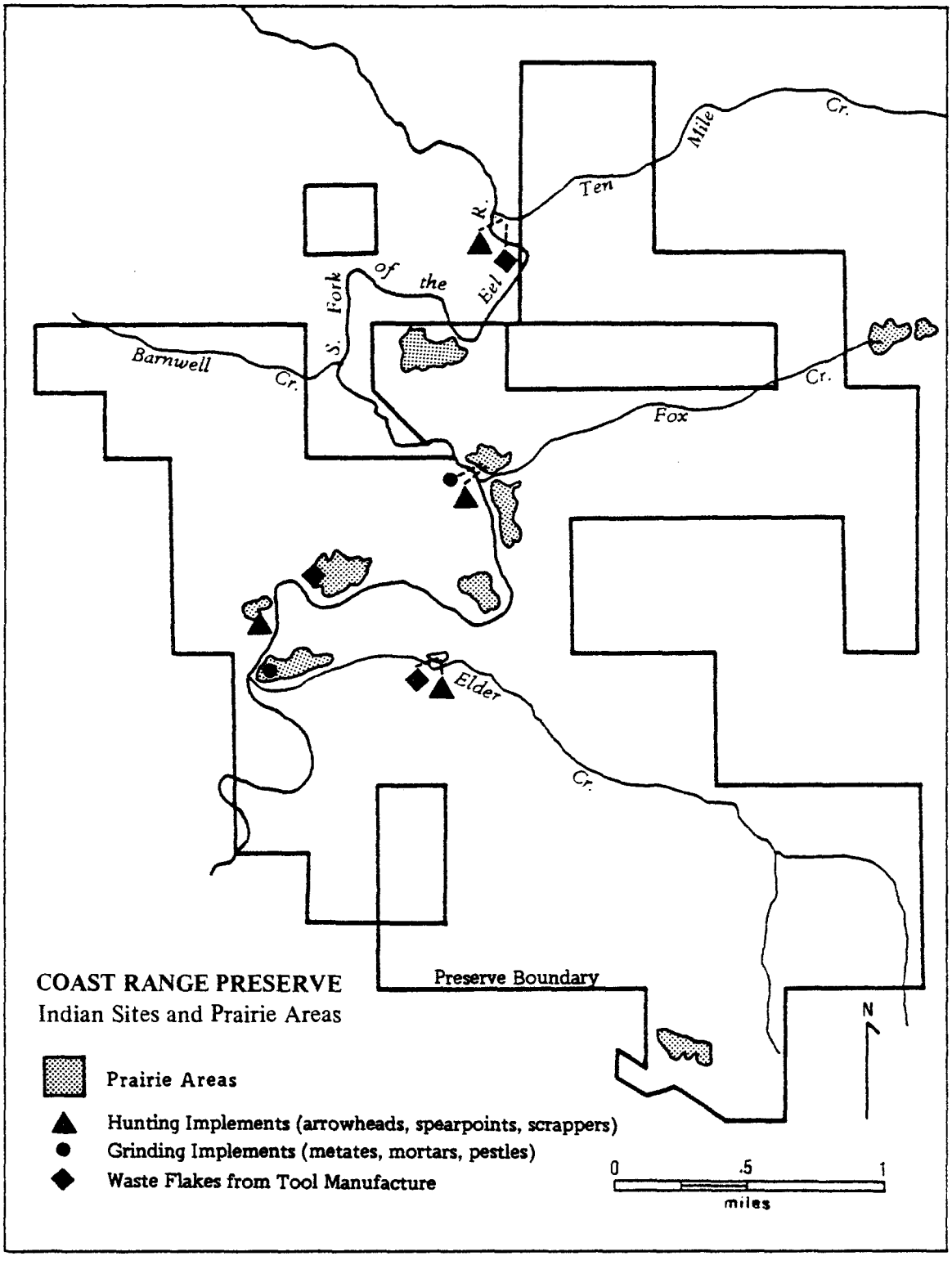
[22]The ridges have been relatively unexamined and may yet yield significant archaeological sites (Roop and Flynn, Archaeological Resource Service, personal communication). They also suggest that ridge sites may be older than valley sites because the Kato apparently preferred the valleys but the earlier group might well have preferred the ridges for settlement as did other California groups.

[23]Several times I have observed the pool below the falls, approximately one mile up Elder Creek, full of steelhead in early April.

MAP 6



COAST RANGE PRESERVE
Indian Sites and Prairie Areas

Prairie Areas

▲ Hunting Implements (arrowheads, spearpoints, scrappers)

● Grinding Implements (metates, mortars, pestles)

◆ Waste Flakes from Tool Manufacture

could be obtained.[24] Whatever the previous vegetation of these areas, whether naturally open or open through native manipulation, they most certainly supported some native foods because it is doubtful that well-developed forest (a habitat of low food availability for the Indians) existed on these spots, at least during the last several hundred years. Thus, these areas were probably good locations for the hunting activities of the men and the gathering activities of the women.

On the preserve today, another important food resource is also near the river terraces, the well-developed tanoak groves that exist on the upper slopes within one or two miles of the terraces. It is very probable that such a food resource was also available to the aboriginal population, adding yet another reason for camps or settlement in the preserve area. Perhaps these groves were even tended and pruned with fire as were the tanoak groves of other Athabascan peoples,[25] thus yielding an even more abundant food supply.

It is obvious from the artifacts found on the preserve that Indians inhabited this area at least part of the year. When the available food resources of the area

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[24]Baumhoff (1963, 176) classified chaparral, grassland and oak woodland as primary (most productive) game land for Indian food resources.

[25]Ray Raphael, An Everyday History of Somewhere, (New York: Alfred A. Knoff, 1974), p. 20.

are considered it is easy to see why the preserve was used. But, to understand Kato land use, we must consider the general life style of the Kato and the particular foods and materials they used.

General Life Style

The lives of the Kato Indians revolved around the availability of their basic food sources, fish, meat (game) and acorns (See appendix B). Since these foods are not equally available throughout the year, an annual cycle of subsistence developed that included alternating periods of gathering when food was available and storage for periods of deficiency.

Winter was the period of low food availability. Foods like seeds, nuts, acorns and herbaceous vegetation were not available and this was the period between the fall salmon and steelhead runs and the spring salmon runs.[26]

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[26]According to Department of Water Resources, Bulletin 92, Appendix C. (Feb. 1965) the South Fork of the Eel River has only fall runs of king salmon and steelhead. Silver salmon may have spring runs in this stream. Winter fish availability may have been different in this part of the South Fork of the Eel than for other Athabascan groups living along the primary reaches of the stream. The fish probably reached this area somewhat later and may have been available during the winter. Locally, salmon are observed during the months of December and January and I have seen spawning steelhead in the first two weeks of April each of the last three years (1974-77). Determination of actual fish availability on this part of the South Fork of the Eel would contribute important information to the knowledge of Indian food cycles.

Stored foods that had been obtained during more plentiful seasons were the mainstay of the Indian diet during the winter months. How successful the Indians were at gathering and storing foods "apparently exerted a controlling influence on the size of the population, since, in bad years people starved."[27]

In the early spring, the salmon runs began and food gathering activities started up. Herbaceous vegetation became available and was gathered and eaten as fresh greens, perhaps the first eaten in months. As herb gathering and hunting picked up in the later spring, the Kato left their permanent villages by the salmon streams in small groups of probably a few families and scattered into the hills for the summer to continue their activities while living in summer hunting and gathering camps. Men hunted deer, squirrels, and other animals while the women gathered clover seeds, roots, and nuts.

This was the most plentiful time of year and the direction and duration of the summer expeditions depended upon what each group found as they went along. Sometimes, much time would be spent at several good sites where at other times, more sites would be visited, each for a shorter period. Sites may have been visited each year or perhaps only visited every few years, all dependent upon what

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[27]Baumhoff, 1958, loc. cit.

food resources were found.

After the fall collection of acorns was complete, the Indians returned to their winter villages by the salmon streams. Fishing commenced with the fall spawning runs; fish and game meat was smoked and acorns were stored for the lean period to come.

The Kato and Fire

A question frequently asked regarding California Indians is to what extent they burnt the countryside. This much disputed question is difficult to resolve if, as has been the case in the past, one depends on scanty, often contradictory, ethnographic information. But, in 1973, a slightly different approach to the problem was taken by Henry T. Lewis in his Patterns of Indian Burning in California: Ecology and Ethnohistory.[28] Instead of depending on ethnographic information, Lewis studied available ecological data on California vegetational zones in terms of (1) how these zones respond to fire and what vegetational or other landscape features would result from burning, (2) where such features now exist, and (3) how these areas compare with those where the aboriginal burning practices are documented by available ethnographic information,

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[28]Henry T. Lewis, Patterns of Indian Burning in California: Ecology and Ethnohistory (California: Ballena Press, 1973).

informants' accounts and tree ring records. From the results of his comparisons, Lewis postulated that aboriginal burning in California may have been quite widespread.

As revealing as Lewis' findings were, they have limited direct application when considering a specific Indian group. Lewis' information was somewhat general as it was compiled from diverse sources and considered Indians throughout California. Such information was adequate for the general statement that, within California, aboriginal burning was widespread, but it was not sufficient to speak for the practices of specific Indian groups other than those mentioned by Lewis or Lewis' sources. One might postulate that neighboring Indian groups might have influenced each other and shared some of their fire technology, but without supporting data one cannot assume that they did; thus, without specific evidence concerning a particular group, findings of a general study have limited direct application. For the Kato, no such evidence exists.

But more important than the data themselves, Lewis' new approach opened the door to investigating fire practices among Indian groups, like the Kato, for which adequate ethnographic information was not available. Thus, insight into possible Kato uses of fire can be gained by asking and answering questions similar to those of Lewis' study: (1) what evidence in the preserve landscape today might lead one to suspect that fire was used, (2) why would

Indians in this area use fire and, (3) how does the preserve landscape today compare with landscapes that Lewis described that are the results of aboriginal burning?

Why suspect fire? There are large areas of the preserve today that are undergoing rapid changes in vegetation composition, trending primarily from grassy or shruby species towards forest species. These changes might well have been initiated by some past disturbance of the former vegetation cover, that was probably predominantly mixed evergreen forest since this is what is now becoming established in these areas today. The meadow areas themselves are either the result of site factors that have not yet been discovered or disturbances that altered whatever their former cover had been. Also, some of the young forests are underlain by the dead branches of manzanita and whitehorn that have lost in the competition for light. In these areas one might think that it was the activities of the early settlers that had altered the former cover through perhaps logging, farming, grazing or burning. But the old timers describe successionary vegetation to be present when they arrived.

One such area is the slope of young Douglas fir to the northwest of Sprague Meadow (picture). Mark Walker[29]

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[29]Mark Walker, son of homesteader Bill Walker and resident of the area. Personal Communication.

said that the slope was covered with ten foot-high manzanita and white horn brush when he lived there in 1906. Another observer in the 1940's,[30] described a stage when the young fir were just beginning to over top the chaparral. Today, a young Douglas fir grove stands above the dead branches of manzanita lying on the forest floor.

Numerous such areas on the preserve indicate that disturbance of large areas was occurring before settlers arrived. Was it by natural fires? Lewis would say not, suggesting that natural fires would leave a different pattern:

> Large scale burning would have reduced the complex of ecotones and, consequently the total amount of plant and animal production. The natural pattern of fires, because of their relative infrequency and the greater intervening build up of fuels, would select for much larger and older stands of fire climax succession. The very "spottiness" and much higher frequency of very localized Indian burning seem to have affected a much more complex overall ecosystemic pattern that would have been the case with only natural fires.[31]

Considering this description, the patchy complex of successional features on the preserve today suggests localized burning rather than large-scale natural fires and since it predates the settlers, we must assume the burning was done by the Indians.

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[30]Waldo Cook, summer visitor. Personal Communication.

[31]Lewis, op. cit., p. 84.

Why would the Indians burn? There are a number of reasons typically used to explain Indian burning. Perhaps the most common is that "they liked to set fires." Another is that they did not like traveling through the forest or brush so they burned to provide open areas for passage. As Gould said, "Burning occurred throughout the redwood belt . . . Repeated burning . . . made movement through this area easier."[32] But there are also other, specific and practical reasons why Indians burned.

Obtaining food was a prime reason. The Indians thrived in ecotonal[33] situations and Lewis stated that, "In almost every case aboriginal subsistence involved hunting and gathering in two or more vegetational belts."[34] An ecotonal situation increases access to different vegetational belts and the diversity of the ecotone itself provides many foods. Here thrive the major nut and berry producing plants as well as an abundance of wildlife that

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[32]Lewis, op. cit., p. 65.

[33]A zone of transition between two different vegetation communities. Because of the intermixing of species from both communities, ecotones are usually more diverse in plant and animal species than either adjacent community.

[34]Lewis, op. cit., p. 82.

is also dependent on ecotonal foods. By interrupting established vegetation patterns and initiating competition between colonizing species, burnings increase the diversity of these areas and, as Lewis said, "result in the local concentration and increase of resources."[35] Through burning the Indian could therefore create ecotones both within and between vegetational zones thus improving accessibility and maintaining the vegetation in varying conditions to suit his food needs.

Besides increasing the amount and diversity of his foodstuffs, and affecting the locations of his most productive food zone, the ecotone, burning provided the Indian with specific foods also. Indians used grass seed as pinole, a meal or flour made from parched seeds, often eaten dry and raw. But many grassy areas in California would probably revert to brush without continued fire maintenance. Apparently some Indians knew this and developed grassy openings, through burning, to obtain seed. These prairie areas were the prime areas of seed availability. Drucker, discussing the Northern Athabascans, noted that, "To assure the premanency of the natural openings and to maintain the quality of the oat crop, the dry

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[35]Lewis, op. cit., p. 84.

straw was burned off every few years."[36]

Loud, speaking of the area around the Humboldt Bay, described these "prairies" in more detail and expanded upon the resources they offered to the Indians:

> Within the forests, at all elevations from sea level to the top of the ridges, there were small open patches, known locally as "prairies," producing grass, ferns, and various small plants. These prairies are too numerous to mention in detail . . . Most of these patches if left to themselves would doubtless soon have produced forests, but the Indians were accustomed to burn them annually so as to gather various seeds, . . . These prairies were of incalculable value to the Indians, not alone for their vegetable products, but also for the game found upon them. A sharp contrast is drawn between the animal life in the forests and on these prairies, . . .[37]

Loud's description of the locations of the prairies are reminiscent of those on the preserve, but when coupled with the description of R. A. Gould, the resemblance is striking.

> The term, prairies, for the clearings in the redwood forest areas of N. California is really inappropriate, since most of these clearings are very small (the largest one I ever saw was only about 1/4-mile wide and about 3/4-mile long, and most are much smaller

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[36]Phillip Drucker, "The Tolowa and their Southwest Oregon Kin," University of California Publications in American Archaeology and Ethnology, vol. 36 (1937), p. 388.

[37]L. L. Loud, "Ethnogeography and Archaeology of the Wiyot Territory," University of California Publications in American Archaeology and Ethnology, vol. 14 (1918), pp. 228-229.

than that).[38]

Gould also suggests that these areas were not Indian living areas but primarily hunting and gathering areas.[39] Perhaps similar use was made of the meadows on the preserve. This agrees with the hunting and food processing artifacts that have been found thus far.

Besides using fire to maintain the prairies for their variety of food resources, fire was known to have been used in tending oak trees:

> . . . the trees (tanbark oaks) are better if they are scorched by fire each year. This kills disease and pests. Fire also leaves the ground underneath the trees bare and clean and it is easier to pick up the acorns.[40]

This quote refers to the practices of the Yurok, but the Sinkyone, Athabascan neighbors to the immediate north of the Kato, also used fire in tending acorn groves: "A good harvest depended on proper preparation by prior burning, so the Indians were in essence farming the forest."[41]

Many California Indian groups also used burning

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[38]Lewis, op. cit., p. 69.

[39]Ibid.

[40]S. M. Schenck and E. W. Gifford, "Karok Ethnobotany," University of California Anthropological Records, vol. 13 (1952), p. 282.

[41]Ray Raphael, An Everyday History of Somewhere (New York: Alfred A. Knoff, 1974), p. 20.

to cultivate useful plant fibers. The Sinkyone,[42] Karok and Yurok[43] tended hazel with fire to produce important basket making materials. O'Neal's informants commented that accidental fires seldom burn in the areas needed and thus do not do basket makers any good.[44] The Hupa not only used hazel for their baskets, they also used the leaves of bear grass, Xerophyllum tenax, to give clear white and the stems of maidenhair fern, Adiantum pedatum, for a glossy black in the decoration of their baskets. Both of these plants were tended by fire: "The ground is frequently burned over and the spot visited on the second or third year after."[45] Hazel, bear grass and maidenhair fern are all plants found in abundance on the preserve.

It is well known that burning brush land increases browse and correspondingly increases game, particularly deer. But besides this method of increasing game resources, the Indians also used fire in game drives. Goddard, in

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[42]Ibid., p. 21.

[43]Lila M. O'Neal, "Yurok-Karok Basket Weavers," University of California Publications in American Archaeology and Ethnography, vol. 32 (1932), p. 15.

[44]Ibid.

[45]Pliny Earl Goddard, "Life and Culture of the Hupa," University of California Publications in American Archaeology and Ethnology, vol. 1 (1903), pp. 39-40.

his research on the Hupa noted that, "Late in the summer the grass on Bald Hill and perhaps other places was fired and the fleeing deer taken in snares or killed with weapons while frantic from fear."[46] Driver was told by his Kato informant that his people used fire in game drives for both large and small animals and that fire was also used to smoke out rodents.[47]

In summary then, it appears that there were many good reasons for Indians to employ fire. Fire was an effective tool to provide routes of travel through otherwise inpenetrable country; it increased the ecotone regions and allowed the Indians to control the locations and the successionary stages of these areas for better, more convenient food and game production. In addition, it maintained prairies, it was used in tending tanoak orchards and useful plant fibers, and it was used to increase browse for animals and in game drives.

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[46]Goddard, op. cit., p. 22.

[47]H. E. Driver, "Culture Element Distributions: Northwest California," University of California Anthropology Records, vol. 1, no. 6 (1939), pp. 297-434.

How does the landscape of the preserve compare with landscapes described that are the results of burning? In the previous discussion of why Indians would burn, certain features of a fire-maintained landscape were referred to. Lewis suggested that spotty vegetation cover is a pattern resulting from localized burning by Indians.[48] Many observers of preserve vegetation today comment on the spotty character of the cover and the abrupt changes between vegetation zones that seem to occur with no obvious reason.

Another characteristic of Indian fire-maintained landscapes in the coast ranges is the location of small patches of prairie scattered at various locations and elevations. Loud's[49] and Gould's[50] descriptions of these prairies quickly bring to mind the meadow areas of the preserve and their pattern of location both along the river terraces and in the higher elevations (See map 6). All of these areas should be investigated for archaeologic evidence to help answer questions on both their origin and their possible Indian habitation.

It has already been shown that numerous Indian

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[48]Lewis, op. cit., p. 84.

[49]L. L. Loud, loc. cit.

[50]Lewis, op. cit., p. 69.

groups used fire to tend tanoaks, and the preserve does have extensive tanoak groves, but what about black oaks? Black Oak Mountain (See map 1 on page 3) is named for the impressive stand that clothes the ridges from the summit, north to the headwaters of Fox Creek and southeast towards Stolen Opening. Hunters in the 1940's and 50's were known to burn the brush on the mountain to increase the deer population, but the oaks were already well established by that time. Fire has been suppressed since then and now the black oaks are being crowded and shaded out by Douglas fir. It is apparent that without fire, this grove would succumb to succession. Since black oak acorns are second only to tanoak in Indian acorn preference and since it is a heavy and regular producer (200 to 300 pounds per tree more than once every two years according to Baumhoff),[51] one cannot help but wonder if the Indians tended this significant grove with fire.

Besides the spottiness of the vegetation, the existence and location of prairies and possibly oak groves, previous Indian burning could also explain the successionary state of the vegetation described by the early set-

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[51]Baumhoff 1963, op. cit., p. 166.

tlers and still conspicuous today. Dr. David Frederickson,[52] while working on an archaeological survey in the Laytonville area, developed an interesting hypothesis. The site he was working on was a recently logged-off, mixed evergreen forest but he believed it was not mixed evergreen forest at the time of Kato habitation. From studying the bimodal distribution of stump sizes and tree ring counts, he suggested that the area was "evergreen park land with a few scattered fir and pines in an area otherwise clear of trees," during Kato habitation and, "At a later time evergreen forest developed in the area." He then stated,

> The coincidence of initial modern influence in the area at around 1856 [the date of the founding of the town of Cahto] and the development of a mature evergreen forest beginning shortly after that time allowed the formulation of the hypothesis that the Kato of the Laytonville area employed burning as a method of resources management and that the method was dropped shortly after sustained contact with the European-derived population began.[53]

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[52]David A. Fredrickson, "An Archaeological Survey of a Proposed Development Area at Laytonville Rancheria, Mendocino County, California" (report prepared for the National Park Service by David A. Frederickson, California State College, Sonoma, Foundation for Educational Development, Inc., February 1976).

[53]Ibid., p. 6.

Such a date for ending Indian fires in the preserve area could explain the whitethorn brush in some of the meadows and other early stages of succession seen by the first settlers in the 1880's. An interesting and valuable topic for further research would be to employ tree-ring counts and see if succession on the preserve began at a time similar to what Frederickson found.

Land Use and Impact of the Indian Period of Habitation--Conclusion

From the available evidence it is apparent that the Kato Indians' primary use of the preserve area was to obtain food resources. This entailed some residence in the form of hunting and gathering camps and perhaps even several semipermanent villages. According to Baumhoff,[54] the Kato had adapted to a generalist approach to foraging by the time they inhabited this area. As generalists, their hunting and gathering activities would have been directed towards all aspects of the environment, probably impacting none in particular. Even extensive fishing, according to Rostlund, probably did not detrimentally effect the fish population, but, if anything, may have benefited it.[55] Indians transporting foods might have

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[54]Baumhoff, 1963, loc. cit., p. 222.

[55]Erhard Rostlund, "Freshwater Fish and Fishing," University of California Publications in Geography, vol. 9

caused some accidental introductions of species like buckeye, Aesculus californica and walnut, Juglans californica[56] but otherwise the impact of their foraging would have been minor.

The most significant tool the Kato may have used in their hunting and gathering activities is fire. With fire they could tend useful plants, control the location, extent and successional stages of ecotone regions, brushlands and prairies, their prime food-producing habitats. From the information presented in the preceding discussion, it seems possible that aboriginal burning may have been extensive and perhaps in part responsible for the location of prairies, oak groves and the widespread successional features in the preserve area when the settlers arrived. Perhaps this burning also underlays the "spotty" character of the preserve's present vegetation cover. If this is so, the period of Indian land use not only shaped the environment found by early settlers, but also influenced the present vegetation patterns.

(1952), p. 16. Rostlund believes that the major limiting factor on fish reproduction is the availability of suitable spawning beds. If there is an overabundance of fish, their competition for the limited beds reduces the reproductive success of even those fish that do spawn.

[56]This has been documented by Willis Linn Jepson, The Trees of California (Berkeley, California: Associated Student Store, University of California, 1923), pp. 166-167, for other areas of California. Of note here is that buckeye on the preserve is usually found only in association with

known Indian sites and even in those locations they appear to survive poorly.

CHAPTER IV

THE HOMESTEADING PERIOD

Introduction

Timber brought the first settlers to Mendocino County. As the Gold Rush created building demands for the burgeoning California cities, and their local wood resources became exhausted, timbermen began to go farther afield for their lumber products. Reports of the grand redwood forests of the North Coast attracted lumbermen to the Mendocino coast in the mid 1850's and logging began at the most accessible points, which were the coastal forests and along the major rivers. The forests that were removed from easy access by the first range of mountains were infiltrated more slowly. By the time the lumbermen finally penetrated the more remote areas, another settlement incentive had developed. The passage of the Homestead Act of 1862 opened Federal land for settlement and patenting and, whereas the coastal areas had already been logged and settled, the inland areas remained relatively untouched and available. This was the setting in which the settlement of the preserve area began.

Early records of explorers and trappers in this

area could not be found and, perhaps because of the out-of-the-way location, away from major rivers or valleys and nestled in rugged, steep country, this area was not entered until settlement itself began pushing its way into the more remote reaches of the major watersheds. With the settlement of Cahto Valley (See map 7) three miles west of Laytonville, in the 1860's entrepreneurs and homesteading settlers began to enter the preserve area.

The town of Cahto (See map 7) was founded in 1856 and immediately began to grow. In 1861, a hotel opened and soon a stage route was established that linked the new town with Willits, a major population center to the south, Westport, a coastal timber town and ship landing to the west, and Covelo, an important agricultural center to the east (See map 7).[1] Cahto and the surrounding area began to develop and prosper with the flow of commerce. In the 1880's, the founders of Cahto, John Simpson and Robert White, opened a saw mill somewhere in Jackson Valley, probably near the present site of Branscomb. This major construction was six miles west of Cahto, and a similar distance from the preserve, and was the first of its kind in the area. It may have been important in encouraging settlement. Also at this time, camps for tan-

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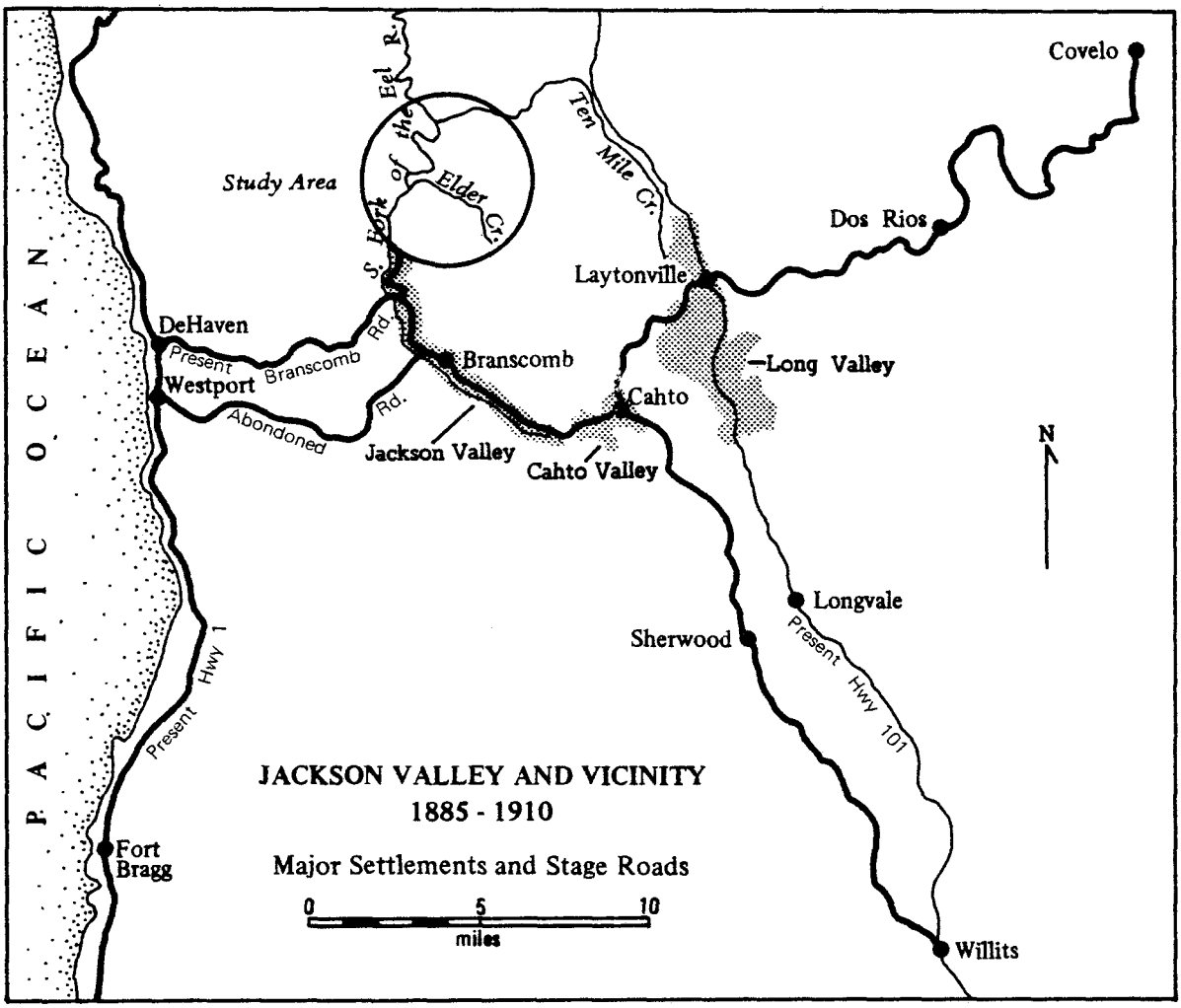
[1]Lyman E. Palmer, History of Mendocino County, California (San Francisco: Alley Bowen and Co., 1880).

MAP 7


PACIFIC OCEAN
Study Area
Eel R.
S. Fork of the Elder Cr.
Ten Mile Cr.
Covelo
Dos Rios
Laytonville
Long Valley
DeHaven
Present Branscomb Rd.
Westport
Abondoned Rd.
Branscomb
Jackson Valley
Cahto
Cahto Valley
N
Longvale
Sherwood
Present Hwy 101
Present Hwy 1
Fort Bragg
Willits
JACKSON VALLEY AND VICINITY
1885 - 1910
Major Settlements and Stage Roads
0 5 10
miles

barking and the making of split redwood products had pushed inland from the coast to the ridges surrounding Jackson Valley. These camps provided a source of early settlers.

One of these, John Walker,[2] a woodsman who ran tanbark and tie camps in the Lincoln Ridge area, was the earliest known white person in the preserve area. John was somewhat of a land speculator. He would scout out suitable homestead sites along the Eel River, perhaps make nominal improvements by establishing a camp, and then sell squatter's rights to prospective settlers. He was scouting out the preserve area by at least 1882-3, and soon brought in the first homesteaders, Stephen and Princetta Elder, who bought squatter's rights from him in 1885. With the arrival of the Elders, the preserve entered into the Homesteading Period.

Within a few years of the first settlers, the other homesteading families arrived and established claims, that in the future would always be associated with them and identified by their names (See map 8). Stephen and Princetta Elder moved into their first homestead in 1885, but in 1892 relinguished their squatter's rights to their daughter Bertha and her new husband William Walker. The

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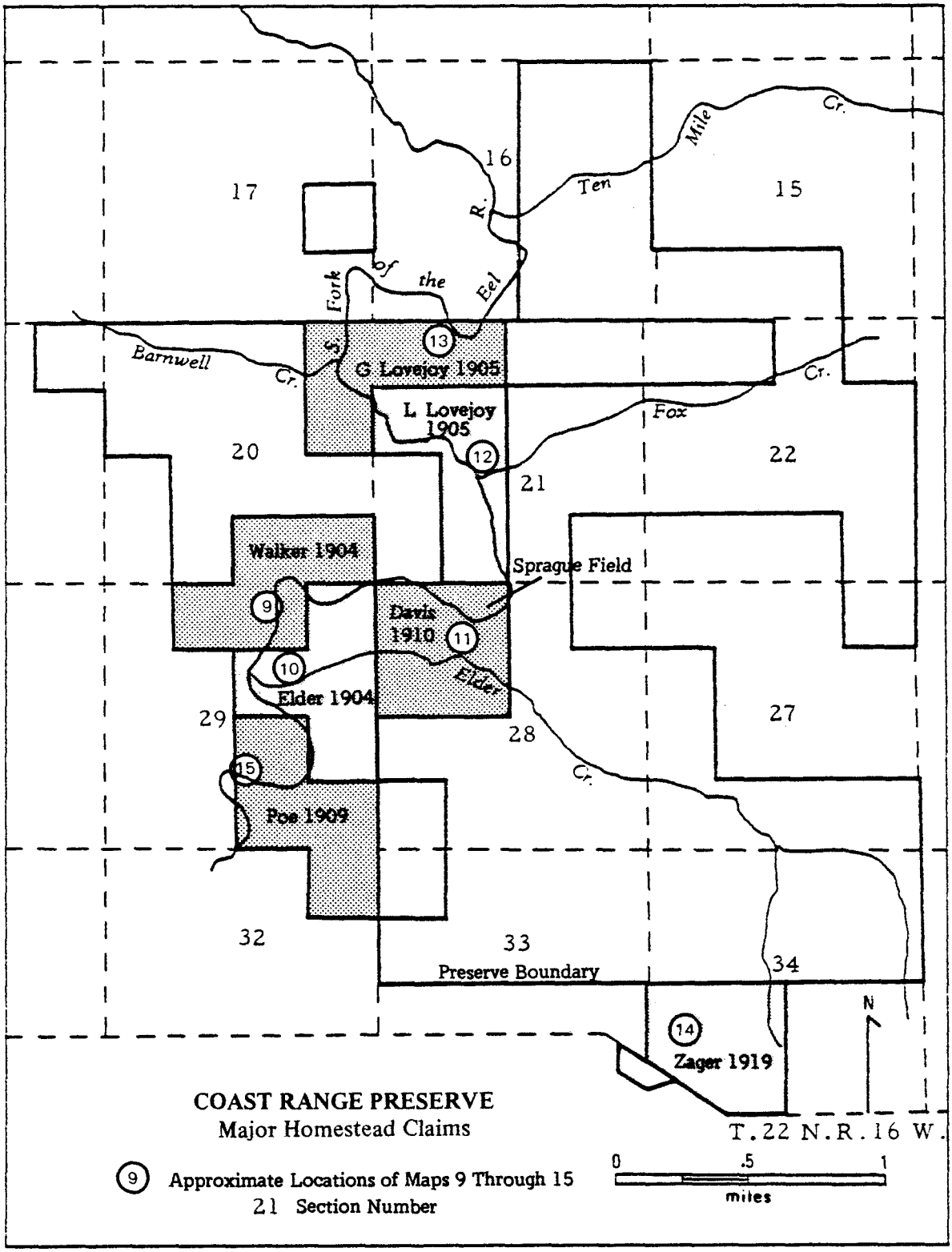
[2]John Walker was the older brother of William Walker who homesteaded in the preserve.

MAP 8


16
17
15
Ten Mile Cr.
R.
North Fork of the Eel
Barnwell Cr.
13
G Lovejoy 1905
L Lovejoy 1905
Fox Cr.
12
20
21
22
Walker 1904
Sprague Field
9
Davis 1910
11
10
Elder 1904
Elder Cr.
29
28
27
15
Poe 1909
32
33
34
Preserve Boundary
14
Zager 1919
N
COAST RANGE PRESERVE
Major Homestead Claims
T.22 N.R.16 W.
9 Approximate Locations of Maps 9 Through 15
21 Section Number
0 .5 1
miles

Elders moved across the Eel River to their new homestead next to Elder Creek.

Other early arrivals in the preserve area were Mr. Cole who settled the Wilderness Lodge area in the 1880's and built the original house. In 1891, he sold his squatter's rights to the Lovejoys: the brothers Loriston and George with their parents Abial and Harriet. George married and moved down river to an adjacent site, Horseshoe Bend, in 1895.

The Davis family arrived in about 1898-9 and settled on a small flat upstream from the Elder homestead on Elder Creek. In 1903, Henry Poe, his wife, and family settled on a flat by the Eel River near the present southern boundary of the preserve. The last major homestead family to arrive was the Zagers. They settled on the south ridge of the Elder Creek Watershed in about 1908.

These were the major families of the area. All were present by the early 1900's. But, by the time the last families had arrived, some, like the Walkers and Elders, had already left. So the Homestead Period was relatively short. It began in 1885 with the arrival of the Elders and ended in 1928 with the departure of the Zagers. In spite of its short span, the ownership, development, and land use pattern for the Eel River corridor (See map 3, page 17) and much of the rest of the preserve was established during this time. This, then,

was the most significant settlement period, for the patterns of ownership, roads, fields and development, established at this time, are the same patterns that persist today.

In the remainder of this chapter, the settlement and land use of these homesteading settlers will be examined. For each site, the time period considered begins with the arrival of the homesteading family and extends to when they sold and left. These dates are somewhat staggered since some families had already left by the time others arrived. However, all subsequent ownership and land use will be covered in chapter 5.

The Major Homesteads: Site and Settlement History

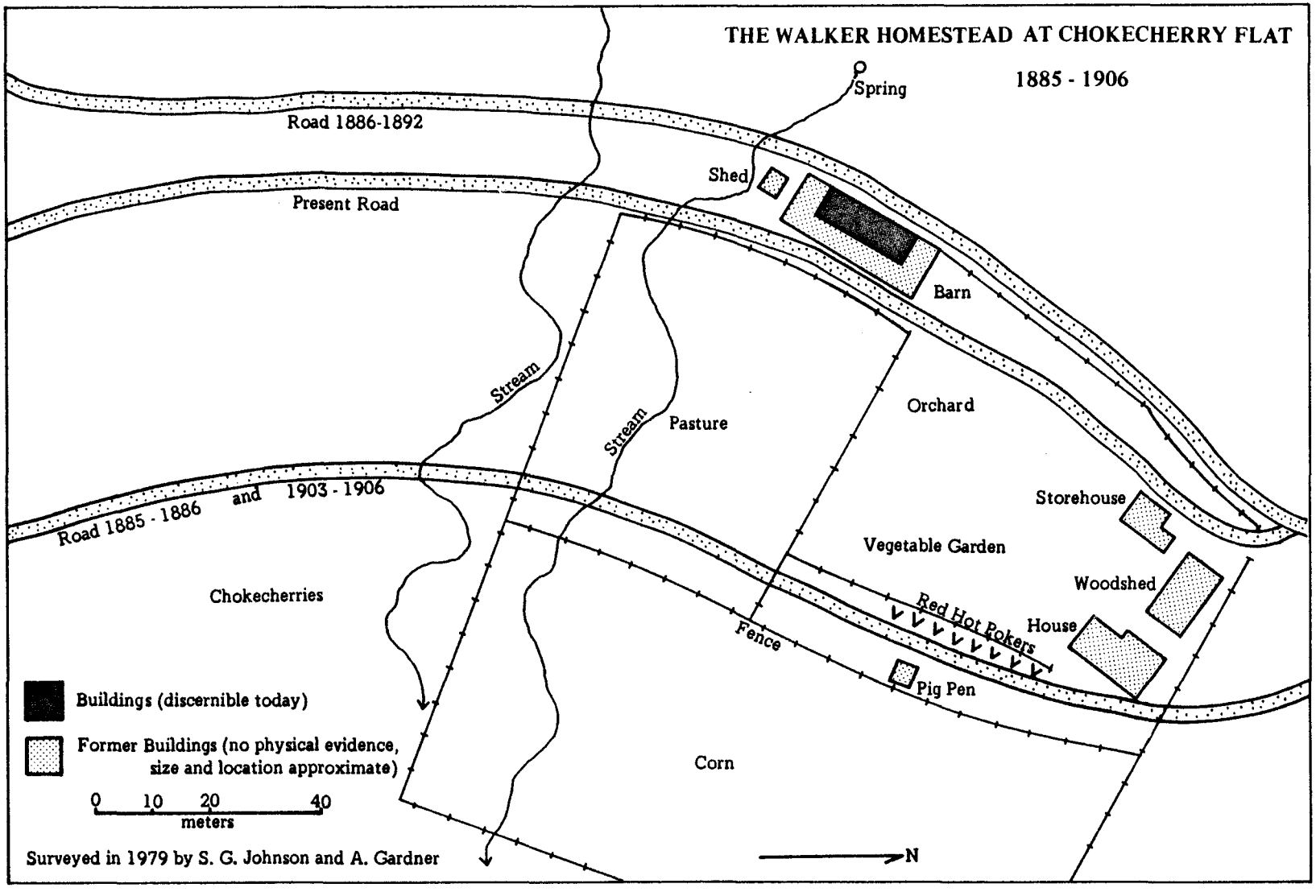
Although all of the land now included in the preserve was patented from the U.S. Government under the Homestead Act of 1862 and its later amendments, only a few major homesites developed. The other properties had a much reduced intensity of habitation and land use, whether because of site factors or characteristics of the settlers themselves, and will be considered under a later section of this chapter, "Undeveloped Claims and Miscellaneous Cabins." The major homesteads, considered in the following discussion, are those where significant improvements and agriculture developed and are those sites most easily discernable today. They are the Walker Homestead at Chokecherry Flat, the Elder Homestead at Oak Grove, the

Davis Homestead, Wilderness Lodge, Horseshoe Bend, the Poe Homestead and the Zager Homestead. The locations of these homestead claims are shown in map 8 and the layouts of individual homesites is shown in maps 9 through 15.

The Walker Homestead at Chokecherry Flat. This 160-acre parcel includes approximately 3/4 mile of the South Fork of the Eel River, two meadows on the river terraces today called Upper and Lower Walker Meadows (approximately 20 acres and 10 acres, respectively) and the slopes above the river terraces. A fine grove of redwoods, now called Walker Grove, stands in the gulch to the south of the homesite and the hills above the site, now covered with tanoak, madrone, and fir, were then covered in brush, primarily whitethorn, with tanbark oaks in the ravines. The homestead was called "Chokecherry Flat" after the thicket consisting of Prunus virginiana var. demissa that occupied a lower terrace (See map 9). But today, only white oaks grow in this spot and the one chokecherry remaining on the homestead grows in the middle of what was the cornfield. To the settlers, this site offered ample flat land and water was available although not abundant.

Stephen and Princetta Elder and their family settled this spot in 1885, but they only lived on the claim from fall to spring. During the summers, Stephen,

MAP 9


THE WALKER HOMESTEAD AT CHOKECHERRY FLAT
1885 - 1906
Spring
Road 1886-1892
Present Road
Shed
Barn
Stream
Stream
Pasture
Orchard
Road 1885 - 1886 and 1903 - 1906
Storehouse
Vegetable Garden
Woodshed
Chokecherries
Red Hot Pokers
House
Fence
Pig Pen
Corn
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
0 10 20 40
meters
Surveyed in 1979 by S. G. Johnson and A. Gardner
N

Princetta and their son, Charlie, worked in coastal tan-bark and tie camps to earn needed cash, while their daughter, Bertha, stayed on the claim to protect it from claim junpers. In 1887, Bertha married Bill Walker, who lived with the family. Their first two children were born in 1888 and 1890; thus, during this period, up to five adults and several children seasonally resided on the claim (See table 2).

In 1892, the Elders moved across the river to another site which they had begun to work, and relinquished rights to the first claim to their daughter, Bertha, and her husband, Bill Walker. The Walker family grew to six with the birth of two more children, and they continued the pattern of seasonal residence except when they were gone entirely from 1898-1903 to permit the older children to attend school. When a school finally opened in the preserve area, across the river on a flat above Elder Creek, the Walker family moved back to the homestead. Bill Walker continued to work out of the area much of the summers but the rest of the family stayed on the claim.

In 1904, they received title to their land, but in October, 1906, they moved away and sold the property to John Metcalf of the Metcalf and Clark Timber Company the

TABLE 2

POPULATION AND SETTLEMENT CHARACTERISTICS FOR THE MAJOR HOMESTEADS

Homesteads	Poe	Walker	Elder	Davis	Lovejoy	Lovejoy	Zager
Date Settled	1903	1885	1892	1898-9	1890	1895	1908
Who Settled	Poe	Elder Walker (1892)	Elder	Davis	Approx. Cole Lovejoy (1892)	Lovejoy	Wickershan Zager
Population YEAR 1885	squatter	4s[1]	0	0	0	-	-
1890	0	8s[1]	0	0	3	-	-
1895	0	6s[1]	3	0	7	4	-
1900		0	2	4	7	5+ 30s[2]	-
1905		6	2	6	6+ 20s[2]	4 30s[2]	-
1910	- Original	- Homesteaders	-	6	6+ 20s[2]	4 30s[2]	6
1915	-	-	-	6	6+ 20s[2]	4 30s[2]	8
1920	- Departed			-	-	-	7*1
Major Improvements	1903-5	1885-90	1892-7	1898-1903	1892-5	1895-1905	1905-1910
"Proved up"	1908	1904	1904	1910	1905	1905	1919
Sale Date	1909	1906	1906	1915	1917	1904, 1918	1928
Sale To Whom	Blosser	Metcalf	Metcalf	Rayner	Kiefer	Shepard Sinclair	Henderson

s^1 - Seasonal occupance, winters only.
s^2 - Vacationing guests, summers only.
*1 - Intermittent residence until property sold.

following August.[3]

The Elder Homestead at Oak Grove. The 100-acre Elder Homestead included the stream terrace on the north bank of Elder Creek just before its confluence with the Eel River (See maps 8 and 10). This is the site of the Angelo home today (See chapter 4). The meadow area, now surrounded by encroaching forest, was described as being covered in low manzanita brush at the time of original settlement resources at this site which became locally known as "Oak Grove" because of the distinguishing large white oak trees (Quercus garryana).

This spot was settled by Stephen and Princetta Elder who began working on it while they were still living at their first claim, "Chokecherry Flat," just across the river. In 1892, they and their son, Charlie, moved from the first homestead and began residence at Oak Grove. From this time on, they lived and worked year-round on the claim (See table 2). Charlie left in 1898 to establish his own homestead, but continued to help his parents by periodically bringing them meat and stock.

In 1904, Stephen and Princetta received title to

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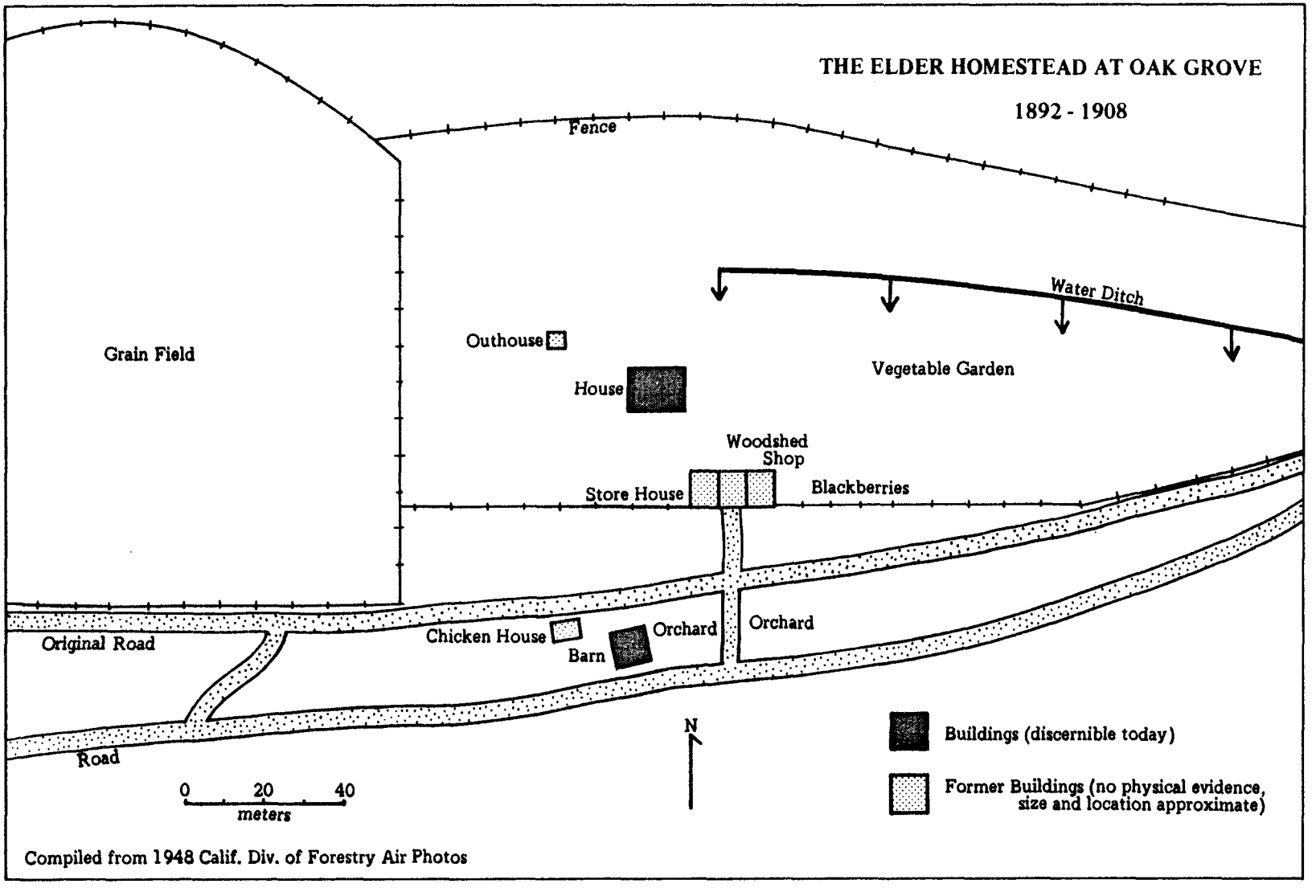
[3]See tables 4 and 5 for book and page where this transaction is recorded in Mendocino County Official Records. All other transactions mentioned in the text and not footnoted are also in tables 4 and 5.

MAP 10

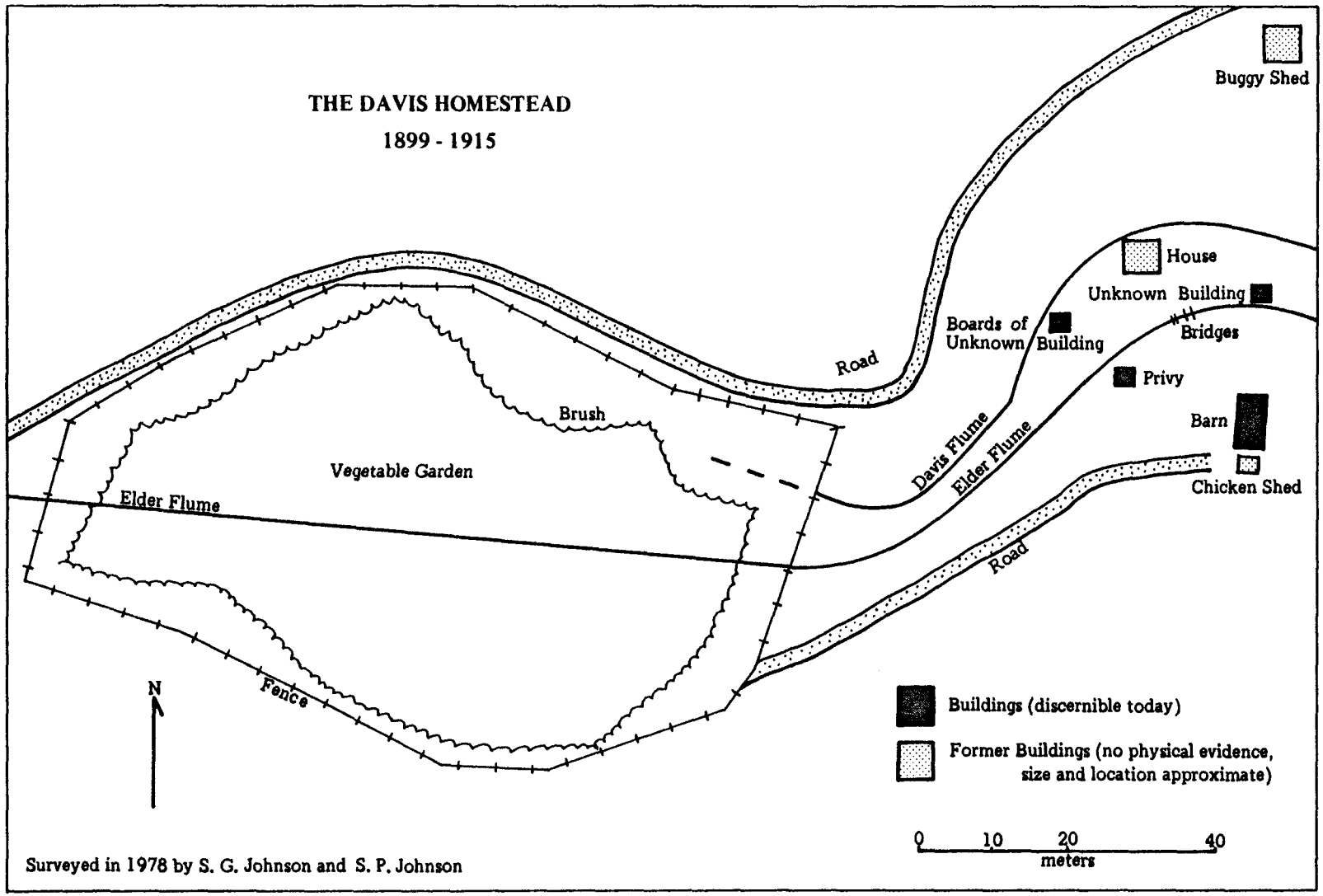

THE ELDER HOMESTEAD AT OAK GROVE
1892 - 1908
Fence
Water Ditch
Grain Field
Outhouse
House
Vegetable Garden
Woodshed
Shop
Store House
Blackberries
Original Road
Chicken House
Barn
Orchard
Orchard
Road
0 20 40
meters
N
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
Compiled from 1948 Calif. Div. of Forestry Air Photos

the land, but perhaps because of age and the fact that their children had moved out of the area, they did not keep the land long. They sold to John Metcalf in 1907 and moved to Willits.

The Davis Homestead. On the north side of Elder Creek, about one half mile upstream from Elder's "Oak Grove," was the 160-acre claim of James "Shorty" Davis and his family (See maps 8 and 11). The site, today covered in oak forest with young Douglas fir, is described as being very brushy, primarily whitethorn and small oaks, at the time of settlement. Some flat land is provided by several narrow stream terraces and the proximity of Elder Creek made adequate water available but difficult to develop because the source is lower than the terraces. The claim included some timber on the south side of Elder Creek and also extended across the Eel River to the north and included the lower terrace of the Sprague field.

The site was settled in 1898-9 by Shorty and his family--a family of four when they first arrived that soon grew to six with the birth of two children (See table 2). Shorty was a woodsman by trade and built a house and barn out of hand-split redwood boards, examples of which can still be seen today in the remnants of the old barn. Besides "proving up" (making the improvements necessary to acquire title to the property from the U.S. Government) and growing a big garden, Shorty contracted out for woods-

MAP 11


THE DAVIS HOMESTEAD
1899 - 1915
Buggy Shed
House
Unknown Building
Boards of Unknown Building
Bridges
Privy
Barn
Chicken Shed
Road
Brush
Vegetable Garden
Davis Flume
Elder Flume
Elder Flume
Road
Fence
N
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
0 10 20 40
meters
Surveyed in 1978 by S. G. Johnson and S. P. Johnson

man's work during the summers to improve his livelihood. He spent some time away from the family when he worked and sometimes had his assistants stay with the family. He peeled tanbark for some neighbors (not in the preserve, however), and worked up "split stuff" for the coastal lumber companies. But other than the trees felled and worked up for building materials on his own place, Shorty did not produce wood products from timber in the preserve itself.

In 1910, Shorty received title to his land but, in 1915, he sold the claim to J. E. Rayner and moved to Sonoma, allegedly because of "itchen feet."

The Loriston Lovejoy Homestead--Wilderness Lodge. On the east side of the Eel, a long river terrace almost one-half mile in length and dissected by Fox Creek became the site of Wilderness Lodge (See maps 8 and 12 and figures 3 through 7). This sunny location was well endowed with flat land and good water from Fox Creek that was readily available to the meadows. At the time of settlement, brush and low oaks clothed the edges of the meadows as shown in figure 4, areas where today madrone and young Douglas fir are establishing themselves among the live oaks. The Wilderness Lodge meadow itself had a group of big oaks (probably Quercus garryana) in front of where the house was built that were cleared out by Abial Lovejoy, and a

MAP 12

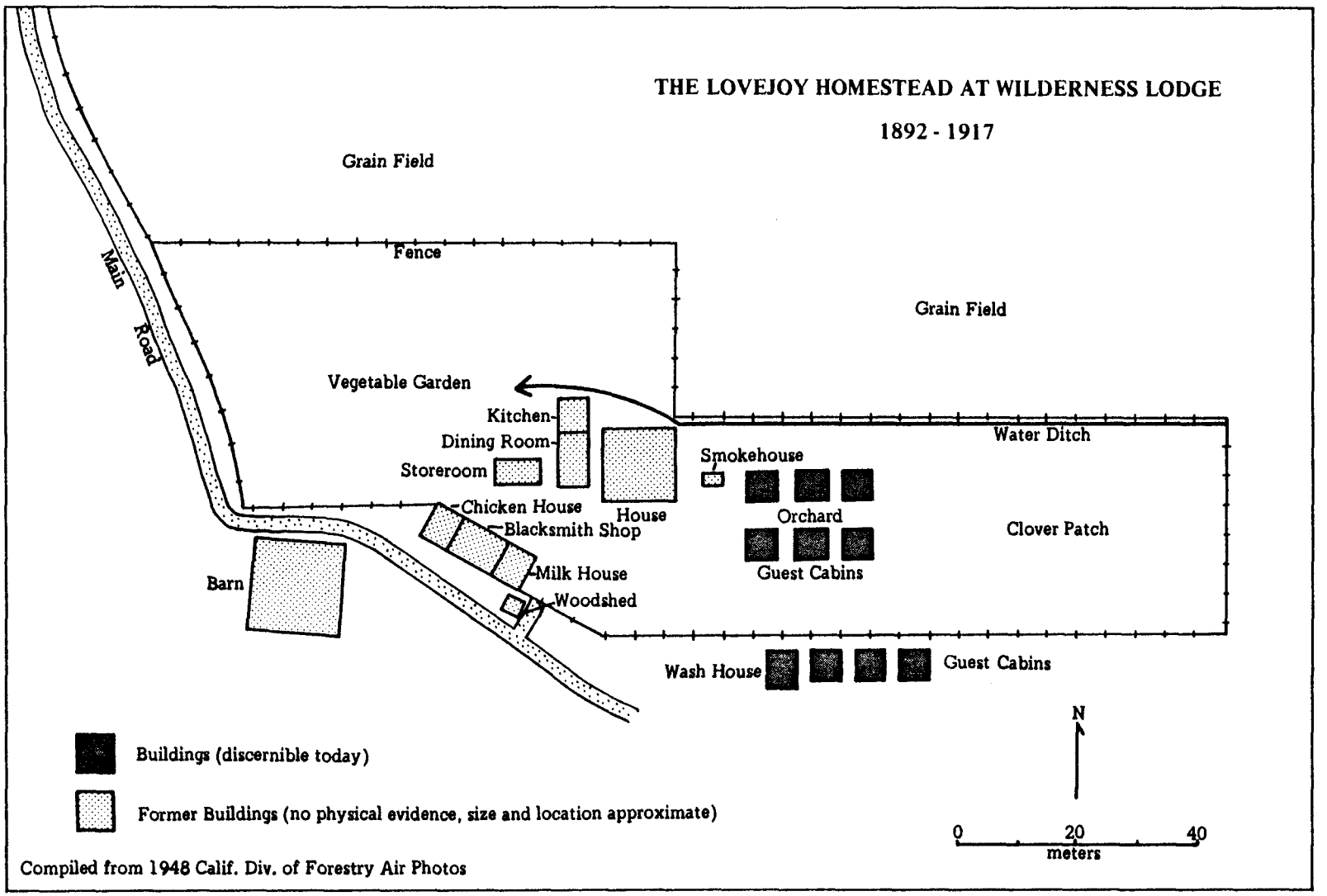

THE LOVEJOY HOMESTEAD AT WILDERNESS LODGE
1892 - 1917
Grain Field
Fence
Main Road
Grain Field
Vegetable Garden
Kitchen
Dining Room
Storeroom
Water Ditch
Smokehouse
Chicken House
Blacksmith Shop
House
Orchard
Clover Patch
Guest Cabins
Barn
Milk House
Woodshed
Wash House
Guest Cabins
N
0
20
40
meters
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
Compiled from 1948 Calif. Div. of Forestry Air Photos

Figure 3A. Looking south over the Wilderness Lodge area, this photograph shows (from left to right) the house, shed complex and barn.

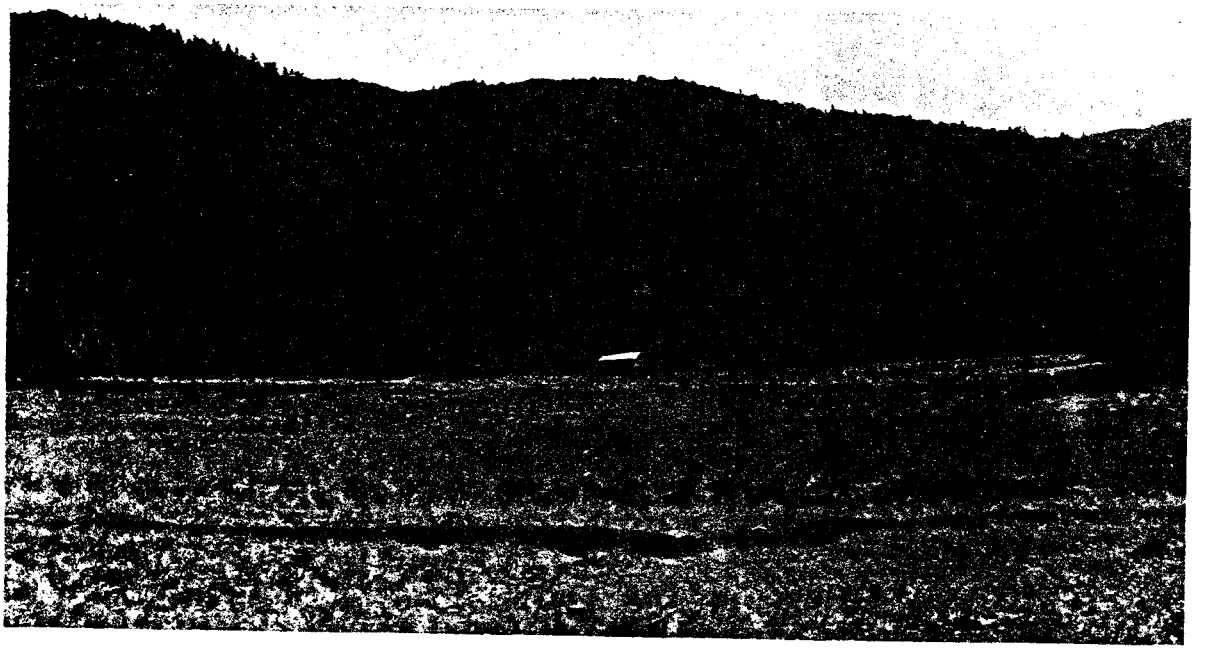


Figure 3B. The same area, winter, 1979, showing (from left to right) the present bathroom approximately where the house was located, and the present cabin approximately where the old barn stood. Note that the hillsides are considerably more brushy in the earlier photograph and appear as if they had been recently burned.

The photographs also show the drainage ditch in the field, indicating that it had been put in prior to 1906.

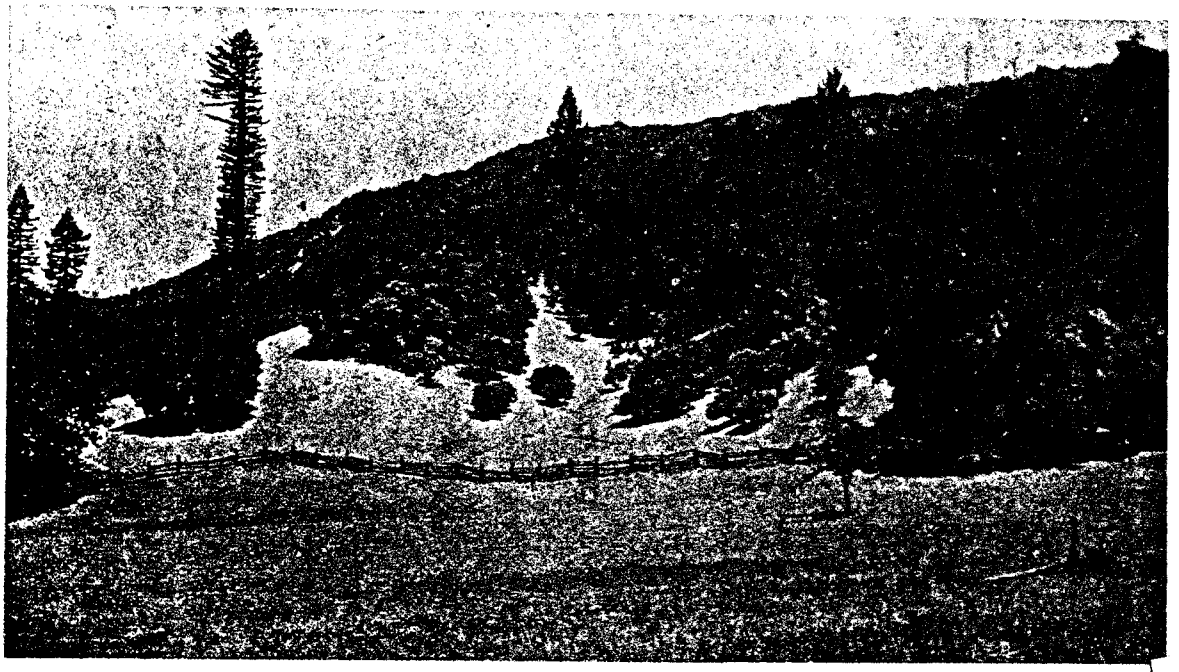


Figure 4A. This photograph, taken about 1906 of the ridge to the south of the Wilderness Lodge meadow, shows the "Lone Redwood." This area was burned regularly, every three years by the Lovejoys (See map 17). Note the few conifers and short stature of shrubs and oaks.

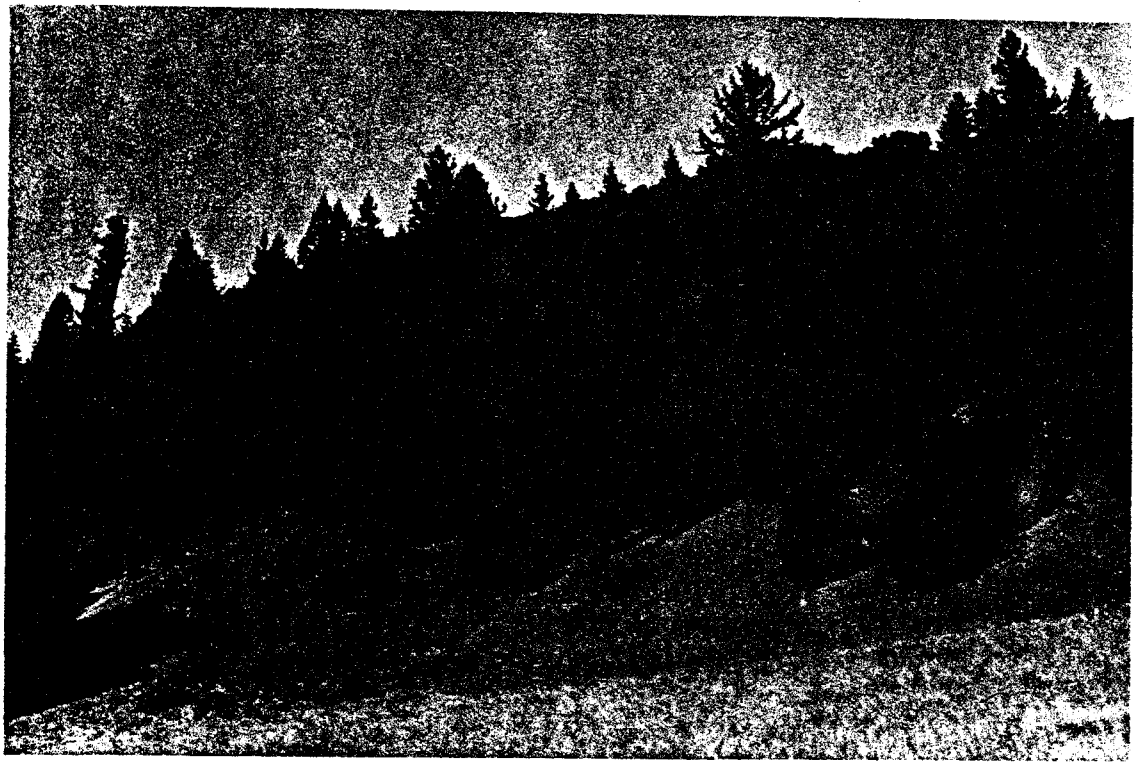


Figure 4B. The same area in the winter of 1979. The "Lone Redwood" is the leaning tree in the left of the picture. Note the vegetation change to conifers and taller oaks and madrones. This area was last burned in the wildfire in 1937 that destroyed the original Lodge.

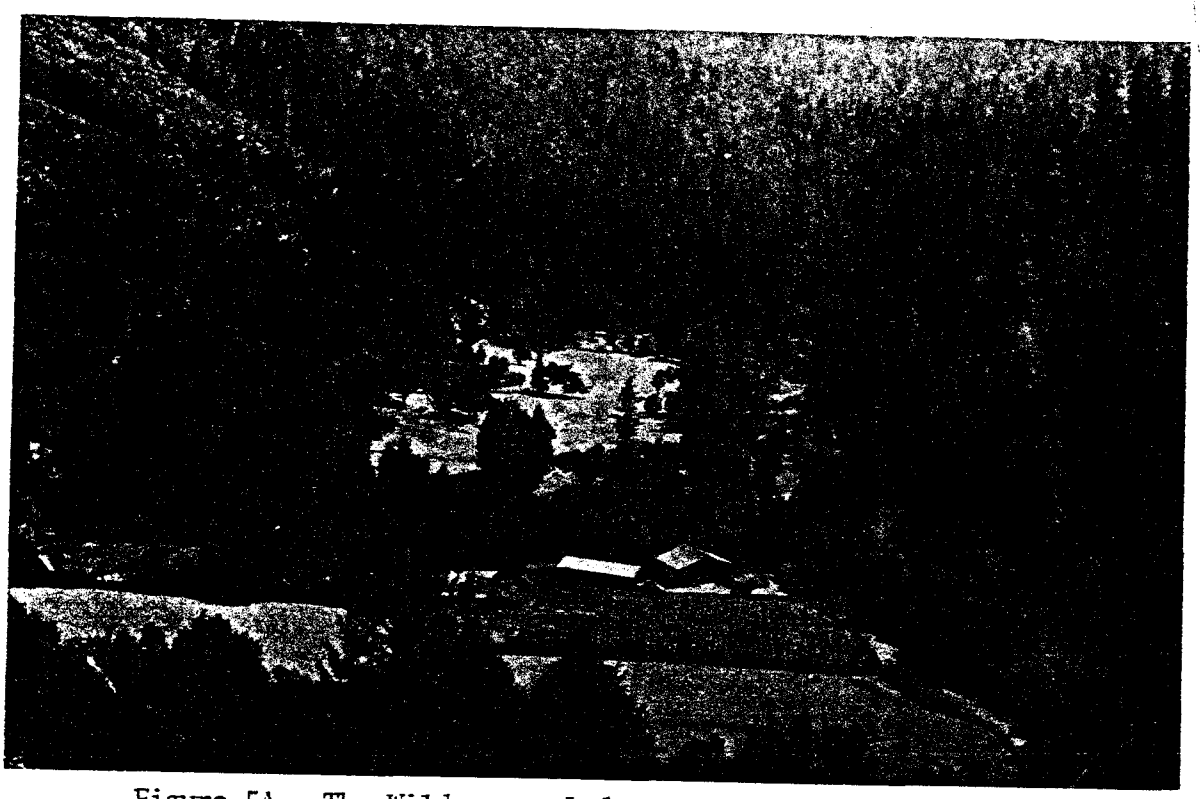


Figure 5A. The Wilderness Lodge area about 1906, as viewed from the ridge to the north.

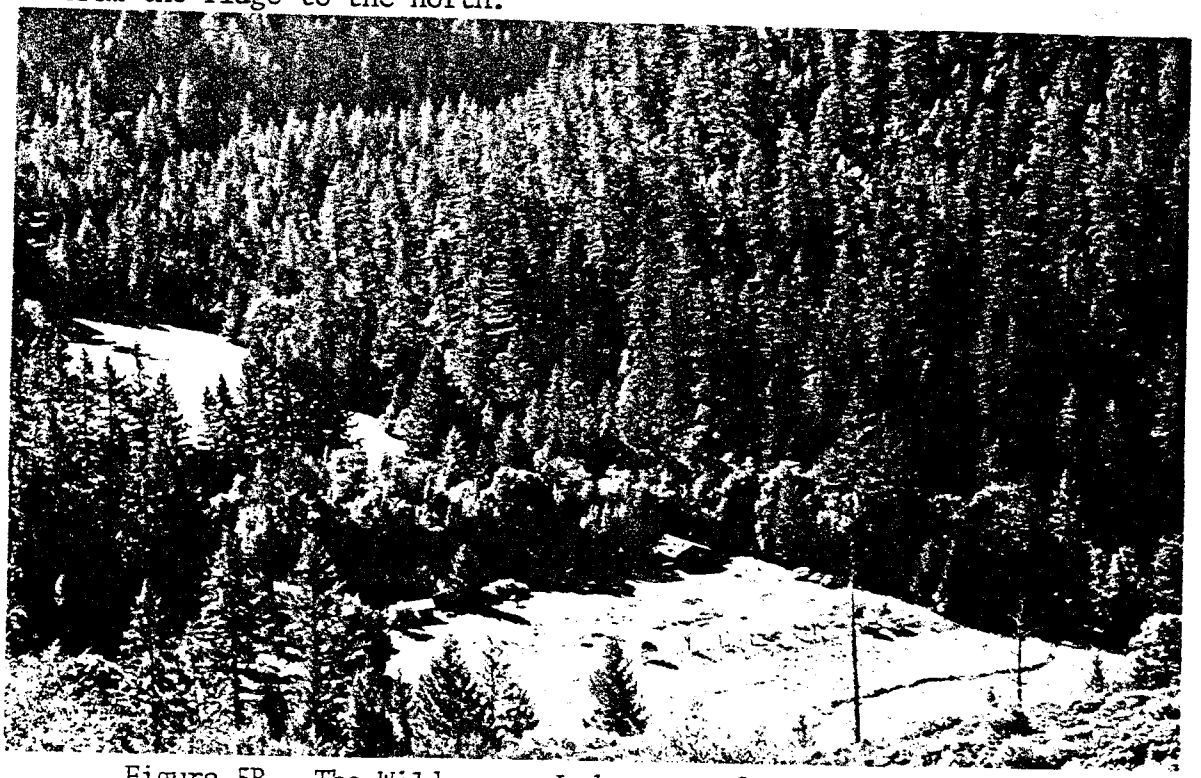


Figure 5B. The Wilderness Lodge area from a similar vantage point, fall 1978. The view of the earlier photograph could not be matched because of the tall vegetation that has grown in the area. Comparisons of building location in both photographs reveals the approximate sites of the original buildings.

Figure 6. A winter view of Wilderness Lodge from the field looking southwest, in about 1906. Buildings shown, from left to right, are: house, shed complex and barn (Also see map 12). Also shown is the wooded area on the river terrace on the far side of the Eel River, the site of the Lovejoy's split stuff operations.

Figure 7. The decked area in front of Wilderness Lodge around 1906. This photograph reveals something of the flavor of the resort era, no signs of which can be found on the site today.

patch of chokecherries in back, both of which are gone today.

This site was originally settled in the late 1880's or early 1890's by a Mr. Cole who lived there with his wife and daughter, and made "split stuff," shakes and fence pickets from the redwood timber on the property. He also built the original house and some outbuildings out of split redwood boards. In 1892, the Lovejoy brothers, Loriston and George, accompanied by their parents, Abial and Harriet, came in, joined Cole in making split stuff and soon took over squatter's rights when Cole left.

In the next several years, the Lovejoy brothers married the Lockhart sisters from the Branscomb area and began their families. George and Annie had one child before they moved to the adjacent Horseshoe Bend area to establish their own claim in 1895, and Loriston and Lulu eventually had four children at Wilderness Lodge. During the Lovejoy years of occupance, up to six adults (counting George and Annie) and four children resided on the homestead year-round (See table 2). In addition, fifteen to twenty summer guests at a time would also stay at Wilderness Lodge after the boarder business began about 1905 (See page 146).

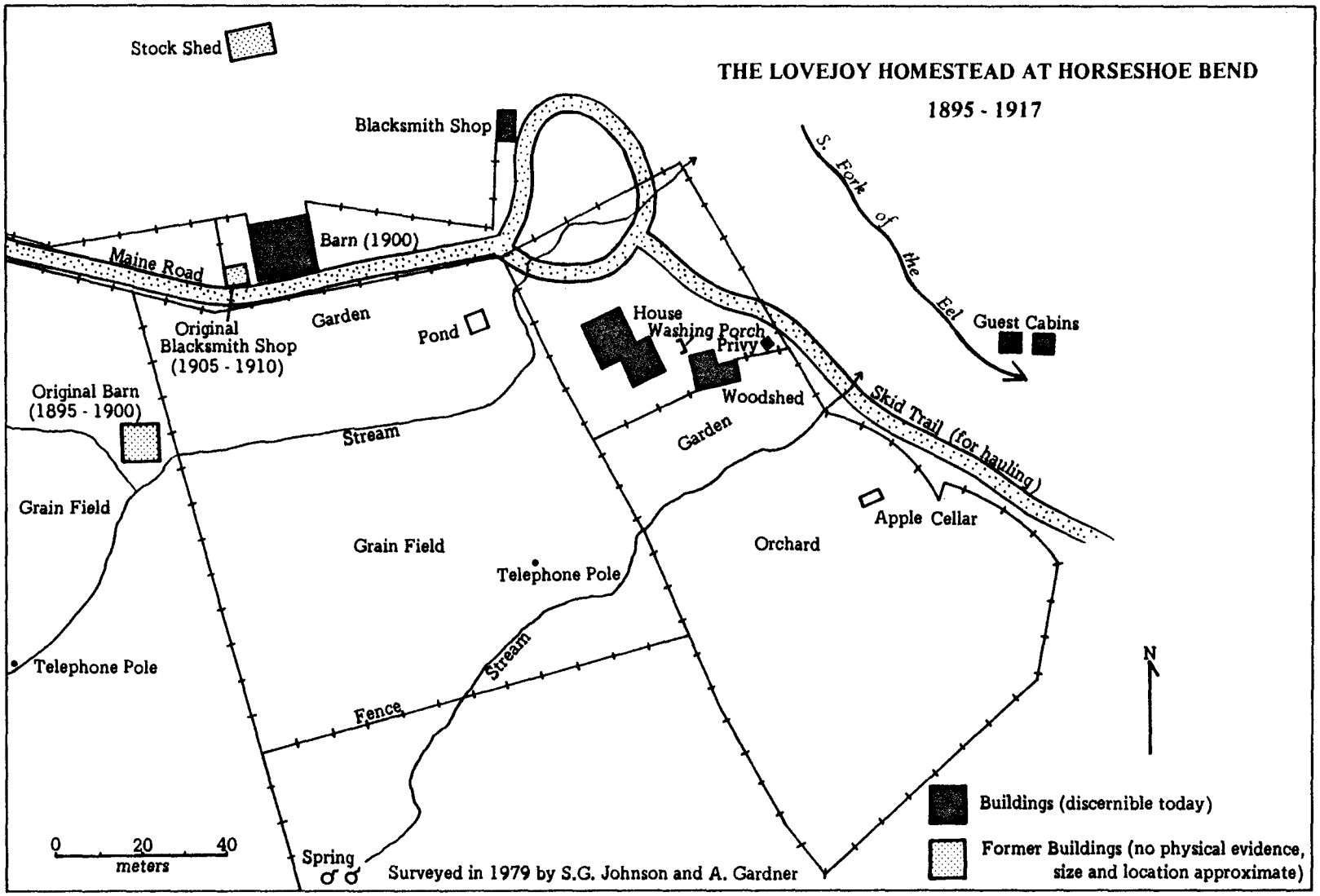
Wilderness Lodge was relatively self-sufficient but, like all homesteaders, the Lovejoys needed a way to earn cash to pay for items they needed that could not be

produced at home. Before the boarder business began and solved the problem, Loriston and George worked up redwood "split stuff" like Cole before them, for sale in Laytonville and Covelo. Later Loriston also sold small parcels of land to guests who had become enamored of the area (See page 143).

In August 1905, Loriston and Lulu received title to their 160-acre homestead. About this time also, the boarder business was beginning and in April, 1916 a guest and neighbor, William Kiefer, bought in as a partner in the "Wilderness Lodge Improvement Company." Within a year, the Lovejoys had left Wilderness Lodge and sold the remaining rights to Kiefer in January of 1917, allegedly because of difficulties in working with him.

The George Lovejoy Homestead--Horseshoe Bend. A large flat next to the Eel River, one mile north of Wilderness Lodge, became George and Annie Lovejoy's homestead (See maps 8 and 13 and figures 8 through 14). The area was called Horseshoe Bend after the evocative curve in the river there, and possessed abundant open, flat land and timber on the southern slopes of the surrounding hills. Old photographs (figures 11 through 13) reveal that, at the time of settlement, the area was considerably more open and brushy than it is today. Much of the vegetation and timber now present has apparently grown up since

MAP 13


THE LOVEJOY HOMESTEAD AT HORSESHOE BEND
1895 - 1917
Stock Shed
Blacksmith Shop
Barn (1900)
Maine Road
Original Blacksmith Shop (1905 - 1910)
Garden
Pond
House
Washing Porch
Privy
Woodshed
Garden
S. Fork of the Eel
Guest Cabins
Skid Trail (for hauling)
Original Barn (1895 - 1900)
Stream
Grain Field
Grain Field
Telephone Pole
Orchard
Apple Cellar
Telephone Pole
Stream
Fence
Spring
0 20 40
meters
Surveyed in 1979 by S.G. Johnson and A. Gardner
N
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)

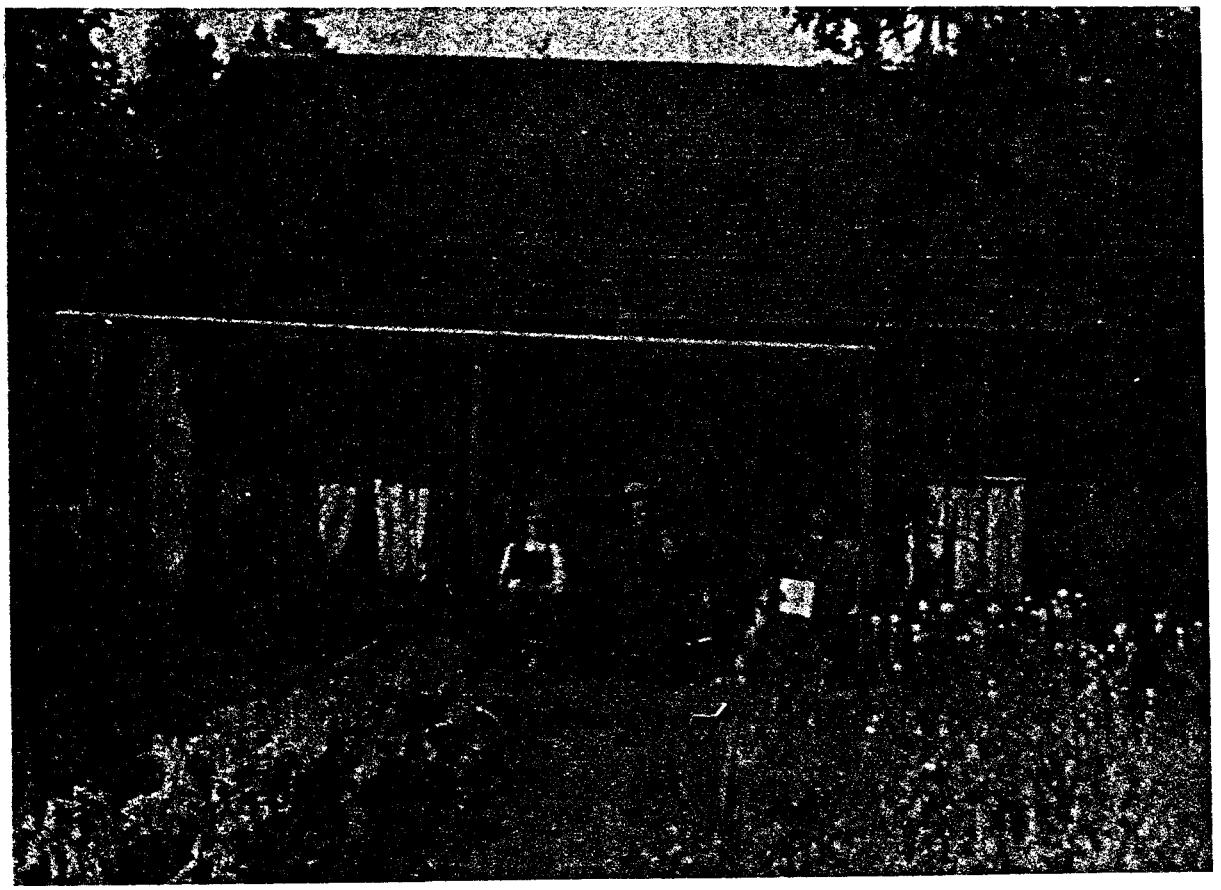


Figure 8. The original cabin at Horseshoe Bend about 1900. The people, from left to right, are: Fred Warren (who lived with the family until 1903), and George, Hattie and Annie Lovejoy.

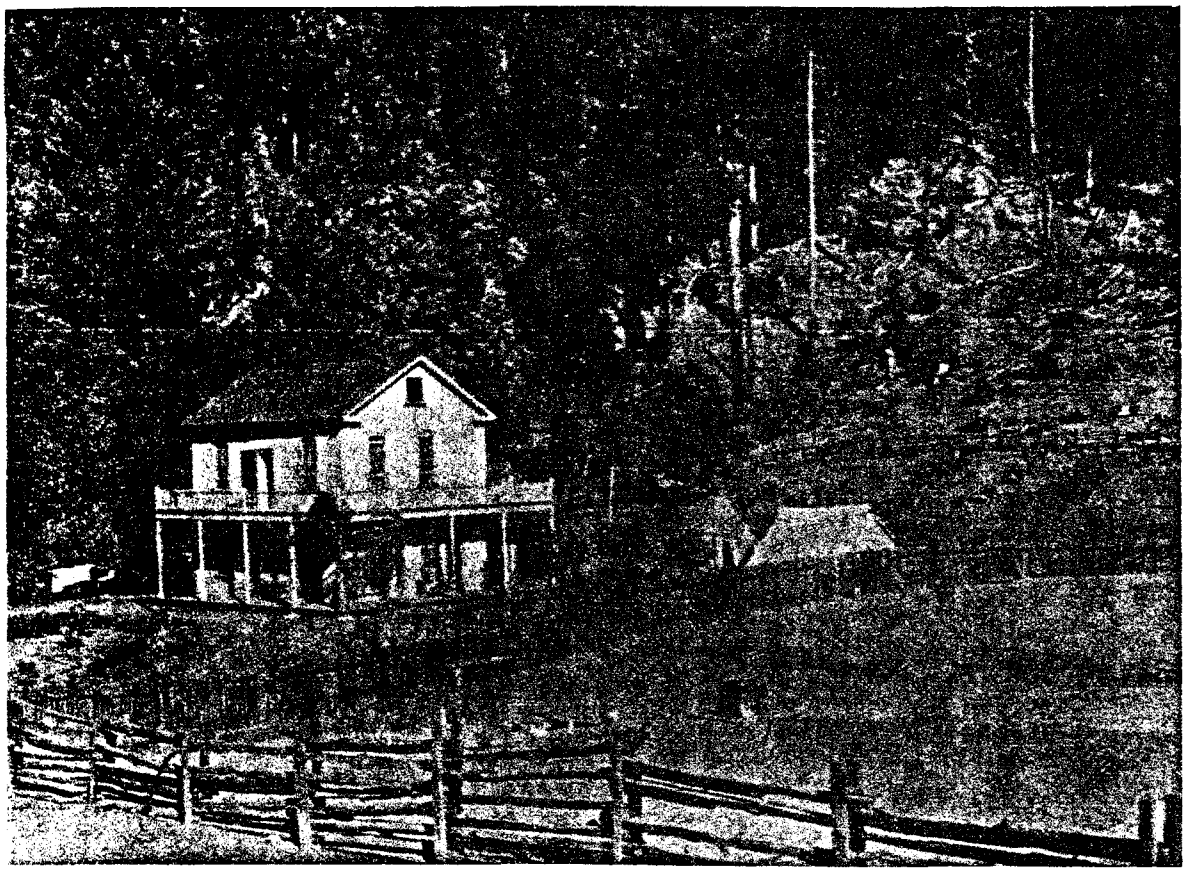


Figure 9. This photograph of the Horseshoe Bend area in about 1906 was taken from the road near the barn looking southeast (See map 13). It shows the addition to the house (the original cabin is barely visible to the right and behind the newer section), tents for guests, the newly planted orchard in back, and, farther up the hill, the area where the Lovejoys cut their Douglas fir firewood. Also shown are the two fence styles common on the early homesteads, the rail fence and the picket fence.

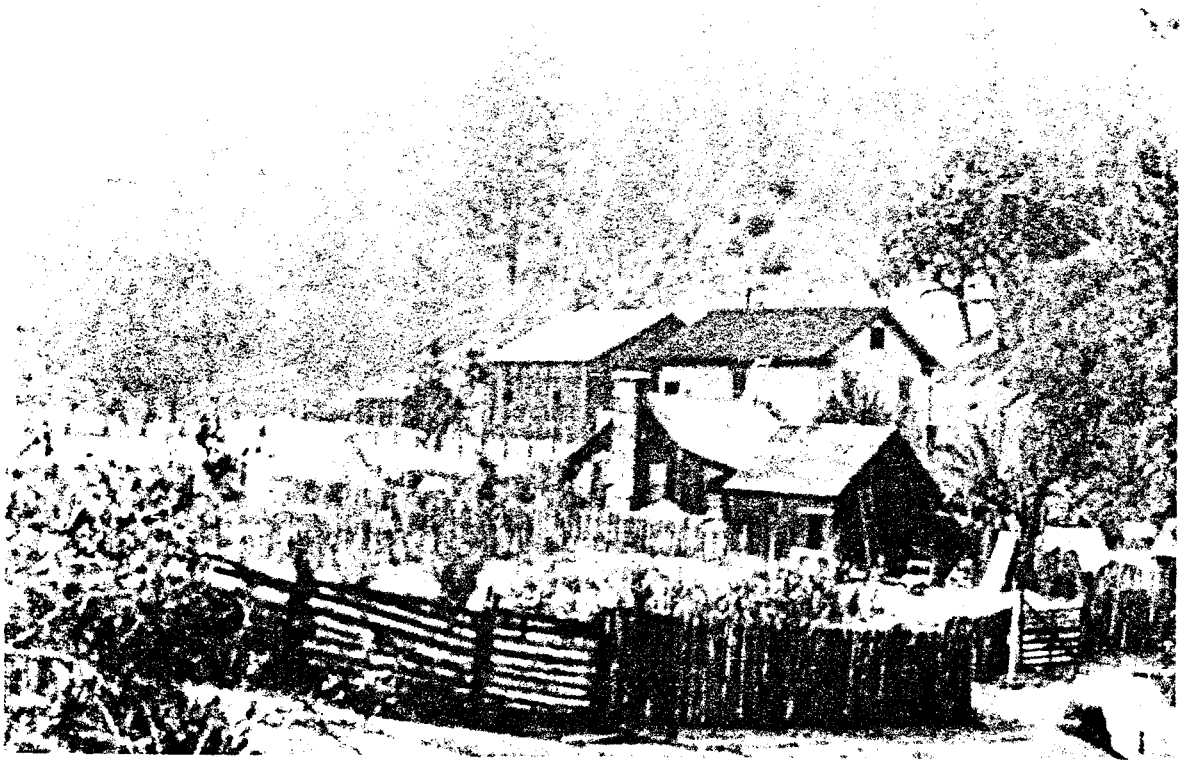


Figure 10. The buildings at Horseshoe Bend about 1906, viewed from the back near the river looking towards the northwest. The orchard is in the foreground. The buildings from front to back are: woodshed-shop, house (original cabin and Victorian addition), barn and early blacksmith shop.

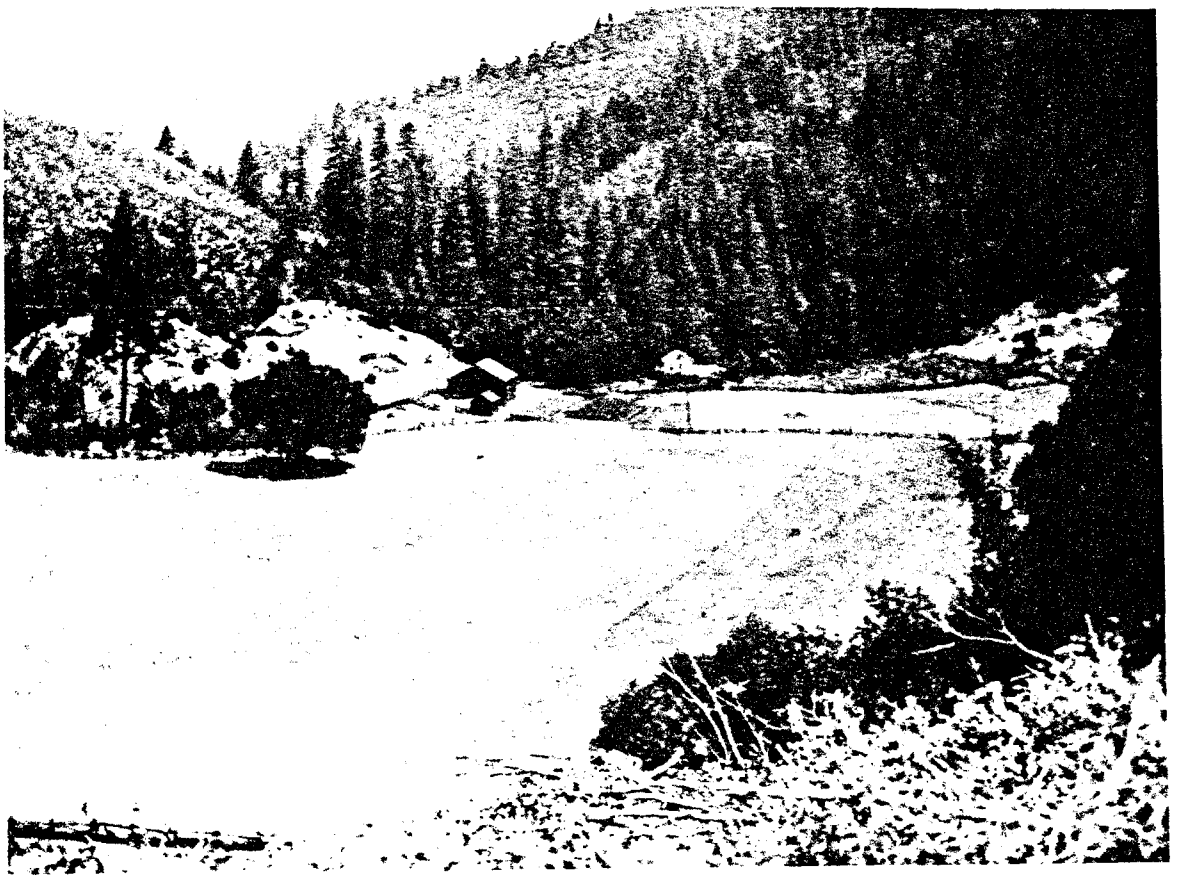


Figure 11. Horseshoe Bend from the ridge to the west in about 1906. The layout of buildings and fields are clearly visible. Note also the brushy character of the surrounding hills that are much more forested today. The ridge in the back, to the left, was burned every three years by the Lovejoys (See map 17). A recent photograph from the same viewpoint cannot be taken as forest now completely obliterates any comparable view.

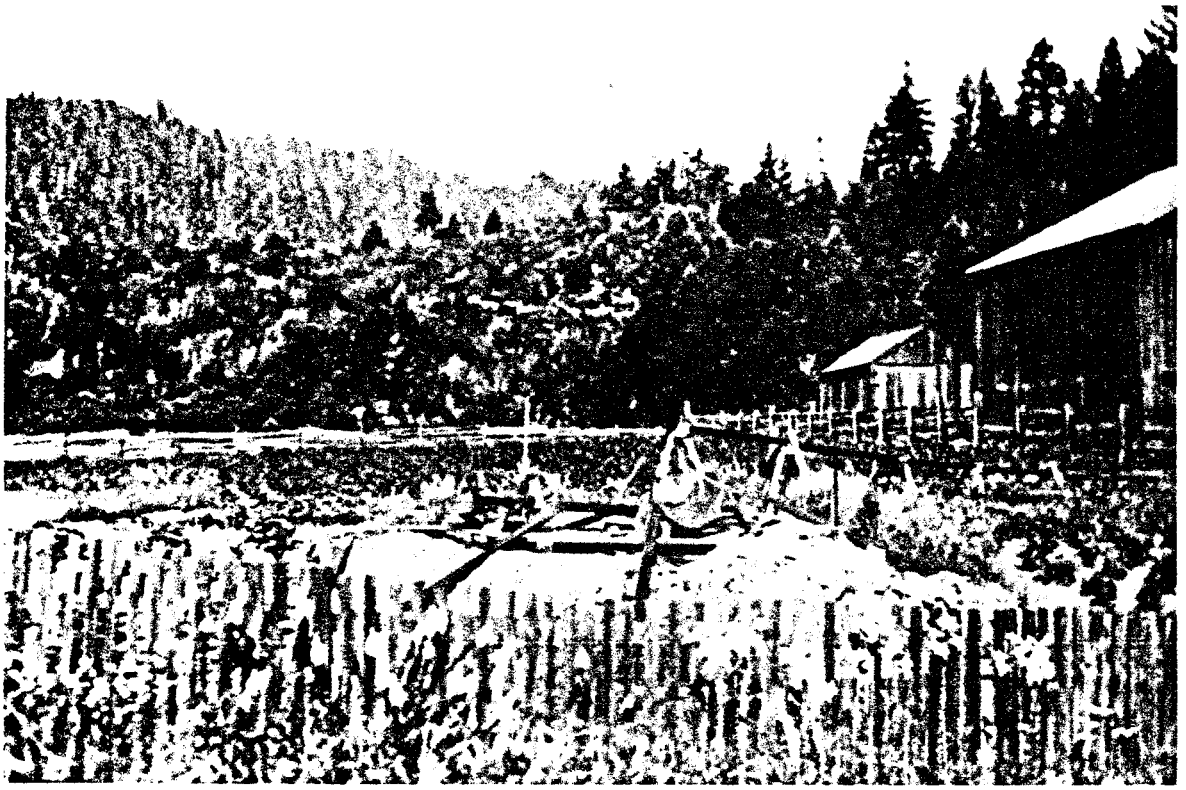


Figure 12A. Field, barn (lower right), and original blacksmith shop at Horseshoe Bend in about 1906.

Figure 12B. The same view today, taken from the porch of the house looking west. Note the encroachment of forest on the field, especially to the right where the barn and blacksmith shop was located. Also note the charred, burned appearance of the back hills in the earlier photograph.

Figure 13A. "Goat Hill," north of the house at Horseshoe Bend in about 1906. Note the flock of goats lying the in the shadow of the liveoak in the foreground.

Figure 13B. The same view today, taken from the porch of the house.

then.

George worked and lived at Wilderness Lodge with his brother and parents the first few years after arriving in the area. Even after marrying Annie Lockhart it 1894, the newlyweds remained at Wilderness Lodge while they began work on their own claim at Horseshoe Bend. Early in 1895, five months after their first child, Hattie, was born, they moved down to Horseshoe Bend and took up residence in the small cabin they had built there (figure 8). From then on the family lived continuously on the homestead. During these years, the claim supported two adults, up to four children (consisting of two of their own, Hattie and Robert, and Stan and Fred Warren, children of a friend), and up to thirty summer guests at a time because of the "boarder business" (See table 2 and p. 143).

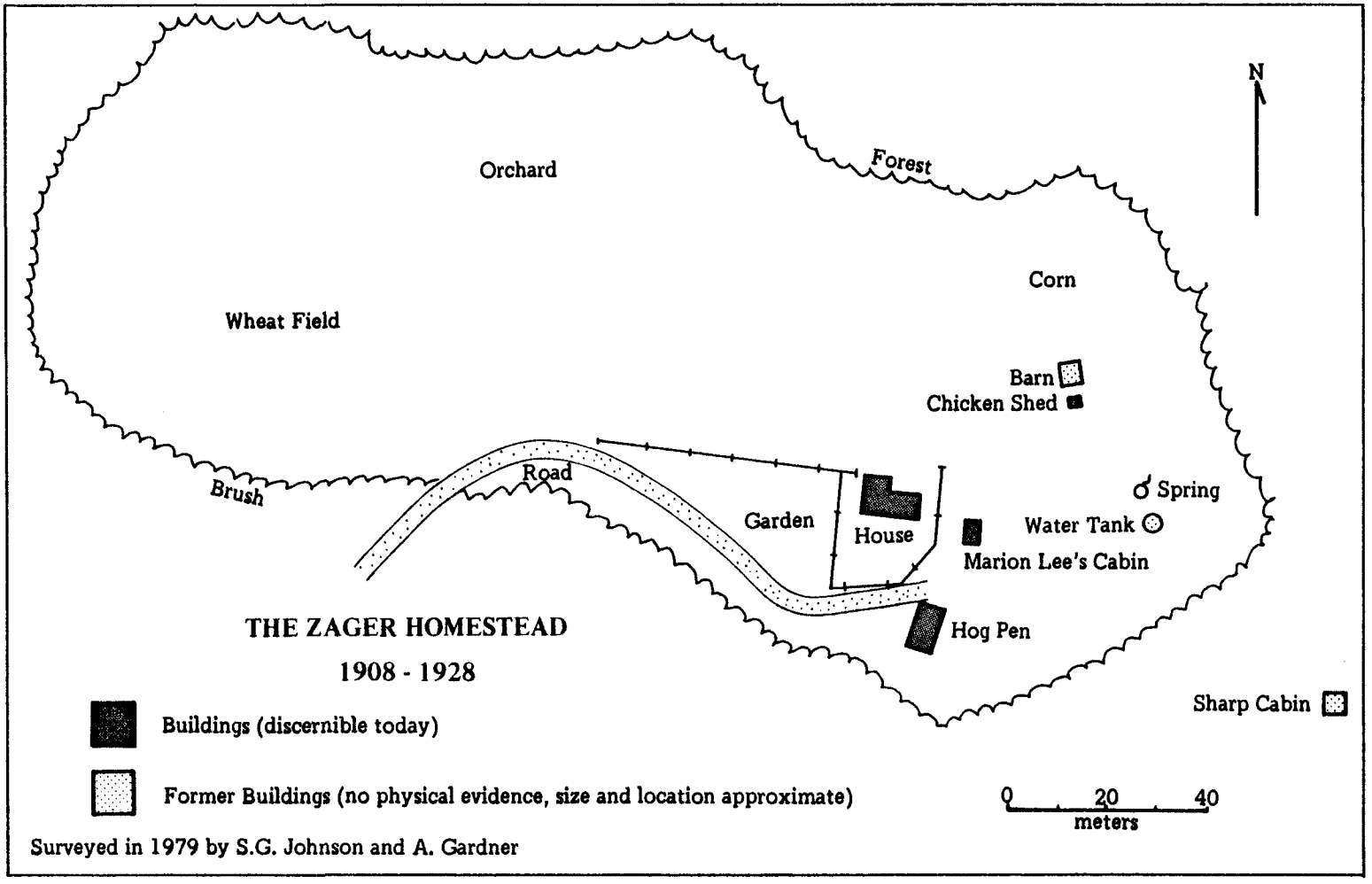
In May 1905, George and Annie received title to their 160-acre land, but by this time they had already divided the property in half and sold 80 acres to Francis Shepard in Spetember of 1904. This property is not now part of the preserve and will not be considered again in this thesis. In October 1917, largely due to problems with Bill Kiefer, Loriston's new partner, the George Lovejoy family sold the remaining 80 acres, including the homesite, to the Sinclairs of Fort Bragg and moved on.

The Zager Homestead. The 139.66-acre Zager homestead was situated on the north side of the Elder Creek watershed's southern ridge and was described as an opening that was originally filled with whitethorn in an area of "open range" (See maps 8 and 14). The vegetation surrounding the opening today is large black oaks and young, sizable fir trees, but was primarily manzanita and whitethorn brush at the time of settlement. This isolated and sloping site received water from several springs.

The Zager family arrived at this opening in 1908 and bought squatter's rights from a squatter named Wickershan who built the original cabin. During their years of occupance, up to ten people resided simultaneously on the claim (See table 2). They were Frank and Eva, their five children, four of whom were born on the claim, and Eva's parents, Mary and D. J. Sharp who are buried on the claim. For several years around 1917, a man named Marion Lee also lived with the family to assist in the work. Aside from staples purchased from the Branscomb Store, the Zager family relied on the homestead for their livelihood.

Frank and Eva received title to the land in 1919 but once title was obtained, the family maintained only intermittent residence on the claim, as they moved to other sites in the area where "split stuff" work was available. They did, however, continue to raise a garden on the home-

MAP 14


N
Orchard
Forest
Corn
Wheat Field
Barn
Chicken Shed
Brush
Road
Garden
House
Spring
Water Tank
Marion Lee's Cabin
Hog Pen
THE ZAGER HOMESTEAD
1908 - 1928
Sharp Cabin
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
0 20 40
meters
Surveyed in 1979 by S.G. Johnson and A. Gardner

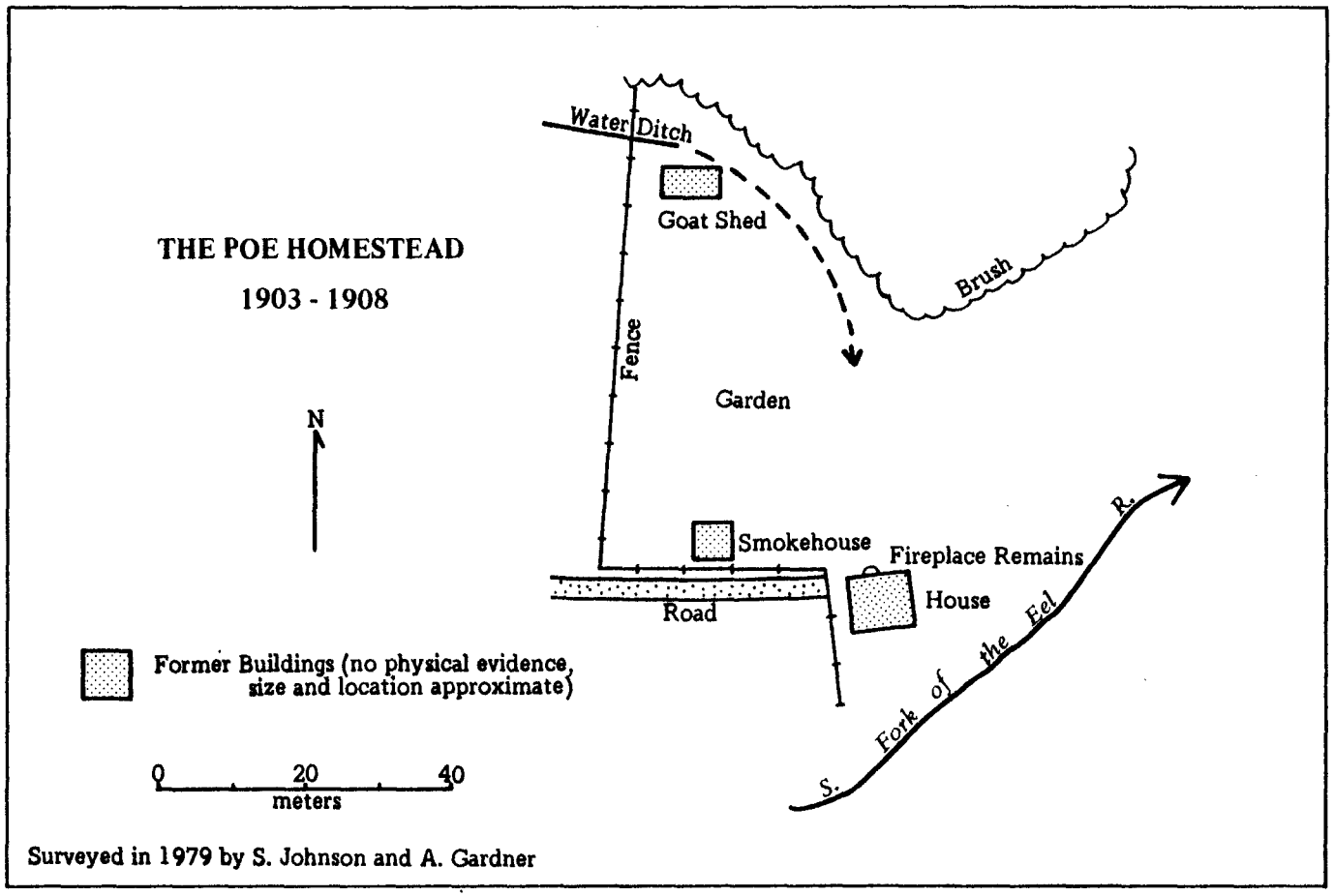
stead until they sold the claim to James and Emma Henderson in 1928 for $900.

The Poe Homestead. The Poe family arrived in the Eel River area about 1903. By this time, many of the prime spots along the Eel River had already been taken so the Poes did not have many sites to choose from. They did, however, find an open 160-acre claim along the river that had previously been inhabited by a squatter for a few years around 1885 (See map 8). This spot possessed good redwood timber on the south side of the river and a few acres of flat land on the north side. This flat land was the eastern edge of a large, open meadow, the major portion of which was located on the adjacent claim to the west that is not part of the preserve (See map on page 17).

As there were no improvements when they arrived, the Poes camped by the river in 1903 and began work on their homestead. Soon they had a good garden and were able to move into the small house they had built (See map 15). From this time until 1903, 8 to 10 people resided year-round on the claim. They were Henry and Emma Poe, their five children, Emma's sister, Eva, and periodically other relatives (See table 2).

Land use on the Poe claim was limited by the physical restrictions of the site itself. The little area of

MAP 15


THE POE HOMESTEAD
1903 - 1908
N
Water Ditch
Goat Shed
Brush
Fence
Garden
Smokehouse
Fireplace Remains
House
Road
S. Fork of the Eel R.
Former Buildings (no physical evidence, size and location approximate)
0
20
40
meters
Surveyed in 1979 by S. Johnson and A. Gardner

flat land allowed for a modest garden but not much else. Goats could browse on the brush above the homesite, but even the Poe livestock depended upon grazing in the pasture owned by their neighbor, Abe Snider, who owned the adjacent 160 acres to the west, outside of present preserve boundaries. Although the claim itself did not offer abundant water to the Poes, their neighbor to the west did. He developed a ditch-flume system that carried water from Jack O'Hearts Creek to the west and ran the ditch all the way to the Poe garden. The Poes obtained drinking water from a small spring by their garden.

The claim did possess good redwood timber on the south side of the Eel River, that was suitable for producing "split stuff." Henry Poe used some of these materials in building his house, goat-shed, smoke house, and fences. He may have also sold some of these products or used them in trade for supplies at the Branscomb store. The impact of Henry's split stuff production was minimal, however, as he could only have worked up a few trees in the length of time he was there. Henry Poe was also a butcher and supplemented his income by butchering hogs for the Branscomb Store. In addition, he and his son, Charlie, were accomplished hunters and trappers and were able to supplement the family food and finances through these activities.

Henry and Emma Poe obtained title to their 160-acre homestead in December 1908, but moved away at about the same time, allegedly because of the isolated location and difficulty in making a living there. The claim was sold in August 1909 to William Blosser.

Sprague Field. The land use history of this field (See map 8) began earlier and separately from the two claims that received title to it under the Homestead Act. Therefore, a brief, separate description of its earlier history is warranted here.

This flat, open area of about 10 acres attracted Charlie Elder, Stephen and Princetta's son, who began to work it shortly after the family's arrival in the area, about 1885. He cultivated both the upper, large flat and the narrow flat area by the river among the white oaks, and grew hay, fenced, built a small cabin and may have even planted a few apple trees. All of these efforts at "proving up" were somewhat cosmetic, however, as Charlie actually continued to live with his parents, first at Chokecherry Flat and, after 1892, at Oak Grove.

Charlie ceased to work this field and left the area in 1898 to look for a more suitable homestead site. He felt that the Sprague site did not possess several resources he felt were necessary for a satisfactory homestead, namely adequate water from a source above the field

(to allow for a gravity flow water system) and some good redwood timber to provide building materials.

After the Davis family had settled along Elder Creek in 1898-9, they realized that part of their claim crossed part of the Sprague field. Although Shorty never cultivated his part of the field, he did cut the wild "club-headed grass" that grew on the lower portion by the river for feed for his cow.

The northern part of the field was part of the Loriston Lovejoy claim, but was not the site of intensive land use during his ownership, since most of his activities were centered at Wilderness Lodge. During the years 1905 to 1917, Loriston and George Lovejoy did raise a few crops of hay on the field and pastured some stock there.

Eventual ownership of this field reflected ownership changes of the two properties that controlled it. The Davis portion was sold with the rest of the claim to J. E. Rayner in 1915 and eventually ended up in the hands of William Kiefer. The Lovejoy portion also came into Kiefer's ownership when he bought Wilderness Lodge in 1917.

The name "Sprague Field" came from the proximity of this field to Francis Sprague's cabin on the opposite (east) side of the Eel River (See page 160). Francis Sprague never had title to any portion of this field.

Major Homesteads: Development and Land Use

These seven homesteads: Walker, Elder, Davis, Wilderness Lodge, Horseshoe Bend, and Poe, all in the Eel River Corridor, and the Zager Homestead, outside the Eel River Corridor (See map 8), dominated the occupance and land use in those areas of the preserve most affected by homesteading. The Eel River Corridor, in particular, was the area of greatest intensity and areal extent of homesteading land use. Since the patterns of ownership, roads, clearing and development seen today are essentially the patterns established at this time, certain aspects of these settlers' land-use practices are important to consider in detail. These aspects are human population size, improvements, changes in hydrology, clearing and cultivation, domestic animals, and sources of livelihood. The following discussion identifies the significance of these factors and provides important details for each of the homesteads.

Human population. Table 2 describes the population size, location and variation over time, for both the entire area and the individual homesteads. Aside from being of importance itself, variations in population history affect the type, intensity and impact of land use. Fluctuations in numbers also have other important implications. Seasonal occupance suggests some inadequacy of the site, most

likely in its ability to provide complete sustenance to the homesteading family. Periods when population was absent may indicate changes in land use, settlers' expectations, perceptions of what is considered a resource, as well as failures in crops or in existing systems of finance. All of these variations help to delineate major settlement periods. The fluctuations shown in table 2 and the possible reasons for them, will be discussed in "Site versus Settler--What Accounts for the Differences?" later in this chapter.

Improvements. Maps 9 through 15 show the layouts of each of the major homesteads. The sum total of all improvements on a homestead, and their location in respect to one another and the physical features of the site itself, suggests much about the settlers and their land-use activities. For example, expectations, life style, and livelihood, both anticipated and actual, are often evident in the layout itself. But even beyond what can be interpreted from such patterns, the details shown in the figures regarding buildings, fences, roads and trails are important aids in interpreting the faded settlement patterns that persist in the landscape today, and as such, warrant a brief individual consideration.

1) Buildings. The type, size and style of construction of buildings indicates certain cultural charac-

teristics of the people who homesteaded and the type of land use and life style they anticipated. Often, economic resources can be interpreted from the building materials and the fixtures employed. A good example of both of these is the two-story addition George Lovejoy made to his house in 1905, shown in figure 9. Its architecture is typical for the mid-1800's in New England and, although it is out of place and out of time in the backwoods of Mendocino County, its style reveals something of the life-style and dreams the Lovejoys may have anticipated. The actual building of this elaborate addition, employing materials that had to be purchased, suggests an improved economic condition perhaps made possible by the actual and anticipated growth of the boarder business (See page 146).

The size of barns and storage facilities indicates both expected and actual grain yields as well as numbers of stock. For instance, George Lovejoy's barn could hold 20 tons of hay and the Walker barn could hold 12 tons. The fact that both barns were filled each year speaks both for the success of the harvests and the needs of their domestic stock. Additions to such buildings suggest increased expectations and perhaps degrees of achieved success, possibly the case when George Lovejoy built his second, larger barn around 1900 and tore down the original barn in the field; while abandonment, like at the Walker's and Poe's, indicates either failures or decreases in ex-

pectations. These questions will be further explored in "Site Versus Settler."

A second reason that the layout of improvements is important is that, in many of these areas, as in the case of the Walker, Poe and Loriston Lovejoy homesteads, there are no remnants of the original buildings today, but the site has been altered due to soil compaction, and the presence of imported rocks used for building materials. These, and other possible disturbances, tend to lead one to erroneous interpretations of the environment that are easily avoided given basic information on the location, size, number of improvements, and periods of building and abandonment.

2) Fences. The location, design of construction, and materials used in fences are important for two reasons. First, fences indicate important areas of land use such as the boundaries between fields, garden, grazing areas and homesites. Many times when no other information is available, the interpretation of fence pattern yields much insight into a homestead. Another reason for their importance is that physical remnants of many of these fences are completely absent today and yet they have left subtle marks on the landscape that can be more accurately interpreted if their former location is known. Such factors as seed dispersal by perching birds along

fence lines, small rodents traveling through untended vegetation along fence lines and carrying and storing seeds, animal trails broken at fence lines, variations in present or former deer browse along fence lines, accumulations of wind-borne seeds along fence lines and successful seedlings once sheltered by a fence--all have effects on the vegetation which can be better understood once it is known that a fence was there at a particular time. The row of mature Douglas fir trees, growing along the old fence line shown in figure 14, illustrates the role fences may have in germination and seedling survival.

Maps 9 through 15, of the layouts of the individual homestead sites, shows approximate locations of fences for each homestead. All of the fences built on the preserve employed redwood in one of two styles. The first was the common redwood picket fence whereby 6-foot split pickets were sharpened at one end and driven one foot into the ground. These were attached by a slatted board running horizontally along the top. The second style was a split rail fence where the red posts were in pairs, slightly separated and the cross pieces stacked loosely between them. Figure 9 shows both styles of fences. The homesteaders did not use any wire in their fences, so the fences seen on the preserve today, which are redwood pickets strung together with wire, were all built later.

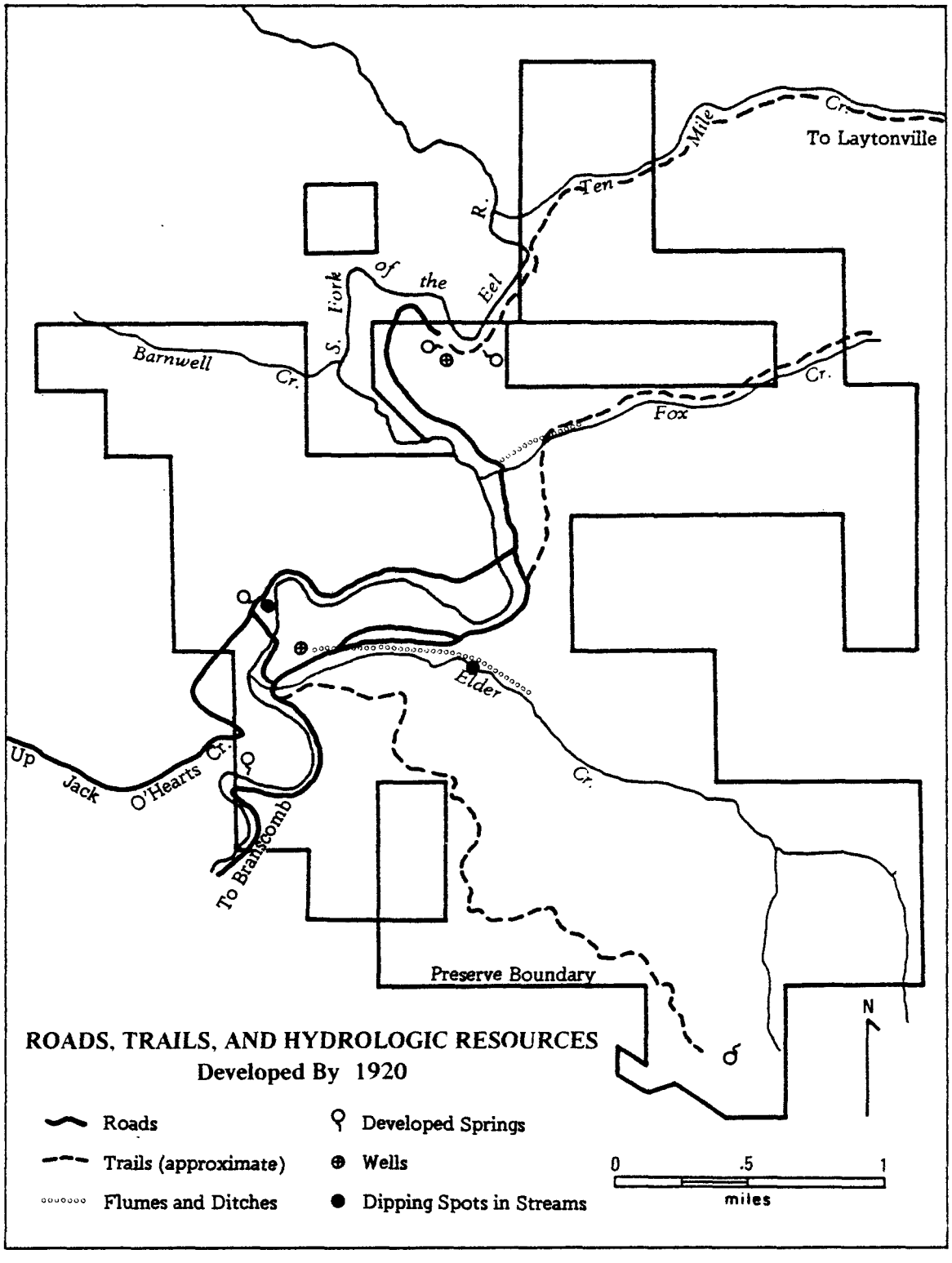
Figure 14. This photograph, taken near Sprague Field (See map 8) in the fall of 1978, shows how fences may affect seedling survival. This row of Douglas fir trees had obviously been sheltered by an old fence that is still evident in the photograph.

3) Roads and trails. The network of roads and trails in an area not only depicts the flow of commerce and travel but also the avenues of man's impact. Effects associated with road building itself persists long after the roads were abandoned and hidden by nature. Changes in subsequent vegetation may be brought on by the removal of the overburden, compaction, and the dispersal of weed seeds, have all altered the nature of the sites. Although subsequent plant growth may disguise this impact, such routes are important to document in order to avoid erroneous interpretations later.

Once established, roads and trails had a continued effect on routes of travel long after their original intended use ceased. For instance, today abandoned roads are used as hiking trails and even wild animals such as deer and bear will follow an available road or trail.

Map 16 shows the roads and major trails built by the original settlers. The first road built into the area reached "Chokecherry Flat," the Elder's first claim eventually taken over by their daughter, Bertha, and son-in-law, William Walker, by way of Jack O'Hearts Creek to the west of the Eel. This road was built about 1886 by Stephen and Charlie Elder. Within a year or so, they had extended the road down to their grain field on the next large river terrace (See map 3). The road network

MAP 16


To Laytonville
Ten Mile Cr.
R.
S. Fork of the Eel
Barnwell Cr.
Fox Cr.
Elder Cr.
Up Jack O'Hearts Cr.
To Branscomb
Preserve Boundary
N
ROADS, TRAILS, AND HYDROLOGIC RESOURCES
Developed By 1920
Roads
Trails (approximate)
Flumes and Ditches
Developed Springs
Wells
Dipping Spots in Streams
0 .5 1
miles

continued expanding to reach each of the other major homesteads within a few years of their settlement dates, with the last major section of road being built to Horseshoe Bend about 1896. The presently-used road down the east side of the Eel River was opened from the Elder's ("Oak Grove") in about 1893, and the road from there to Wilderness Lodge within a few years after. Although an earlier bridge had been built across Elder Creek, new stringers were installed and the bridge rebuilt in 1904. The large, hand-hewn, stringers under the present bridge may possibly be the same ones because no record of later replacement has been found.

The roads were usually built in the winter and spring when the ground was wet. Although many tools were used, the prime method for digging the road bed was by pulling a plow behind a team of horses. Today, many of the original roads are still visible, but those that have been abandoned are rapidly succumbing to nature's processes of obliteration.

Changes in hydrology. Man's manipulation of hydrologic systems for domestic use is also important. If a capture technique was efficient it would diminish or eliminate the short-term water supply to downstream areas. On the other hand, these developed water sources, even when abandoned, may continue to provide water to

areas that did not have water previously, thus altering their character. The removal of water from areas, such as the draining of wet or marshy spots, may significantly alter their character after the actual time of habitation. The development of springs and water storage and transporting devices also reveals the requirements and technology of the settlers at that time.

Map 16 depicts the hydrologic resources utilized and developed by the early settlers. The most basic water resource was a dipping spot in a nearby stream. Usually the settlers would make it deeper by digging it out and removing rocks, thereby allowing water to collect in the depression. The Davis family obtained all their drinking water from Elder Creek in this fashion. The Walkers obtained household water similarly from a 4-foot deep hole dug in the stream behind their house. But this stream went dry in August, requiring the family to carry water from a spring behind the barn.

The second basic water resource developed by the early settlers was natural springs. These seeps or wet areas were developed by digging down into them, not only providing a depression for water collection but also exposing the water-bearing strata, which allowed water to concentrate rather than to disperse among rocks and plants.

Such a spring was the only source of water utilized

by the Zagers.

Located in the gulch behind their house, as shown in map 14, the spring was dug out, boxed in, and a hand pump was installed to pump the water from the spring to a storage tank above. From the tank the Zagers carried water to the house and from there it flowed to the garden via a pipe that came out by the chicken yard. The spring in the gulch and remnants of pipe can still be found.

Maps 9 and 16 show that the Walkers also relied on water from springs but in addition, developed a small gravity flow flume system, utilizing 6-inch by 8-foot redwood logs with a chopped-out channel. Remnants of this system can still be found today. George Lovejoy at Horseshoe Bend also utilized spring water. A good spring was found, high on a hill to the northwest of the house. It was dug out and water flowed by gravity into two storage tanks. From these tanks, water flowed, again by gravity, through pipes down to the house. George Lovejoy also developed a gravity flow system from Barnwell Creek on the west side of the Eel River.

Although not a common practice, two settlers did dig wells to provide for domestic water: George Lovejoy at Horseshoe Bend and the Elders at Oak Grove. These wells were hand dug and lined with wood. Water was obtained by dipping at Oak Grove but George Lovejoy installed a hand pump in his kitchen to obtain water from his well.

This same pump is still in use. The Elder well was successfully located by water witching and the house was later built next to the well.

The most elaborate water systems developed by the early settlers were extensive ditch and flume systems capable of carrying great quantities of water relatively long distances. The Elders' flume was particularly notable due to its size and length (approximately 1 foot square by 3/4 mile long), but Loriston Lovejoy at Wilderness Lodge and Shorty Davis also developed flume systems. The Elder flume was built from a spot on Elder Creek called "the falls," approximately one mile upstream from the house. A log dam was built at this collection site (capturing almost all the summer flow of water) and the flume system, composed of alternating ditch and 12-inch square wooden boards, carried water down to the homesite where it was used to irrigate their large garden.

Shorty Davis also built a flume and ditch system on Elder Creek. It is not clear whether Shorty was able to use water from the Elder flume initially, but eventually he went up Elder Creek fifty feet above the Elder log dam and built his own dam of sandbags. Shorty then built another flume and ditch system paralleling the Elders' to carry water from this dam to his garden. Below the garden, Shorty's ditch emptied into the Elders', as he apparently allowed excess water to continue on. The two flumes are

clearly visible today in the area of the house and garden but, upstream, signs of Shorty's flume are gone.[4]

All the water for Wilderness Lodge came from Fox Creek, via a flume. Loriston Lovejoy built a log dam on Fox Creek (shown in figure 15) to capture water for his flume that was built along the north slope of the stream which then continued into a ditch down to a site above the orchard. From here, the water went back into a wooden flume which ran down behind the house. This flume was made of two 12-inch wide boards nailed together into a "V." The ditch along Fox Creek is still readily visible along with remnants of pipe added in later years. All evidence of the wooden flume in the meadow is gone. Loriston Lovejoy later added a second, smaller flume that was made of 6-inch wide boards nailed into a "V," that he ran from farther up the creek down to the house in order to bring cold water to the house in the middle of summer. There are no signs of this system today.

Aside from the dams and ditch systems of Elder, Lovejoy and Davis, the overall impact of the settlers' hydrologic developments were localized, affecting only the

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[4]This account was steadfastly given by Pearl (Davis) Graves, one of Shorty's daughters, but I have some question as to its accuracy since no sign of Shorty's flume could be found upstream much beyond the homesite. Another reasonable possibliity is that Shorty took water out of the Elder flume far enough above the garden site to provide the elevetion required so that Shorty's flume could enter

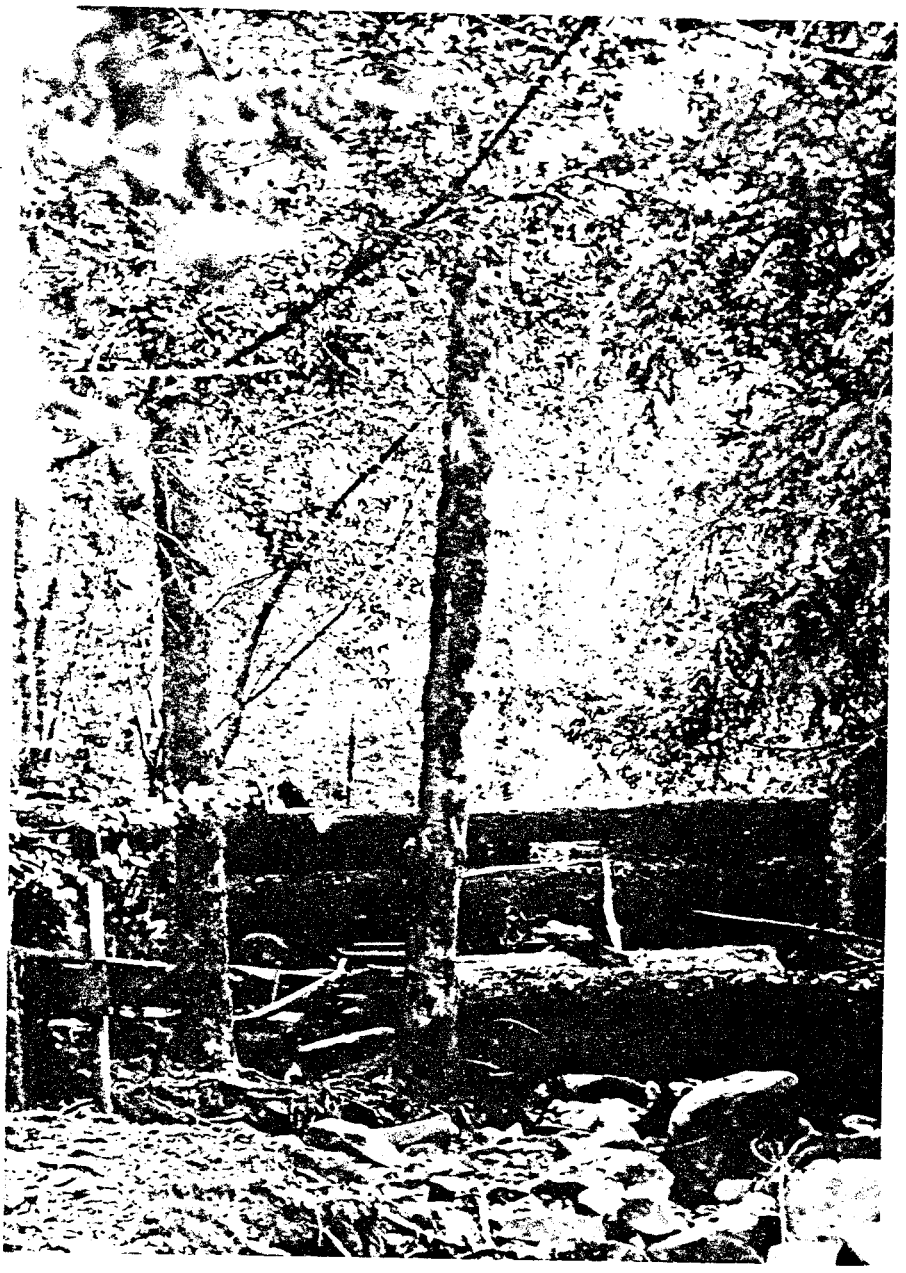

Figure 15. Loriston Lovejoy's log dam on Fox Creek about 1906.

areas immediately surrounding them. And, when abandoned, their impact was short lived because, without use and maintenance, the systems rapidly deteriorated and stopped collecting and carrying water. As a result, former dipping spots cannot be found now, springs no longer collect water, and the Elder well is unusable. Only the large ditches of the Lovejoy and Elder flume systems are still readily visible and even they no longer carry water.

Besides the problem of obtaining it, in some areas, water also presented a problem when it saturated soils in other desirable farming areas. In such instances the water needed to be removed. In two of the large meadows used for dry grain farming, signs indicate that the water was channelized and directed away from the field, thus lowering the water table. At Wilderness Lodge (See figure 3), this drainage is deep and linear, clearly intended to drain water. In the lower Walker Meadow, one source[5] describes channelizing the water through the field.

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on the uphill side of the garden (for irrigation) rather than the downhill side like the Elder flume. This alternative is logical, supported by evidence in the field, and was also mentioned by Hattie (Lovejoy) Clark, George Lovejoy's daughter.

[5]Mark Walker, sone of homesteader William Walker. Personal interview, November 1975.

This channelization is somewhat obscured today because water has since broken out of the ditch and eroded a new channel.

Although less obvious, the deep and linear nature of streams flowing through Sprague Meadow, South Meadow, and Horseshoe Bend Meadow suggest that some channelization may have occurred there also. Even though long abandoned, these drainage ditches have continued to carry water and, because of subsequent erosion, are probably deeper today than originally, perhaps affecting the water table of the surrounding areas.

The availability of an adequate, developable water supply for domestic and agricultural purposes not only added to the desirability of a homesite but also may have influenced which sites supported longer inhabitance. Of the major homesites, the Walker, Davis and Zager homesteads were least well endowed with water and were the first sites where residence was abandoned. Shorty Davis did eventually develop Elder Creek water for irrigation but the Zagers and Walkers, who exploited every source available to them, were still left with a rather sparse supply. The importance of water to the inhabitance of a site will be further discussed in "Site or Settler--What Accounts for the Differences?" later in this chapter.

Clearing and cultivation. Maps 9 through 15 also

affair when all the families would collect, work all day at clearing, share a big meal for dinner, and party all night.[7] In some fields, like the Elder field, some trees were removed even though it required some imagination to remove the old stumps. Stephen Elder rallied to the cause by inventing an ingenius stump puller utilizing leverage and a team of horses.[8]

Even though these fields have not been cultivated for many years, they look as if they had been farmed recently because recolonization by woody plants is extremely slow. There is some encroachment around meadow edges and some manzanita regrowth in the Lower Walker field, but otherwise they remain open. This raises questions as to the origins of these meadow areas, as discussed in chapter 2.

Other details concerning cultivation practices that are important to this study includes information as to what crops were raised, significant not only in revealing what the homesteads were able to produce but also in identifying possible sources of seed for the non-native plants now found in the homestead areas and elsewhere in the preserve. Similarly, details on methods of cultivation are signifi-

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[7]Mark Walker, son of homesteader William Walker. Personal interview, November 1975.

[8]Robert Ettner, History of the Northern California Coast Range Preserve, 1884-1931 (manuscript, available at preserve headquarters, 1965).

cant as they reveal the type and regularity of agricultural disturbance. The tools used, how often employed, and other miscellaneous farming practices, such as fertilization, also had their effect on the land and are important to consider.

Certain agricultural practices were common among all settlers. Hay and grain for stock, usually wheat, rye, vetch, and redoats, were raised on the claim and were dry farmed (planted in the fall and harvested in July). After harvest, stock was turned out on the fields to feed on the stubble. At Horseshoe Bend "wild hay" (species unknown) was also grown for the stock by the lower water course near the house (See map 13). Shorty Davis also used a wild grass for stock, as he harvested "club-headed grass" (species unknown) from the lower part of Sprague field. For the most part, the grain fields were not irrigated or fertilized, although at Horseshoe Bend, horse and cow manure was periodically spread on the field. The grain was used for animal feed, and planting seed, and not for human consumption. Some crop rotation was practiced either by rotating the crops themselves, or cropping one year and leaving fallow for one or several years. All of the grain fields were said to be very productive. Horseshoe Bend, for example, may have produced as much

as 2 tons per acre.[9]

Plowing about a foot deep by a plow, pulled by a two-horse team, was the most common method of cultivation. Seed was then broadcast by hand. The Zagers additionally harrowed the soil and leveled their field. If rocks were plowed up, they were thrown on a horse drawn drag and dropped on one of several piles of rocks in the field. These piles are still visible today in the Elder field and South Meadow.

Most of the settlers raised big vegetable gardens with a great variety of vegetables (except the Zagers who mainly grew corn). These gardens were rotated (sometimes by changing where certain vegetables were grown and sometimes by completely moving the location of the garden), irrigated, fertilized by horse (and sometimes chicken) manure, and weeded by hand. Chemical fertilizers or weed killers were not used. Most of these gardens were very productive and met many of the settlers' basic food needs. The Elders and Davises even had enough extra vegetables to sell in Westport, and both Lovejoy families were able to feed their many summer boarders.

Seed for vegetable gardens was generally obtained locally, either in Branscomb or Westport, although some,

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[9]Hattie (Lovejoy) Clarke, daughter of homesteader George Lovejoy. Personal interview, August 1978.

like Loriston Lovejoy, obtained vegetable seed from mail-order seed companies. Grain seed was usually purchased in Laytonville or Covelo. Perhaps the seed bought in Laytonville was actually raised in Covelo since Covelo was the major regional supplier of grain and flour. Once grain cultivation was started, the Walkers, Elders and Lovejoys threshed their own grain to provide planting seed.

Domestic animals. Several aspects of animal husbandry are important to this land-use study. First, the types and numbers of stock are important as they provide information not only on the availability of work and food animals on the homesteads, but also because the impact stock would have on the environment is a function of their type and numbers. Of similar importance are methods of feeding and housing stock. This information, for each of the homesteads, is presented in table 3 and locations of grazing areas are shown in maps 9 through 15.

The impact of controlled grazing, or letting stock roam, may have been quite extensive during the homesteading period. For example, early photographs of Horseshoe Bend (figures 13 and 16) reveal that the hills and area north of the barn and blacksmith shop was completely denuded of vegetation. This area was called "goat hill" because of the dozen or so angora goats which the Lovejoys kept for

TABLE 3

TYPE, NUMBERS, USE, FEED, AND HOUSING FOR HOMESTEADERS' DOMESTIC ANIMALS

TYPE	NUMBERS AT HOMESTEAD SITES							USE	HOUSING	FEED
	Poe	Walker Chokecherry Flat	Elder Oak Grove	Davis	L. Lovejoy Wilderness Lodge	G. Lovejoy Horseshoe Bend	Zager			
Horses	1 - 3	3 - 4	3 - 4	1 - 2 + (8 draft)	3 - 5 + (4 - 5 draft)	6 - 8	13	work saddle	Barn	Hay, rolled Barley Pasture *1
Donkeys	0	0	0	0	4 904 0	rent 2-3 in summer	0	pack animal	Barn	Hay, Pasture
Cows and Calves	0	2 - 4	6av.	1	0	12	1	milk meat	Barn Loose	Hay, Pasture *2
Hogs	12 doz.	24av.	2 - 3	2 - 3	0	10-12 sows 40-50 total	30 - 40	meat	Loose Shed,Pen	Loose, Acorns *3
Chickens	12 - 24	60 - 84	36 - 48	12 - 24	48 - 72	48 - 96	25 - 30	eggs meat	Shed	Wheat, Grain *4 Scraps
Turkeys	0	0	0	0	2 - 6	0	0	meat	Shed	" "
Geese	0	12	8	0	0	0	0	meat	Shed	" "
Ducks	0	0	0	0	6	6 - 12	0	down meat	Shed	" "
Goats	100 (for 1 yr.)	1 (pet)	0	0	100 angora	12 - 24	2	eggs mohair	Shed	grain, browse
Dogs	5	2 av.	1	1	1	2 - 3	1	pet	Loose	scraps
Cats	0	0	1 - 2	0	0	2 - 3	1	mouser	Loose	scraps, hunting

Comments

*1 George Lovejoy's wintered on the Redemeyer Ranch near Laytonville

*2 plus clover at Wilderness Lodge.

*3 plus Jerusalem artichokes at the Elder's.

*4 usually purchased

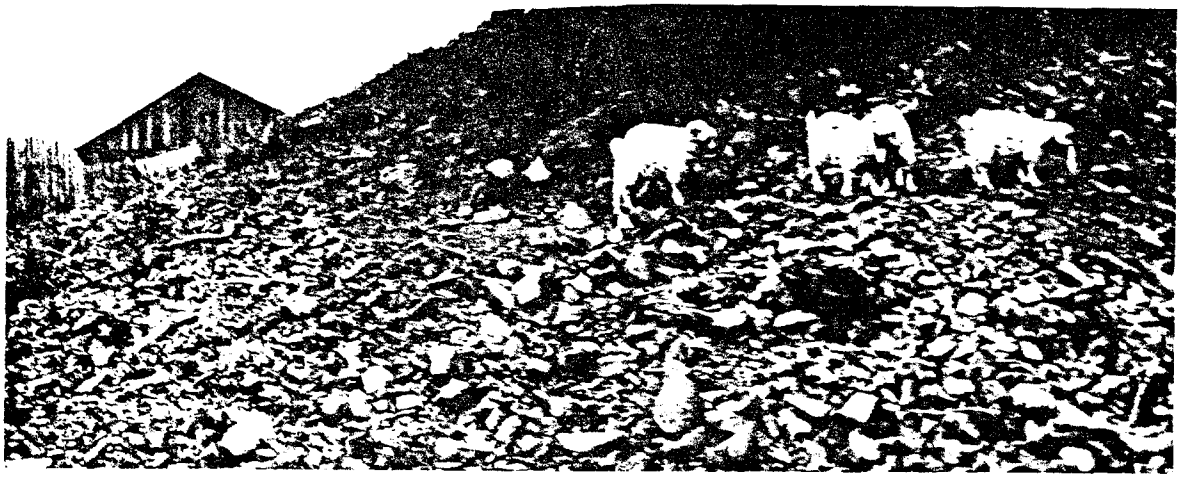

Figure 16. Angora goats on "Goat Hill" at Horseshoe Bend about 1906. The photograph was taken looking west towards the barn that is visible to the left of the picture. Although the settlers describe this area as open and unvegetated when they arrived, grazing pressure by animals such as these, certainly affected their pasture areas.

neighbor Helen Wheeler, fed here. The goats were also allowed to roam on the other hillsides surrounding the field and homesite. These areas were similarly scant in woody vegetation. The Lovejoys at Wilderness Lodge also had about 100 angora goats, which they let roam on the brushy hills north and northeast of their house. The homesteaders also allowed other types of stock to roam. All settlers let their herds of hogs range freely. George Lovejoy's herd of a dozen cows also ranged freely and were sometimes found as far up river as the Red Bridge, six miles south of Horseshoe Bend, and Ten Mile Creek, 3/4 mile to the north. In addition to pasturing stock on his own claim, George Lovejoy pastured his stock for the winter on a large ranch, the Redemeyer Range, in the Laytonville area. Horses and cattle were all brought back in the spring.

Most livestock obtained by the settlers was bought or traded for from neighbors or purchased in local towns. Covelo, however, became the major supplier of horses.

Sources of livelihood. As can be seen by the preceding discussions and figures, all of the homesteaders raised productive gardens and animals to meet many of their food needs. Yet, all of the homesteaders still needed some way to obtain cash in order to purchase the clothes, shoes and staples that could not be produced at home. In

mitigating this problem, two distinct groups emerged: those who could neet these needs while remaining on the homestead year-round, and those who worked for wages during the summer and only maintained seasonal residence on the homesteads.

For William Walker and Shorty Davis, seasonal residence became the pattern. Shorty Davis, who was an accomplished woodsman, incurred the least hardship for his family as he was often able to work in nearby areas, contracting to peel tanbark or produce "split stuff" and was therefore able to live at home most summers. Sometimes, too, his hired hands would board with his family. William Walker's residence was broken not only by his seasonal move to work in coastal tie and tanbark campus but also, between 1898 and 1903, his entire family moved away from the claim so that the children could attend school. After 1903, when the Elder Creek School opened (See page 165) and the family moved back to the claim, Bill Walker continued to work out during the summers. Even Stephen and Princetta Elder worked out, in the coastal tie and tanbark camps, when they lived on "Chokecherry Flat" from 1885 to 1892. All of these families were also able to bring in some extra cash during the summers by selling excess vegetables and eggs to mill workers in Westport and Dehaven on the coast.

Those homesteaders who were able to maintain year-

round residence, met their cash needs in a variety of ways. The Zager family, as nearly as this author can surmise, survived by "tightening the belt" and depending on the stock they raised, on what they could hunt, and on a lot of beans for meals. Henry Poe was able to earn some money by making "split stuff" products from the redwood timber on his claim, trapping and selling furs through the mail to an Eastern furrier, and, since he was a butcher by trade, he could also periodically work for John Branscomb and do the butchering for the Branscomb Store. Stephen and Princetta Elder, who had mixed farming experience in Iowa before coming to California, brought in cash with their large and successful truck garden, chicken products, production of blacksmithing charcoal, and by producing maul heads from live oaks on the claim. These maul heads were cut from young, straight, 6-inch diameter, live oak trees that were cut into 12-inch lengths and could then be fastened on a handle and used as a mallet. They would bring 25 cents each at the coastal tie and tanbark camps.

The Lovejoys initially brought in needed cash by producing shakes and fence pickets from the redwood on the claim (The wood supply was primarily timber located on the west side of the Eel River slightly upstream from the swimming hole); these could be sold in Covelo. Shortly before the turn of the century, however, an event occurred that changed their finanical situation. Two men camping

below Horseshoe Bend were rained out and they ended up at George and Annie's and asked if they could cook breakfast. Annie not only let them stay on, she also provided them with three meals a day for the rest of their vacation. When these men returned to the San Francisco Bay Area, word spread about their stay at Horseshoe Bend and, before long, new and returning guests provided both Lovejoy brothers with a summer livelihood. Thus, from the early 1900's, first at Horseshoe Bend and a few years later at Wilderness Lodge, these two establishments took in summer guests and operated a "Boarder Business" that provided room and board for summer vacationers seeking the recreational potential of the Eel River country for hunting, fishing, swimming, dancing, hiking, boating and relaxing. The very productive gardens and stock of the homesteads provided for most of the guests' food needs and, in turn, "a dollar a day for room and board"[10] provided both Lovejoy families with an income.

Most guests were from the San Francisco Bay Area and included such groups as the baseball team, The San Francisco Seals. Guests would reach the resorts by a one-day train ride from San Francisco to Sherwood, northeast of Willits (See map 7). At Sherwood they were met by the

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[10]Robert Lovejoy and Hattie (Lovejoy) Clarke, children of homesteaders Geroge and Annie Lovejoy. Personal interviews, June 1974 and August 1978, respectively.

Lovejoys and a wagon and would be taken to the homesteads on the second day. Later, when the rail was put through to Eureka, guests would be met at Longvale, between present day Laytonville and Willits. George Lovejoy eventually got a model "T" Ford, and Loriston Lovejoy a Sears and Roebuck car, and were then able to make the approximately 70-mile trip in one day instead of two.

Serving thirty guests for a month to six weeks each at Horseshoe Bend, and fifteen to twenty guests for two weeks each at Wilderness Lodge throughout the summers, the boarder business continued at Horseshoe Bend until the property was sold to the Sinclairs in 1918. Wilderness Lodge continued its business through Kiefer's ownership, until the original house and most of the outbuildings burned down in 1937 (See chapter 5). Many of the old timers interviewed point to the advent of the automobile and motorized vacations as the reason for the decline of this type of vacation, for no longer were the guests satisfied with staying in one spot once the car enabled them to travel comfortably and quickly to many areas. Another reason for the departure of the Lovejoy families was personal problems with Bill Kiefer who bought in as a partner in the Wilderness Lodge Improvement Company in 1916. Within a few years, both Lovejoy families had left the area.

Major Homesteads: Environmental Resources Utilized

In addition to the developments and agricultural land-use practices of the homesteaders, certain environmental resources were also utilized. These involve 1) Attitudes about and uses of fire, 2) Wood use, 3) Hunting, fishing, and trapping, 4) Feral animals, and 5) Useful and noxious native plants.

Attitudes about and uses of fire. The settlers were acquainted with fire both as a threat and a tool. They knew their environment as one manipulated by Indian burning before them and, like the Indians, many of the settlers used fire to manipulate their environment.[11] The usual reason for burning was to improve browse for stock, deer, and other game by encouraging the new growth of shrubs and young oaks. Even the huckleberry crop was improved by regular burning. In one account, burning practices were described as common, "Every settler would burn a little patch,"[12] and although this comment is not entirely true, seeing as the Zagers did not burn, it does serve to illustrate how accepted such burning practices

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[11]Of the settlers interviewed, the Lovejoys and Walkers all used fire. No date were available on the Elders and Davises. The Zagers definitely did not burn.

[12]Lucille (Lovejoy) Voight, daughter of homesteaders Loriston and Lulu Lovejoy. Correspondence, February 1977.

were. Both Lovejoy families maintained a regular burning schedule of once every three years for the brush lands surrounding their homesteads, as shown in map 17. This area includes the ridge separating the two homesites. Figures 3, 4, 5, and 12, photographs of the Lovejoy homesteads in the early 1900's compared with recent photographs taken from the same vantage points, reveal how much more brushy and less forested the hillsides were during the homesteading period. This effect was probably caused by burning. In fact, in figure 3, the hillsides actually look like they had been recently burned.

The settlers also knew fire as a threat. Bill Walker, emulating the fire practices of his neighbors, almost burned the bridge across the creek near his house when his fire got away (probably sometime between 1903 and 1906).[13] Lucille (Lovejoy) Voight describes a fire started somewhere in Barnwell Creek that burned down to the Eel in the vicinity of Elder Creek. It jumped the river and almost burned the Elder Creek School House. This fire, occurring sometime between 1903 and 1916, was started by a breeze that ignited coals left after burning out a wood rat's nest.[14]

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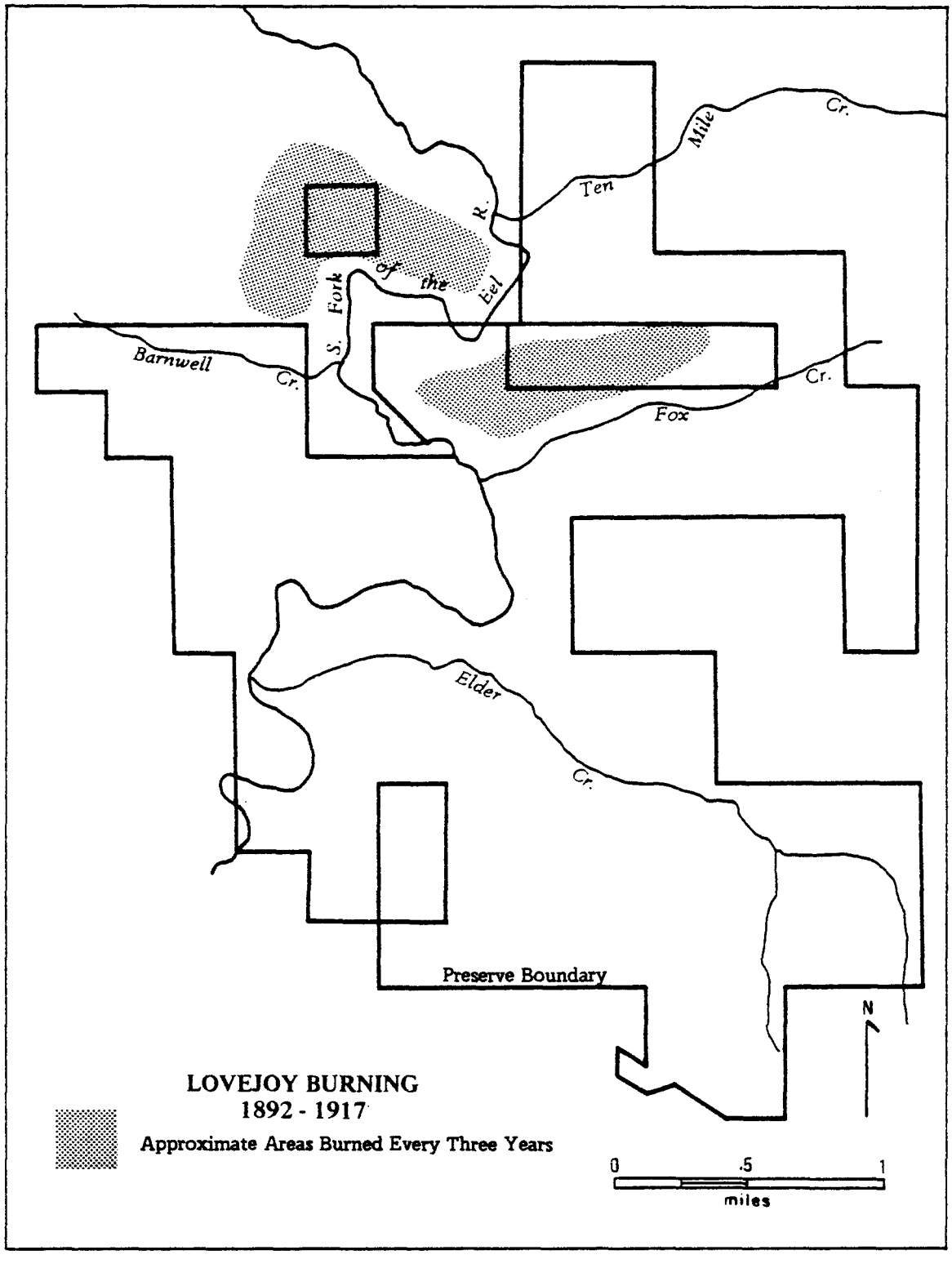
[13]Mark Walker, son of homesteaders William and Bertha Walker. Personal interview, November 1975.

[14]Lucille (Lovejoy) Voight, loc. cit.

MAP 17


Ten Mile Cr.
R.
S. Fork of the Eel
Barnwell Cr.
Fox Cr.
Elder Cr.
Preserve Boundary
N
LOVEJOY BURNING
1892 - 1917
Approximate Areas Burned Every Three Years
0 .5 1
miles

Another fire memorable for the settlers was one started in 1924 on the southern ridge of the Elder Creek Watershed in section 28. It burned down into Elder Creek and it burned out the old Harmon cabin (See map 18).[15]

Other than the general descriptions presented here, it is impossible to reconstruct maps of burned areas from the settlers' accounts above. Nor can it be assumed that these are the only fires that occurred during this period. However, in all of the areas described by these accounts, clear indications of past fires are easily found today. For example, the general area described as having burnt in the 1924 fire is now covered in even-aged tanoak and madrone forest which, when viewed from above, contrasts strikingly to the surrounding forest that appears as a more homogeneous mix of species and ages. These fire signs may be due to the fires described or from earlier or later fires. Dendrochronology, and the study of fire scars on stumps, would help describe the fire history of the preserve more accurately.

Wood use. The settlers had very similar practices of wood use for building and firewood. In most cases, part or all of the settlers' homes were built from redwood

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[15]Danny Zager, son of homesteaders Frank and Eva Zager. Personal interview, January 1976.

felled on the property and then split, planed, or milled into building timbers.[16] Split redwood was used for all fences and in building barns, workshops and animal shelters.

All firewood used by the settlers also came from their homesteads. Fir seems to have been the preferred fuel wood,[17] although oak, madrone, alder, redwood (scraps from other uses), and fir bark (from dead trees) were also used. The usual practice was to fell several trees in the fall of the year and then to cut and stack them in the woodshed for use the following year. Although dead trees and trees located in unwanted places were preferred, many green fir trees were cut also. For example, George Lovejoy cut many of the firs on the slope above his apple orchard for firewood. The Walker family used roughly 10 to 12 cords, the Elders 5 to 6 cords and George Lovejoy

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[16]The wood used in building the Victorian addition to the house at Horseshoe Bend was milled in Branscomb.

[17]Robert Lovejoy and Hattie (Lovejoy) Clarke, children of homesteaders George and Annie Lovejoy (Personal interviews, June 1974 and August 1978, respectively), note that softer woods like fir were preferred since cutting hardwoods with a hand saw was difficult and time-consuming work.

8 to 10 cords of firewood each year. These figures can provide an estimate of what may have been used on the other homesteads.

The settlers also made some commercial use of the timber on their claims since they worked up certain wood products to sell on the coast or in other towns. The Walkers and Elders made maul heads out of live oak to sell in coastal lumber camps (See page 84). For several years the Lovejoys worked up split redwood products, shakes, posts and fence pickets, that were sold in Laytonville and Covelo. These materials were made from redwoods growing across the Eel River from Wilderness Lodge and slightly upstream from the swimming hole.

Aside from bringing in the early settlers, the tanbark boom that was in full swing on the ridges nearer the coast in the early 1900's had only a limited impact on the preserve area, perhaps because of the difficulty and cost of hauling the bark out of such a relatively remote location. Some tanbark was taken out, however, as the Zagers felled and peeled several trees on the ridge northwest of their house and Stephen Elder also took a few trees of his property. Shorty Davis contracted to peel tanbark on a neighbor's property just outside the preserve's boundary. This was the largest known tanbarking operation in the preserve area.

Another attitude towards trees, that had some effect around the homesites, is that large oaks (primarily Quercus garryana) were viewed as a threat to structures. Consequently, when located near buildings, they were either removed, like at Wilderness Lodge or Horseshoe Bend, or topped, like those at the Walker homestead. Abnormal regrowth, as a result of topping, is evident in the white oaks around the Walker homesite today and is shown in Figure 17.

Hunting, fishing, and trapping. All of the settlers made use of the fish and game resources of the area for food and occasionally for profit. Salmon and steelhead came up the river in the winter to spawn and "mountain trout" were fished for in the smaller streams. Deer was an important meat source for all settlers and, when Wilderness Lodge and Horseshoe Bend were hosting their many guests, a particularly heavy toll was taken each year from these two places alone. For example, at Horseshoe Bend about 3 deer per month were killed for food during the six months between June and November. In addition, guests that hunted might take another 3 or 4 deer per month. Bear was also an important meat source and, between Wilderness Lodge and Horseshoe Bend, 6 to 8 bear a year would be killed, smoked and used much like pork.

An important meat source for the Zager family was

Figure 17. These white oaks (Quercus garryana) surrounding the homesite at the Walker Homestead at "Chokecherry Flat," all bear scars or growth deformities as a result of topped by the early settlers. This photograph was taken in the fall of 1978.

soon as the settlers began to arrive in the 1880's with their domestic hogs, many of which were allowed to roam free, hogs began to escape and naturalize. These feral hogs offered a food source much like the other animals of the area. They were hunted and killed for meat, particularly in the fall after fattening up on acorns. Sometimes they were trapped and fattened before slaughtering. Settlers who wanted domestic hogs would sometimes start their herds by trapping wild ones and domesticating the babies.

Feral steers, goats, and sheep were also present in the preserve area although they were not reported in the preserve itself. These animals, like the hogs, were heavily hunted but were somehow not as successful as the hogs since the former are generally absent today.

Useful and noxious native plants. The settlers found several wild plants useful. The Lovejoys supplemented their diet with a thistle for greens in the spring. Yerba buena (Satureja douglasii) was commonly used as tea. Some plants were used for medicinal purposes. Mountain balm (probably Yerba santa, Eriodictyon californicum) was used as tea for colds and seedballs from buckeye (Aesculus californica) were made into a salve for rectal trouble (buckeye is an astringent). All varieties of wild berries were used. Lucille and Bessie Lovejoy even ate the flesh

off yew berries (Taxus brevifolia) but avoided the poisonous seeds.

Knowing what weedy plants were common during the homesteading period might reveal species that are no longer present, but most of the old timers interviewed did not remember the "weeds" except for Lucille (Lovejoy) Voight, who recalls tar weed (probably either Hemizonia clevelandii or Madia exigua), wild sunflower (species unknown), sour dock (Usually this common name refers to Rumex hymenosepalus, a species not found on the preserve; perhaps Lucille was referring to Rumex acetosella, a species similar in appearance that is presently found on the preserve), wild chicory (species unknown), and chickweed (probably either Stellaria sp. or Cerastium sp.).

Hattie (Lovejoy) Clarke notes that several weeds common around Horseshoe Bend and Wilderness Lodge today, such as sugar grass (species unknown), dog-tailed grass (probably Cynosurus echinatus), and star thistle (Centaurea solstitialis L.) were not found on the homesteads while she lived there (until 1906).

Mining. The only mine in the preserve area was supposedly a cinnabar mine opened in 1903-4 on the Walker claim by Bill Walker and a friend named Hotskins (See map 16). The mine was only worked for a short time and

no cinnabar was ever sold.[19] The mine shaft was 3 or 4 feet across by 30 feet deep, but it is now barely discernible among the rubble of broken rock.

Undeveloped Claims and Miscellaneous Cabins

In addition to the major homesteads discussed, other parcels were also patented from the U.S. Government under the Homestead Act and later amendments and many additional attempts at "proving up" were made that resulted in numerous small cabins scattered through the preserve area. These sites (shown in map 18) were generally inferior to those of the successful claims, due to lack of flat land, water, or general isolation, and only feeble attempts were made at meeting the requirements necessary for patenting land. Therefore, it is no wonder that little or nothing of any land use or development is evident in these areas today.

No matter how little developed these claims were, they are significant to the land-use history of the area because they established the pattern of ownership that dictated subsequent use. Essentially, because these lands

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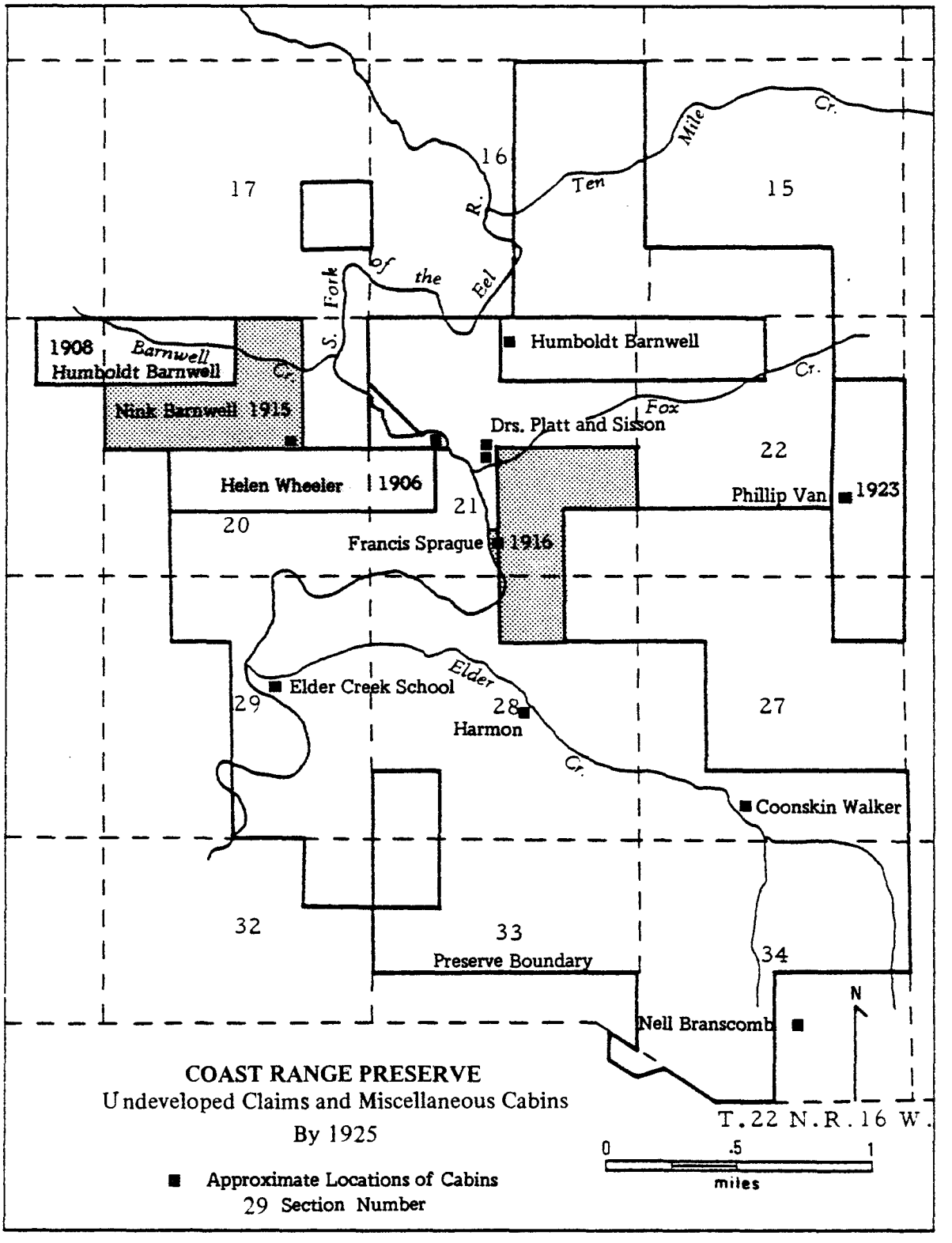
[19]This rock type has been identified as limestone of Eocene age (45-53.5 million years old). Kelly Collins, Geology of the Northern California Coast Range Preserve, Mendocino County, California" (report to The Nature Conservancy, 1979), pp. 13-15.

MAP 18


16
17
15
Ten Mile Cr.
R.
S. Fork of the Eel
1908 Barnwell Humboldt Barnwell
Cr.
Nink Barnwell 1915
Humboldt Barnwell
Cr.
Fox
Drs. Platt and Sisson
22
Helen Wheeler 1906
21
Phillip Van 1923
20
Francis Sprague 1916
Elder Creek School
Elder
29
28
Harmon
27
Cr.
Coonskin Walker
32
33
Preserve Boundary
34
Nell Branscomb
N
COAST RANGE PRESERVE
Undeveloped Claims and Miscellaneous Cabins
By 1925
T.22 N.R.16 W.
0 .5 1
miles
Approximate Locations of Cabins
29 Section Number

were in private ownership, rather than public domain, and since their use potential was low during the Homesteading Period, they were held as large, intact parcels until a time when timber harvest or later encroaching population could make economic use feasible. Subsequent ownership and the eventual purchasing of these lands by The Nature Conservancy prevented such use for the majority of these properties.

Of additional importance, these undeveloped claims and miscellaneous cabins fill in a significant element of the area's homesteading picture. Specifically, of the many settlers who tried to establish a working homestead, only those with prime sites and an abundance of personal commitment were successful, and it is their mark on the land that is seen today. However, the hills and encroaching forest and brush hide the evidence of many others who also tried but did not succeed.

Helen Wheeler's claim and cabin. Helen Wheeler was an early guest at Wilderness Lodge who apparently became enamoured with the area. In 1906, she received 160 acres from the Government and, in 1907, she purchased an adjacent 23-acre parcel from Loriston Lovejoy (not presently part of the preserve). On the 23 acres, Miss Wheeler had a small house built on a wooded river terrace across and slightly down river from Wilderness Lodge (See

Map 18). This was primarily a summer house and Miss Wheeler's use of the area was slight. The adjacent 160 acres were left alone. Today, the remains of the cabin and two outbuildings are still evident.

Francis Sprague's claim and cabin. Francis Sprague was also an early Wilderness Lodge guest and followed the actions of Helen Wheeler.[20] In 1907, she purchased 6 and 62/100ths acres from Loriston Lovejoy and, in 1908, she received 160 acres from the Government (See map 18). She had a simple, redwood shake cabin built which she used only occasionally as a summer retreat until about 1917. Like Miss Wheeler, her use of the area was limited and the adjacent 160 acres was left undisturbed. The cabin, still visible today, was "Fanny's" only development.

The cabins of Dr. Platt and Dr. Sisson. In 1913, Dr. Platt and Sisson, who were guests at Wilderness Lodge, each bought a cabin site from Loriston Lovejoy on the agreement that, if Loriston ever sold his property, they would also sell. They each built a cabin (See map 18) which they used during the summers until they sold to

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[20]Local stories claim that Misses Wheeler and Sprague were vying for the attentions of a young Doctor Quinan, also a visitor at Wilderness Lodge. When Miss Wheeler bought land, presumably to entertain Dr. Quinan, Miss Sprague had to follow suit. Both spinsters missed

Bill Kiefer in 1917, according to the agreement, when Loriston sold Wilderness Lodge.

Phillip Van's claim and cabin. Phillip Van claimed 160 acres in 1923 on the ridge north of Black Oak Mountain (See map 18). He settled at a place known as "Bee Spring," a grassy opening in the black oaks. The dwelling he built was a hole dug into the mountain, which was equipped with a wooden front wall and a door with stained glass windows. Remnants of the building and hole are still visible today. Phillip never lived there continuously, only for a few days at a time during the summers. In local histories[21] there is mention of an old hermit who lived in a cave on the mountain. This was Phillip Van, by no means a hermit, since he spent most of his time with friends on Ten Mile Creek.

Nink and Humboldt Barnwell's cabin and claims. Two brothers, Nink and Humboldt Barnwell, chose adjacent properties along "Flat Creek," now known as "Barnwell Creek." In 1908, Humboldt received title to 120 acres

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out, however, as he got married in the San Francisco Bay Area and never returned. Heath Angelo, area resident, is the source for this story.

[21]Kate Mayo, "Pioneering in the Shadow of Cahto Mountain," first centennial Edition, 1874-1974 (copyright 1974, by Kate Mayo), p. 131.

and in 1915 Nink received title to the adjacent 160 acres. They built a cabin (See map 18) and, farther up the ridge, cleared an opening of several acres in the brush, in which to plant their grain field. Their residence was only intermittent, however, and was probably intended to be just adequate to "prove up," and the site was never developed into a permanent residence with major improvements. In 1921, Humboldt sold his property to Nink and in 1937, both properties ended up in the hands of a third brother, Bey. Signs of the original cabin have not been found and may have been destroyed by later logging.

Humboldt Barnwell's second cabin. Humboldt began work on a second homestead claim around 1912-13 (See map 18). He built a cabin, fenced a small portion and built a trail to the cabin that left from behind the apple orchard at Horseshoe Bend. He never proved up on this claim and soon abandoned it. A fire must have later gone through the area and destroyed the cabin because all that can be found today are the remnants of the fence and a few charred boards.

Coonskin Walker's cabin. This cabin and campsite were built on a river terrace on the north side of Elder Creek (See map 18) and served as base camp for Coonskin Walker for a few years around 1906. Coonskin never filed a claim and no signs of his occupance can be found today.

Nell Branscomb's cabin. Nell Branscomb lived in this cabin intermittently around 1915, intending to file on 160 acres, but she never "proved up." Signs of this cabin have not been found and were possibly destroyed by later logging.

The Harmon cabin. A number of old-timers mention the Harmon cabin on a stream terrace on the south side of Elder Creek somewhere between Stephen Elder's homesite and "the falls" on Elder Creek. The exact location of the cabin was not described by any source and the cabin was reportedly burned out in the 1924 fire. On map 18, the cabin has been located approximately where a small flat opening, resembling an abandoned field, has been found. This location is compatible with descriptions by all sources. It also is not known whether Harmon lived alone or lived with a wife and children. Both versions have been mentioned in local stories. The Harmon cabin was occupied around 1900-05.

The Elder Creek School. The lack of a local school inflicted hardship on the early homesteading families, and, for the Walkers, kept them from living on their homestead from 1898 to 1903. In 1903, Stephen Elder donated a piece of land located on a flat on the south side of the creek that flowed in front of his

house (from then on called Elder Creek), near its confluence with the Eel River. The Elder Creek School, a 20 by 30 foot building, was built by the families of the area and opened in 1903. The school year ran from April 1st to Thanksgiving and regular sessions were held at least throughout the early 1920's. About 1931, the school house was cut in half and moved to another location on Jack O'Hearts Creek on the west side of the Eel River. All that can be found of the old school on "School house flat" today, is a remnant of the old privy seat.

Other homesteaded properties. In addition to the cabins and claims just described, a number of other properties also passed from Federal to private ownership under the provisions of the Homestead Act and its later amendments. But, because there were no improvements on any of these claims, they will be considered in Chapter 5 under "The Camp Adventure Property" and "The Angelo Property."

Site or Settler--What Accounts for Settlement Differences?

Looking at the type of settlement established by the first homesteaders, three essentially different styles emerge, depending on whether the settlers were: 1) those who seriously attempted a self-sufficient homestead; 2) those who either tried and failed to obtain

title or only made a cosmetic try that was hopefully enough to obtain title to the land from the Government; and 3) those who developed establishments primarily for recreational purposes to be used only during the summer. Factors influencing settlers in the last two categories have already been considered in "Undeveloped Claims and Miscellaneous Cabins." Factors creating differences in settlement style for those in the first category are subtle, mixed and more difficult to unravel.

For those making a serious attempt at the self-sufficient homestead, site was of ultimate importance, with the presence of water and flat land probably exerting the greatest influence. As would be expected, the best sites were taken up by those making such serious attempts. It did not take long, however, for differences in the degree of self-sufficiency to begin to appear, but whether these differences were the results of inadequacies of the site, or in the expectations or abilities of the settlers, is difficult to determine.

The first difference to emerge is in how the settlers dealt with their need to obtain cash, for none of the homesteads were completely self-sufficient. The homesteaders handled this problem in one of two ways. Either they made a product or provided a service, either on the homestead that could be sold for cash, as did the Elders at Oak Grove (vegetables, charcoal and eggs) and

the Lovejoys (split stuff and later the boarder business), or they could live away from the claim for the summer and work elsewhere, as did the Davises and Walkers.

Once title to the land was obtained these basic differences widened. The Walkers, Elders, Davises and Zagers sold their parcels soon after and moved away. In the case of the Zagers and Walkers, who had woodsman experience before coming to the homestead, it is notable that they moved to an area where their livelihood could be made from producing wood products.

Perhaps then, background and expectations were dominant factors in determining how the settlers approached their lives and livelihoods on the claim. But it is also significant that, among the major sites, these three were the least well-endowed. The Walker claim possessed adequate flat land (and improvements made by Stephen Elder) but water seemed to be a problem. Their development of three water sources, two of which went dry in the summer, the necessity of carrying water to the house, and the lack of year-round water to the garden, may have all influenced the decision to leave this site. After all, Stephen and Princetta Elder abandoned this site in favor of Oak Grove.

The Zager site also lacked year-round flowing water that was easy to develop and the site was not level

and thus was difficult for agriculture. The Davis site had plenty of water from Elder Creek, but no substantial flat land. On this site, flat land was available only on relatively small, separated stream terraces. For these three sites then, either site or settlers' expectations could have been the deciding factor but it is likely that both played a part.

In the case of the Elder homestead, flat land and water were both available and the Elders, having originated in Iowa, had mixed farming experience before coming to California. The hard work and planning put into the site, as well as their year-round residence, indicates that the Elders may well have planned a long-term commitment to their claim. But after their son, Charlie, had moved to Ten Mile Creek in 1898, and a daughter, Bertha, and her husband and family had left Chokecherry Flat in 1906, the Elders were left in their later years of life without family in the immediate area. This alone may have influenced their decision to leave.

Both Lovejoys had good sites and the advent of the boarder business gave them both a financial edge that could have enabled them to stay. Two factors seem to have influenced their leaving. First, several members of the family indicate that the automobile changed what vacationers wanted and reduced their clientele of

regular visitors. A second factor was that the Lovejoys apparently found it difficult to work with their neighbor, Bill Kiefer, who bought in as a partner in Wilderness Lodge in 1916. Within several years, both Lovejoy families had left the area.

Considering the interplay of site, background, personal commitment, expectations, and probably a miscellany of other factors evidenced by the serious homesteaders of the preserve area, it appears that a constant battle was at play in influencing the decisions made. No one factor can be identified as dictating differences and, in most instances, at least several influencing factors appear important. It also seems that it did not take much for the settlers to decide to leave, suggesting that the constant interplay of influencing factors had been at work and that just a small item could push things out of balance and cause the settlers to make that final decision to leave.

Just what brought about the end of the homesteading period may never be known because of the complexity of influencing factors but, in leaving, the settlers acted remarkably similarly, for they were completely gone by the early 1920's. Despite the minor differences between the homesteads, major land-use differences and changes occurred with changes in ownership, and the close of the homesteading period opened the way for a significant change in settlement and land-use type.

Residual Patterns

From the various photographs (See figures 3, 4, 5, and 12) and descriptions provided by the old timers, the environment was clearly different during the Homesteading Period than today. It was an area of open, "park-like" forests that covered much less area than today's extensive young forest. Considerable areas of low brush, often purposely maintained by fire, surrounded openings and there was little of the thick, youthful oak forests that now occupy areas the settlers describe as being in scrub.

As the original homesteaders left the area between 1906 and 1925, they left behind a pattern of settlement agriculture superimposed on the environment. The locations of their buildings, roads, fences, fields, and grazing areas left patterns that are still evident today.

But these patterns may be viewed as an overlay. Their location and distribution may actually reflect an earlier pattern--one that the homesteaders themselves may have found when they arrived--a pattern left by the aboriginal inhabitants. As the settlers moved into "natural openings" they took over the same areas previously occupied, used and, as discussed in chapter 3, perhaps manipulated by the Indian. Not only did these patterns of openings influence the locations of the homesteads, but the vegetational mosaic of forest, grassland, brush,

oaks and ecotones that surrounded the homesteads (that may also have been created by aboriginal manipulation) affected the location of the settlers' resources, and influenced where they built, farmed, ran their animals or conducted their own burning.

Just as the original homesteaders had responded to patterns they found in the environment they moved into, the patterns they left dictated the choices and decisions of the inhabitants that followed. By the close of the Homestead Period, the early 1920's, all homesites had been selected, the layout of developments established, major fields cleared and plowed and the basic road and trail network built. All subsequent land use was built around these patterns.

CHAPTER V

OWNERSHIP AND LAND USE FROM THE CLOSE OF THE HOMESTEAD PERIOD TO THE PRESENT

Introduction

In 1956, when The Nature Conservancy established the Coast Range Preserve, it acquired land primarily from two owners: Heath and Marjorie Angelo and a group collectively known as Camp Adventure (See map 19).[1] From these parties, 3,460 acres, the bulk of the preserve, was acquired. This acreage still forms the great majority of the preserve because only 80 acres have been added since the original purchases.

This ownership of large acreages by single landowners, as in the case of Angelo and Camp Adventure, is in marked contrast to the many separate holdings that characterized land tenancy at the close of the homestead

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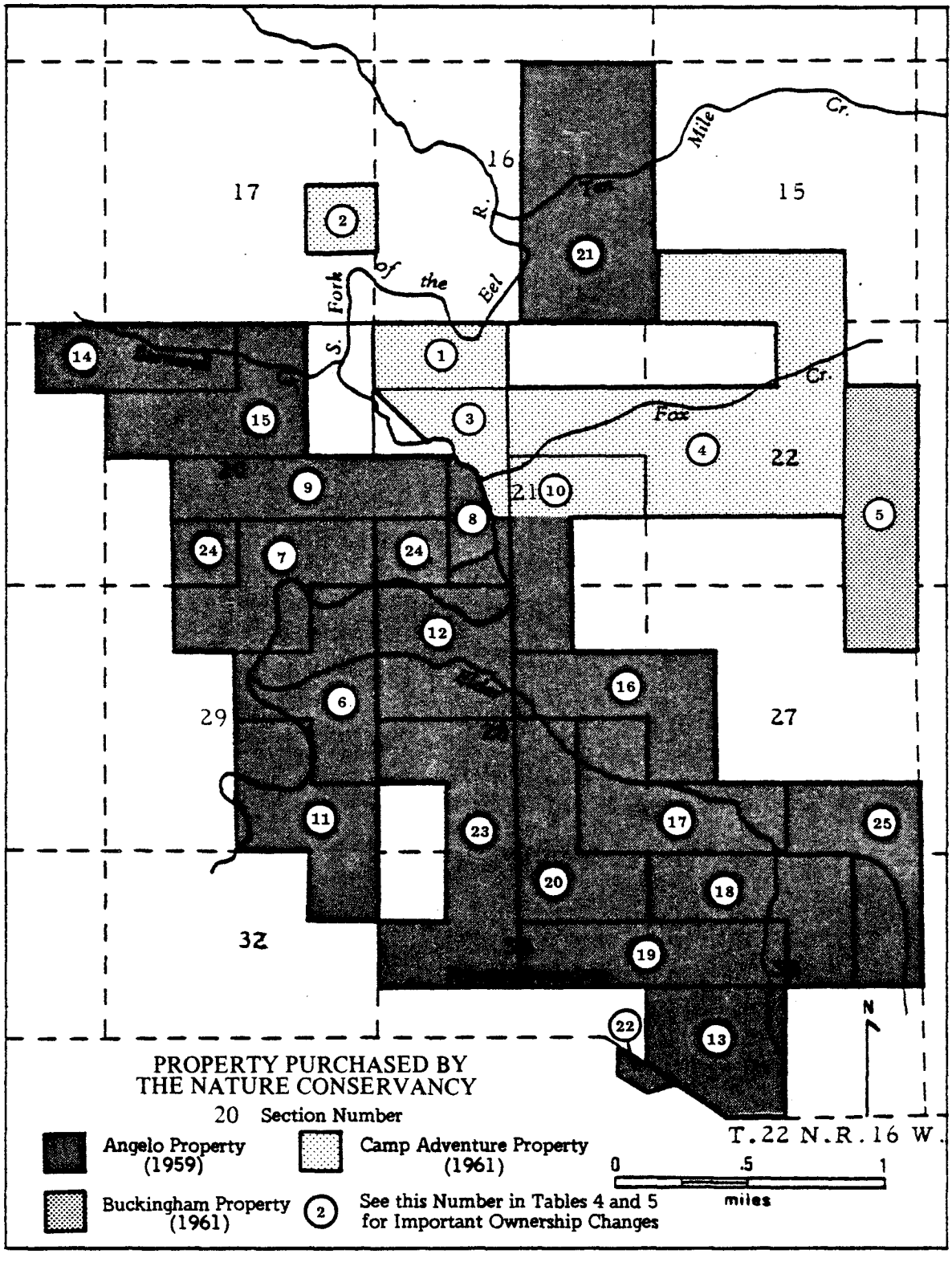
[1]Only 160 acres of The Nature Conservancy's original purchases establishing the preserve, came from an owner other than Angelo and Camp Adventure. This was the former Van homestead (See map 18 on page 160), purchased in 1961 from the Buckinghams (See table 5).

MAP 19


17
16
15
29
27
22
21
32
Mile Cr.
Fox R.
S. Fork of the Eel
Fox Cr.
PROPERTY PURCHASED BY
THE NATURE CONSERVANCY
20 Section Number
Angelo Property (1959)
Camp Adventure Property (1961)
Buckingham Property (1961)
See this Number in Tables 4 and 5 for Important Ownership Changes
N
T.22 N.R.16 W.
0 .5 1
miles

period. The complex of land tenancy had changed during the intervening years, primarily because several individuals bought up properties, obtaining control of large holdings, and then sold property in large parcels. Some properties were held, probably for speculative purposes, as smaller parcels by other individuals for many years, but were not used in any way. These properties also were eventually consolidated under the ownership of either Angelo or Camp Adventure (See tables 4 and 5). As a result, land-use during this period became dominated by a few individuals.

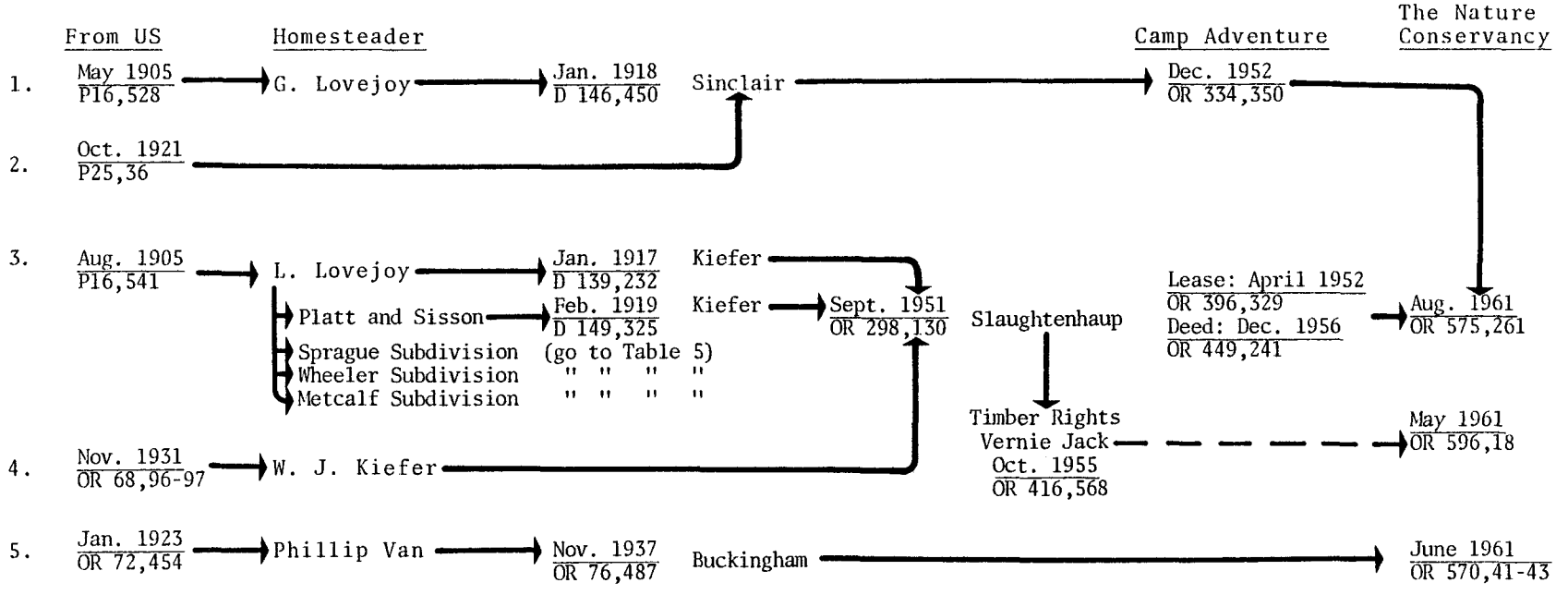
Tables 4 and 5 describe the important title transfers that culminated in the domains held by Heath and Marjorie Angelo and Camp Adventure. The following discussion of land use, from the close of the Homestead Period to the establishment of the preserve in 1956, is organized into two parts: properties that eventually came under Camp Adventure ownership and those that eventually came under Angelo ownership.

The Camp Adventure Property

This large tract of land is comprised of parts of the former George and Loriston Lovejoy Homesteads and sizable acreage in Fox Creek that was homesteaded by William J. Kiefer in 1931. Table 5 details the title transfers from the close of the Homestead Period

TABLE 4

IMPORTANT OWNERSHIP CHANGES CULMINATING
IN THE CAMP ADVENTURE AND
BUCKINGHAM PROPERTIES



See number on Map 19 for location of property.

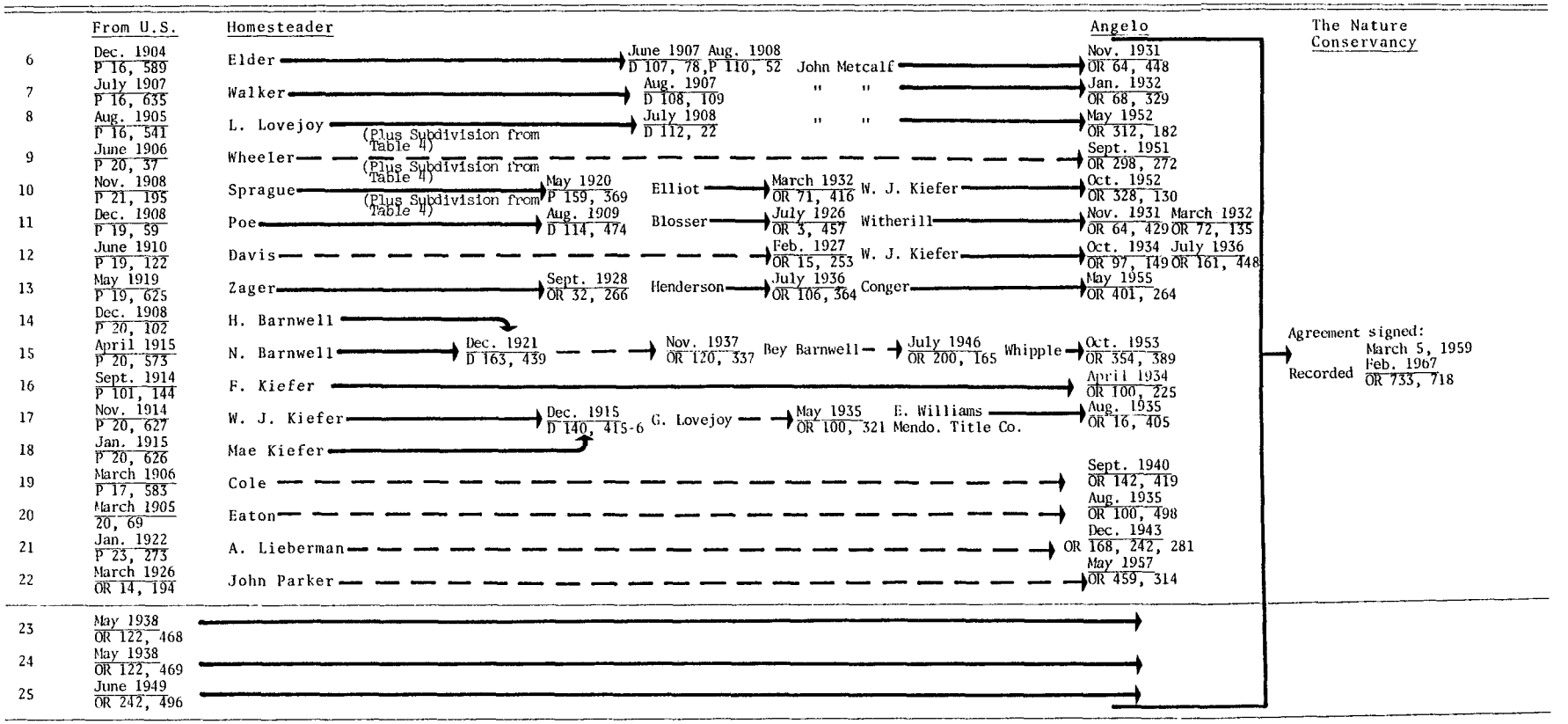
Date of Transaction
Book (P = Patents, D = Deeds, OR = Official Records), page where transaction is recorded.

→ no intermediate owners

– – → intermediate owners not shown

TABLE 5

IMPORTANT OWNERSHIP CHANGES CULMINATING IN THE ANGELO PROPERTY



See number on Map 19 for location of property.

Date of Transaction
Book (P = Patents, D = Deeds, OR = Official Records), Page where transaction is recorded

——→ no intermediate owners

— — — — → intermediate owners not shown

that resulted in the Camp Adventure Property as transferred to The Nature Conservancy in 1961. Changes in ownership and land use during the intervening years are described in chronological order in the following discussion.

William J. Keifer. William J. Kiefer began his acquisitions of land in the preserve area in 1914 with the homesteading of 160 acres in Elder Creek. During the next few years, he continued his accrual of property, both through homesteading and through purchasing property from other owners so that, by 1931, he was a major landowner in the area (See map 19 and tables 5 and 6). In terms of the land-use history of the area, his most significant acquisition was initially buying in as a partner with Loriston Lovejoy in the "Wilderness Lodge Improvement Company" in April, 1916. Within the next year, Loriston's family left Wilderness Lodge, allegedly because of problems working with Bill Kiefer, who then bought the remaining rights in January of 1917.

From this time until 1951, Wilderness Lodge was owned and managed by Kiefer and was the focus of most of his land use activities. This period of time, however, was also marked by financial difficulty for Kiefer. Records in the Mendocino County Recorder's Office

TABLE 6

TYPE, NUMBERS, USE FEED, AND HOUSING FOR DOMESTIC ANIMALS
KEPT AFTER THE HOMESTEADING PERIOD

TYPE	NUMBERS AT HOMESTEAD SITES				USE	HOUSING	FEED
	Brown Chokeberry Flat 1916-1920	Angelo Oak Grove 1931-1945	Kiefer Wilderness Lodge 1917-1937	Conger Zager Homestead 1936-55			
Horses	1	2	1	0	work	Barn	Hay, rolled Barley Pasture
Donkeys	0	0	0	0	saddle pack animal	Barn	Hay, Pasture
Cows and Calves	0	4	10 - 12	0	milk meat	Barn Loose	Hay, Pasture
Hogs	40	5 - 6		0	meat	Loose Shed,Pen	Loose, Acorns
Chickens	30	200	20 - 40	0	eggs meat	Shed	Wheat, Grain scraps
Turkeys	0	12	0	0	meat	Shed	" "
Rabbits	0	20	0	0	meat	Shed	" "
Foxes	0	0	0	50	pelts	Shed	" " Goat meat and blood
Goats	15	3 - 4	0	50 - 100	fox food	Shed	Grain, Browse
Dogs	2	1 - 2	1	0	pet	Loose	Scraps
Cats		12	2 - 3	0	mouser	Loose	Scraps, Hunting

reveal that in August 1926,[2] Keifer filed a declaration of homestead on the Wilderness Lodge property to provide some protection for his ownership. From this point on, most of Keifer's activities recorded in the County's Official Records are loans against his various properties, pay offs of those loans, a default in May of 1937,[3] and finally in Ocotber 1937, one month after Wilderness Lodge burned down, Kiefer filed for bankruptcy.[4]

Kiefer had been selling off some of his property, parcel by parcel, to Mr. Heath Angelo since 1934 (See map 19 and table 5), but it was not until 1951 that he was able to sell the Wilderness Lodge and Fox Creek properties to Van D. Slaughtenhaup.

1) Kiefer's land-use at Wilderness Lodge. William and Mae Kiefer, like the Lovejoys before them, managed Wilderness Lodge as a resort for Bay Area vacationers. During this time Wilderness Lodge reportedly had the capacity to handle up to 90 guests at a time[5] who would

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[2]Mendocino County Offical Records, Book 14, page 93, Mendocino County Recorder's Office, Ukiah, California.

[3]Ibid., Book 113, page 448.

[4]Ibid., Book 117, page 325.

[5]Heath Angelo, in a personal interview in 1978, said that from the time of his arrival in 1931 there were never more than 30 guests at Wilderness Lodge at one time.

spend several weeks during the summer swimming, hiking, fishing, hunting, boating, dancing and drinking at the resort. Apparently Kiefer's resort business peaked during Prohibition (1920-1933) since locally manufactured moonshine was readily available. Wilderness Lodge thus achieved notoriety as the vacation spot where one could indulge with little worry or repercussions. Local sources say that Kiefer and his guests did indeed spend much of their time intoxicated.[6] The reputation Wilderness Lodge earned locally extended to other areas of conduct as well, as it also became known as the place to take a girl friend when the wife stayed home.

During the years of peak visitor use, Kiefer hired several employees to help with chores, maintained a big vegetable garden by the house, raised grain for stock, had a flock of chickens, and up to nine cows. South Meadow was used as a horse pasture and sometimes a few steers and horses were pastured in Sprague Meadow as well.

Towards the end of his period of ownership, perhaps partly the result of the close of prohibition and failing business, Wilderness Lodge started being neglected. The Kiefers abandoned year-round residence

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[6]Betty Barnes, area resident. Personal communication.

in 1936 allowing for further neglect. Heath Angelo witnessed this process occuring between the time he arrived in 1931 and when the Lodge burned in 1937. One example he gives is that the bathhouses had flush toilets when he arrived but through non-use and non-attendance during the winter months, they froze and broke. This period of neglect culminated in the devastating fire of September 1937, that destroyed most of the original Wilderness Lodge buildings.

Map 12 on page 97 , showing the general layout of Wilderness Lodge during the Lovejoy-Kiefer era, also describes conditions under Kiefer's ownership. In addition to the developed area portrayed on the map, several small cabins were built near the mouth of Fox Creek. All buildings shown on the map as having no physical remains today, were destroyed by the fire. The cabins on Fox Creek were disassembled later.

2) Kiefer's land-use on other properties. As previously mentioned, Wilderness Lodge was the focus of Kiefer's land-use activities. Most of the other property he owned in the preserve area was essentially left alone, aside from some grazing of stock in Sprague and South Meadows. At this time the former Sprague homestead was owned by a Mr. William Elliot, who wanted to develop and subdivide the property into smaller parcels to sell.

(Mr. Elliot also owned the Davis property. He may have also wanted to subdivide and develop this property, but there are no records to so indicate.) Kiefer did the work, which from present appearances, was not substantial. This plan was apparently not very successful, as only one potential buyer appeared, and he changed his mind after spending some time on the property. Mr. Elliot passed away and Kiefer put a lein against the estate for work he performed and was not paid for. He consequently received title to the property in March 1932.[7] Kiefer eventually sold the Davis property to Angelo (See table 5).

In 1921, Kiefer hired August Alquist, a neighbor who lived at the headwaters of Fox Creek, outside the present preserve boundaries, to build a wagon road leading from Wilderness Lodge, up the ridge north of Fox Creek to Alquist's property (See map 22). This road was then to have been connected to existing roads leading to Laytonville, thus providing a more direct and faster route from Wilderness Lodge to Laytonville than by the existing, circuitous route through Branscomb. But Kiefer and Alquist had a disagreement over the terms

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[7]Ibid., Book 71, page 461.

of the contract and Alquist took Kiefer to court and won a judgement in 1926.[8] As a result, the wagon road was never completed. The finished sections of this road and the trail over the rest of the route are used as a hiking trail today.

The arrival of Slaughtenhaup. When Kiefer finally sold the Wilderness Lodge property in 1951, he sold to Van D. Slaughtenhaup, who was interested in setting up a hunting club and buying up more land to connect his property with that of the Brushy Mt. Lodge hunting club north of Ten Mile Creek. This would have provided extensive acreage for the hunting club members on the east side of the Eel River. These plans never materialized and only Slaughtenhaup and a few friends ever hunted on the property.

Although Slaughtenhaup did not live year-round on the property himself, he had a caretaker named Harmor who lived there with his wife and several grown children for about three years in the early 1950's. The Harmors built the cabin that is now called "Wilderness Lodge" for their residence, and a large garage shed that contained a stable and workshop at one end (See map 20). This garage was disassembled in 1969. Harmor also built

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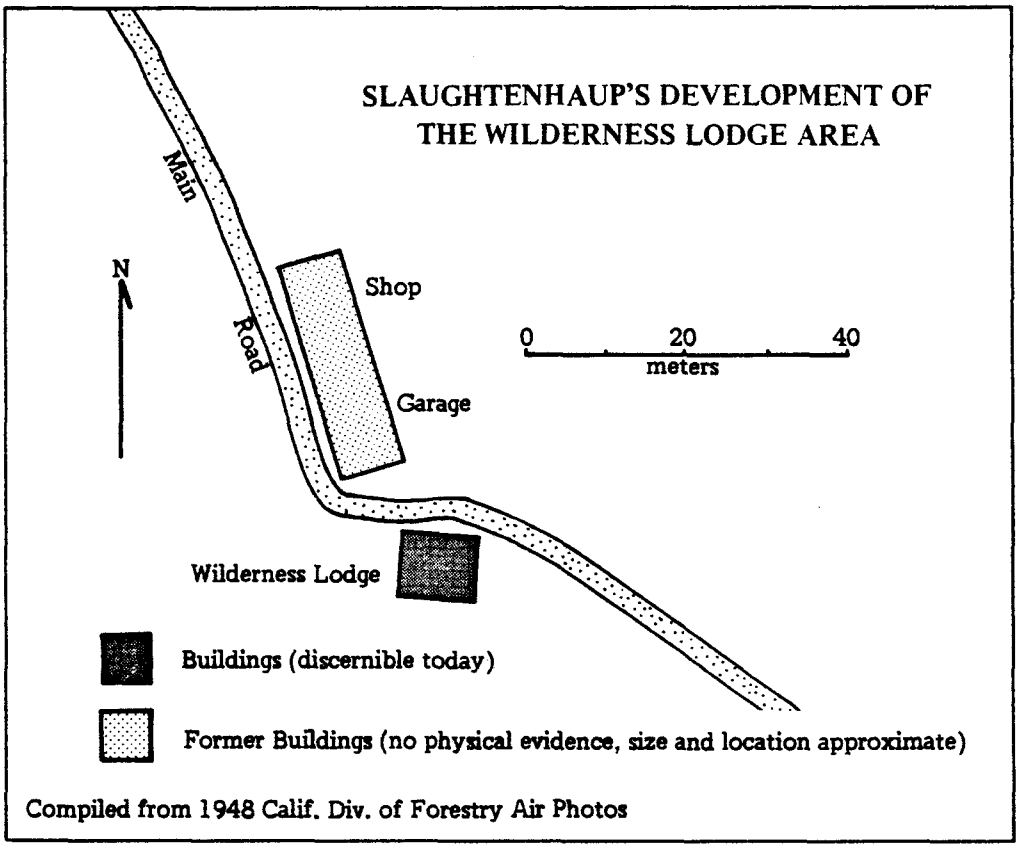
[8]Ibid., Book 12, pages 34-35.

MAP 20


SLAUGHTENHAUP'S DEVELOPMENT OF
THE WILDERNESS LODGE AREA
Main
Road
N
Shop
Garage
0
20
40
meters
Wilderness Lodge
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
Compiled from 1948 Calif. Div. of Forestry Air Photos

several mortar and river rock barbeque pits down by Fox Creek and covered them with sloping shake roofs. These fire pits are the same as used today, but the roofs were removed in 1974.

The period of Slaughtenhaup's ownership was marked by low-intensity land use. Aside from Harmor's residence, and visits by Slaughtenhaup and friends, the property was essentially left alone. The Harmors maintained a modest garden but there was no other agriculture. The only domestic animals kept on the property were periodically several horses and a few cats.

In 1955, Slaughtenhaup sold rights to the timber in Fox Creek to Vernie Jack and in April 1952, he leased, with an option to purchase, the Wilderness Lodge property to a group collectively known as "Camp Adventure." Camp Adventure bought the property in 1956.

Horseshoe Bend. In 1904, George and Annie Lovejoy subdivided their 160 acre parcel and sold 80 acres to Francis Louise Shepard. This property is not part of the preserve today and will not be considered further in this thesis. The remaining 80 acres, that with all the developments, was sold to John and Maggie Sinclair of Fort Bragg in 1918. Throughout their years of ownership, up to 1952, Horseshoe Bend was used as a summer retreat. The site was left virtually uninhabited

during the winter months, but during the summer, John and Maggie, and after John's death in 1920, Maggie and Tilda, the Sinclairs' Finnish housekeeper, would move up to the property for several weeks at a time. Throughout the long, warm summer days, they relaxed and entertained various guests and family at their "Miramiche," named after a well-remembered place in their homeland of Nova Scotia.

During this time, garden sites and the large field were left uncultivated, but several horses belonging to neighbors were sometimes pastured in the field. There was no new construction and virtually no use was made of existing buildings like the barn and blacksmith shop. The old storage building behind the kitchen (See map 13 and page 105)was used for storing wood and, additionally, a telephone line, originally installed about 1909, was improved and provided communication between neighbors and the outside world. Insulators and wire, remnents of this system, can still be found today at Horseshoe Bend or along Wilderness Road in the preserve.

When Maggie Sinclair passed away in 1946, the property was inherited by her children, Ernest Sinclair and Helen Sinclair Cornwall. Intermittent, low-intensity use continued until 1952, when the property was sold to

Camp Adventure.

The arrival of Camp Adventure. "Camp Adventure" is the collective name for a group of individuals who came to the preserve area in the early 1950's and bought Horseshoe Bend and Wilderness Lodge with the intention of operating summer camps for youth. The inspiration for this group was Lige Coalman, a lifetime devotee of the YMCA who had earlier been responsible for the building and operating of the YMCA camp at Gualala in southwestern Mendocino County.

In 1952, when the Sinclairs were selling the Horseshoe Bend property, the advertisement was seen by Dr. Waldo Cook, who had become familiar with the preserve area as a youthful participant in one of Vincent Brown's Boy's Camps (See page 206). Waldo contacted the others who, besides himself, were to become Camp Adventure: Lige Coalman and Dr. Donald Watts. They purchased Horseshoe Bend in 1952 and leased, with option to purchase, the Wilderness Lodge Property in 1952, purchasing it in 1956. The original intention of these purchases was to secure a site to operate summer camps that would train counselors and staff for the regular YMCA camps.

Land use during this period was very light. Several summer programs were held at the White House and Wilderness Lodge, involving varying numbers of

youth and staff who used the area for hiking and swimming. Because of the seasonality and irregularity of use and numbers, these recreational pursuits did not nearly approach the land-use intensity of the earlier resort businesses and consequently left no perceptible mark on the land. Improvements to the properties were limited to repairs to existing structures that, in spite of attention, generally deteriorated in condition throughout this period.

In 1961, Camp Adventure sold their holdings to The Nature Conservancy but maintained a use right or life tenancy on the house at Horseshoe Bend. With Lige Coalman's passing in the early 1960's, the inspiration for summer programs was gone and use declined, although the house was periodically used for recreation during the summers by various Camp Adventure principals and their friends.

The Angelo Property

Map 19 whows the Angelo property as transferred to The Nature Conservancy in 1959. This property was comprised of the former holdings of the John Metcalf Land Company, that included the former Elder and Walker Homesteads, as well as miscellaneous other properties acquired by the Angelos. Table 5 describes the title transfers that resulted in the Angelo property and the

following discussion detail these transfers and accompanying land uses.

The John Metcalf Land Company. Under the direction of land owner John Metcalf and Santa Rosa lumber operator, Mead Clark, this company began to acquire large tracts of land in Mendocino County during the early 1900's. Their purposes seem to have been largely speculative because at that time large-scale logging operations in the preserve area were not economic due to its isolation. The only lumber operations during the Metcalf and Clark era were the production of "split stuff" products whereby a redwood tree was felled and then worked up by hand into railroad ties, shakes, fence posts and pickets. Since these items were in high demand and a relatively small quantity would fetch a high price, production of split products was economical from even such an isolated area.

The John Metcalf Land Company began to go bankrupt in the 1920's and to divide and sell off their assets. It was about this time that Heath and Marjorie Angelo made their first purchase, the former Elder Homestead, from John Metcalf in 1931. During the interim (1906-1931), however, ownership by this company dominated land use for the Walker and Elder Homesteads and a 43.24 acre subdivision (See map 19 and tables 5

and 6) of Loriston Lovejoy's Wilderness Lodge property.

1) The Elder Homestead. Under Metcalf's ownership, residence at and use of the Elder homesite appears to have been intermittent. There are reports of several different families residing in the cabin and raising gardens, while a few worked for the Company by making split redwood products on other of the Company's holdings (on properties not included in the preserve). One resident is said to have raised onions for sale in local markets and William J. Kiefer is even said to have briefly operated a resort called "The Oaks" on the property.

In spite of the lack of good sources of information concerning the Elder site during this period, basic land uses are indicated by conditions found by the Angelos when they arrived in 1931. Apparently, the large grain field had not been cultivated for some years before, since brush was found encroaching into the opening. The well and flume had not been maintained since they were inoperable, and fences had been allowed to deteriorate and needed rebuilding. Material improvements were few, since, on arrival, the Angelos found basically the same buildings that the Elders had left with the addition of a cabin under the oak trees that had been built sometime during the intervening period (1906-1931). Even if Kiefer had operated a lodge at sometime during the

interim, it must have handled only a few guests, perhaps in tents, as the site does not indicate much more intensive use.

In 1925, a subdivision was made to the Elder property whereby 85/100ths of the property at the mouth of Elder Creek was separated and given to Harry Adkins, Metcalf's nephew. Two small cabins were built on this site, one reportedly in 1914 and the other in the 1920's. The property and cabins were purchased by Anne Cornwall Calias in 1931 and used primarily as a summer retreat, although three people did live in one of the cabins for one or two years in the early 1930's. Heath Angelo finally purchased this property in 1941.

2) The Walker Homestead. Under Metcalf's ownership, the Walker Homestead was rented out in exchange for the tenant working up split stuff on other of the lumber company's holdings. From 1916 to 1920, the Brown family resided at the Walker claim. Although records of additional tenants were not found, if there were tenants during the interim, residence was probably either intermittent or short in duration as conditions of general neglect characterized the homestead when the Browns arrived.

The seven-member Brown family lived on the Walker claim while John Brown worked up redwood products on properties now outside the preserve boundaries. Although

the woodwork provided the Browns with an income, their lifestyle and land-use were very similar to that of the Walkers. They raised a large garden in the area of the Walkers' former corn field, kept domestic animals including chickens, goats and a horse (See table 7), and even cultivated grain in the large lower field. Material improvements to the homestead were few and limited to the installation of a pipe that brought water to the house from the nearby creek and enclosing the entire site with a three-strand barbed wire fence in order to provide a fenced area to pasture their horse. The Browns utilized the barn, house, and shed complex above the house that the Walkers and Elders had left (See map 9 on page 89).

Perhaps the most significant of the Browns' land-use activities was their use of fire. They burned the whitethorn above the house and field every year regardless of the season. Bob Brown, the eldest Brown son, revealed a very casual attitude towards fire as he describes flipping matches in the grass by the house one day and having the grass catch fire and sweep into Walker Grove, burning out the large redwoods there. These same trees bear notable fire scars today. Such past use of fire may still have a significant influence on present vegetation patterns in the area and should be further studied through dendrochronology.

TABLE 7

NUMBERS OF RESIDENTS AT THE MAJOR HOMESTEAD SITES

	HOMESTEADS							TOTAL YEAR-ROUND RESIDENTS
Date	Poe	Walker	Elder	Davis	Wilderness Lodge	Horseshoe Bend	Zager	
1895	1	4w	0	0	0	0	0	1
1890	0	8w	0	0	3	0	0	3
1895	0	6w	3	0	7	4	0	14
1900	8-10	0	2	4	7	5+ 30s	0	26-28
1905	8-10	6	2	6	6+ 20s	4+ 30s	0	32-34
1910	0	0	0	6	6+ 20s	4+ 30s	6	22
1915	0	0	4i	6	6+ 20s	4+ 30s	8	24
1920	0	7	0	0	3+ 30s	2s	7i	10
1925	0	0	0	0	3+ 30s	2s	2	5
1930	1i	0	0	0	3	2s	2i	3
1935	0	0	5	0	3	2s	1	9
1940	0	0	4	0	0	2s	1	5
1945	0	0	4	0	0	2s	1	5
1950	0	0	4	0	4	2s	1	9
1955	0	0	4	0	>15i	>15i	1	5
1960	0	0	4	0	>15i	>15i	0	4
1965	0	0	4	0	>15i	>15i	0	4

w - Seasonal Residence, Winters Only

s - Vacationing Summer Guests

i - Intermittent Residence

3) The Lovejoy property. This 43.24 acre parcel, a subdivision of Loriston Lovejoy's original 160-acre homestead claim (See map 19), on the west side of the Eel River, opposite Wilderness Lodge and South Meadow, contained the area of the best redwoods on the Lovejoy Homestead and was purchased by John Metcalf in 1905. Although there was clearly no development or agriculture on this property during their years of ownership, it is uncertain whether or not Metcalf and Clark had some split products from the redwood timber there.

Today, as one walks through the area, evidence of "split stuff" production is found onthe narrow stream terrace immediately adjacent to the Eel River, across from Wilderness Lodge. Some of the smaller redwoods up slope have also been removed. In total, stumps and debris indicate that at least several large redwoods (four to five feet in diameter) and half a dozen smaller ones have been used, including one round that was being split into shakes and still waits to be finished. Additional evidence of split stuff activity might also be found underneath the dense thicket of Huckleberry growing on the site. The remainder of the property shows no signs of timbering activity but obvious signs of a large devastating fire were observed everywhere.

Whether this split stuff activity was the result

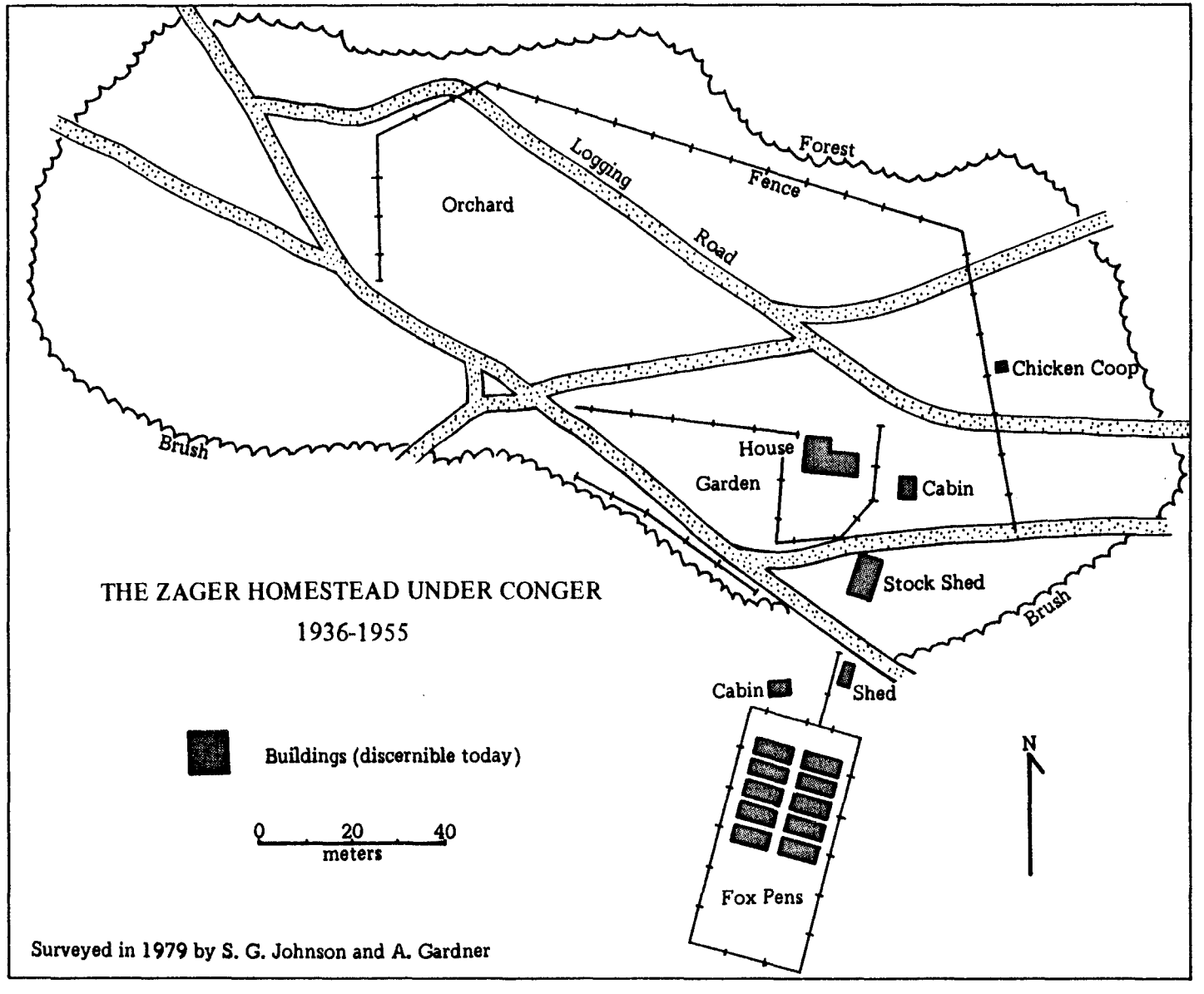
of Metcalf and Clark's ownership or Loriston Lovejoy's is not known. The Lovejoys did work up split stuff for their own improvements and, before the boarder business, for sale; so, it is quite conceivable that all of this activity dates from Loriston's time and that the period of Metcalf and Clark's ownership was one of no use.

This property changed hands several times and was eventually acquired by Heath Angelo in 1952.

The Zager Homestead. In 1928, Frank and Eva Zager sold their homestead to James and Emma Henderson and moved on. The Hendersons' period of ownership was short, only eight years, and little information was found concerning their period of residence. It is believed, however, that they lived on the property only for a few years and did not raise a garden or keep domestic animals. The Hendersons sold the property to Bob Conger in 1936.

Conger lived on the homestead, by himself, until about 1950. He raised a large garden and tried to earn needed cash by raising foxes, primarily silver-tip, and selling the pelts. To provide for this endeavor he constructed numerous fox sheds and pens (See map 21). He was also known to have kept about 50 to 100 goats since goat meat and blood was used as fox food. About a third of the goats were kept in an enclosed area around the homesite but the rest ran loose.

MAP 21


Forest
Fence
Logging
Road
Orchard
Chicken Coop
Brush
House
Garden
Cabin
Stock Shed
Brush
Cabin
Shed
THE ZAGER HOMESTEAD UNDER CONGER
1936-1955
Buildings (discernible today)
0 20 40
meters
N
Fox Pens
Surveyed in 1979 by S. G. Johnson and A. Gardner

Conger had the property logged about 1950 and, besides removing the timber, the logging operation significantly changed the homesite itself. Cat trails and haul roads lace the meadow opening and even the contour of the land at the homesite was changed.[9] In 1955, Bob Conger sold the property to Heath Angelo.

Records in the Mendocino County Recorder's Office raised an interesting question concerning the status of the black oak timber on the property. Frank and Eva Zager apparently sold the rights to their black oaks to W. H. Slankard in 1923.[10] This right was to be good for twenty years and included all additional rights, such as access, necessary for the cutting and removal of the timber. When Zager sold to Henderson in 1928, this right was still existent and it was specifically mentioned in the deed.[11] But when Henderson sold to Conger in 1936, the right was not mentioned.[12] The twenty-year period was not yet up, but sources and investigation of the site

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[9]Danny Zager, son of hemesteaders Frank and Emma Zager. Personal interview. Caost Range Preserve, California, January 17, 1976.

[10]Mendocino County Official Records, Book of Deeds 171, page 449, Mendocino County Recorder's Office, Ukiah, California.

[11]Ibid., Book 32, page 266.

[12]Ibid., Book 106, page 364.

do not reveal whether any such timber had ever been removed.

The Poe Homestead. When the Poe family left the Eel River area in 1908, they sold their homestead to William Blosser, who in 1926 sold the property to C. H. T. and Rose Witherill. It appears that Blosser made little use of the Poe house as it generally fell into disrepair and was later taken down by Heath Angelo. Rose Witherill, however, built a small redwood cabin in the Douglas fir and redwood forest along the road on the other side of the Eel River, opposite the Poe housesite (See map 22). This cabin was used intermittently until Heath Angelo purchased the property in 1931 and 1932.[13] No other use of the property was made during the period of Witherill's ownership and even remnants of the cabin are gone since Heath took it down and used the wood in his garage floor.

Other properties. Table 5 describes important ownership changes for properties not yet considered that eventually became part of the Angelo property. For the most part, these properties were passed between owners without improvements or alterations. Even in the case of

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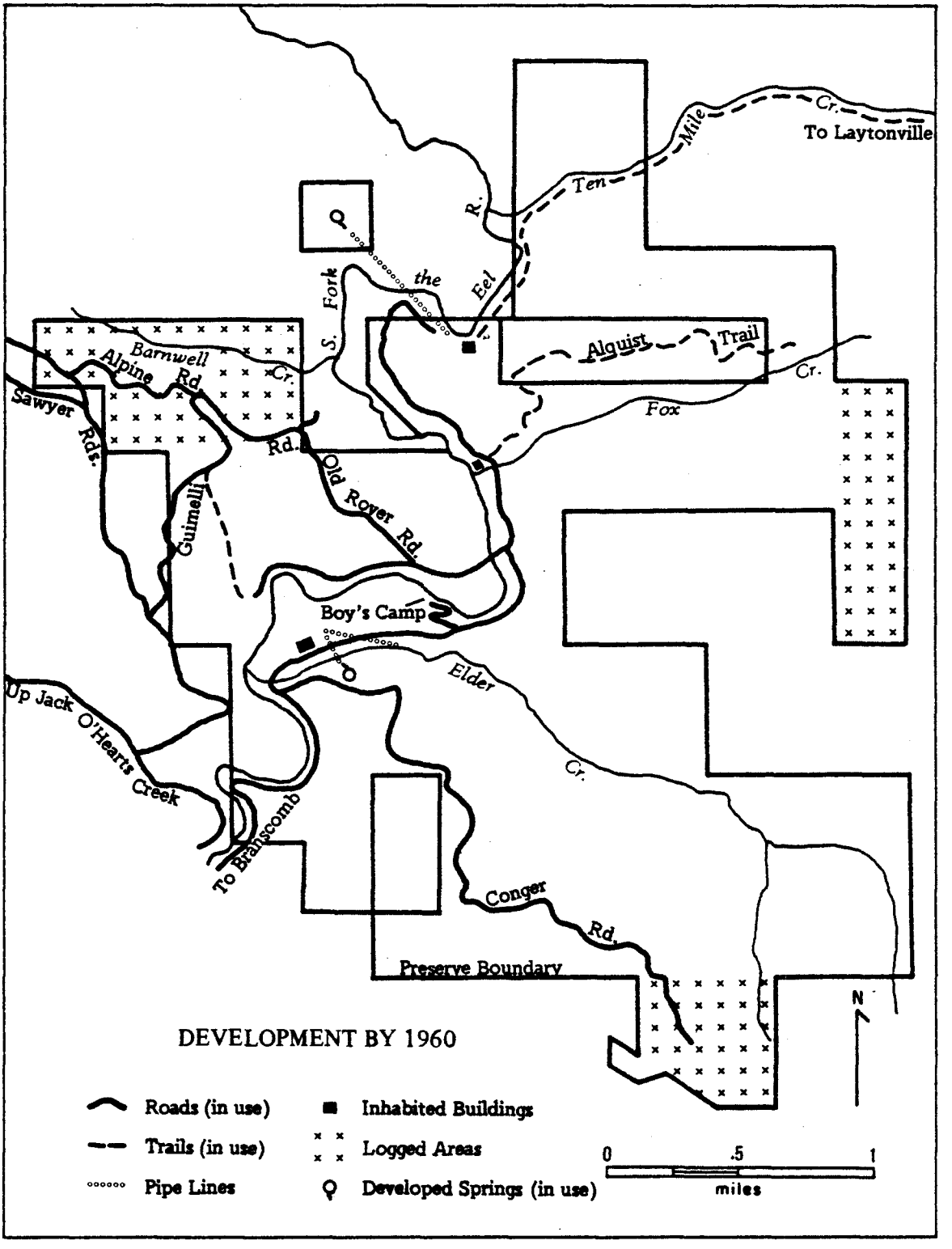
[13] When Rose Witherill sold to Angelo in 1931, she subdivided and kept a small portion that contained her cabin. This was the section Angelo purchased in 1932.

MAP 22


To Laytonville
Ten Mile Cr.
R.
the Eel
S. Fork
Alguist Trail
Barnwell Alpine Rd
Cr.
Sawyer Rds.
Rd.
Old Rover Rd.
Guimelli
Fox
Cr.
Boy's Camp
Elder
Cr.
Up Jack O'Hearts Creek
To Branscomb
Conger Rd.
Preserve Boundary
N
DEVELOPMENT BY 1960
Roads (in use)
Trails (in use)
Pipe Lines
Inhabited Buildings
Logged Areas
Developed Springs (in use)
0
.5
1
miles

the Davis homestead, which already had improvements, things were left virtually alone and existent improvements deteriorated. Angelo even removed some of the wood from the house for use at the Boy's Camp in 1941 (See page 206). Thus, the impacts of ownership for many of these properties during this period were negligible. The one exception to this is the Barnwell property that was logged about 1949 before Heath Angelo secured title in 1953 (See map 22).

Ownership of many of these properties may have been speculative, seeing as many of the owners were not even residents of the area. The complex title transfers of some of these properties further indicates the speculative nature of ownership. The title changes of the former Davis Homestead is a partiuclarly good example of this.

In November of 1915, James "Shorty" Davis and his wife, Lillie, sold their property to J. E. Rayner of Sonoma County[14] who, the next year, sold the property to Jeanne Loneragan, a widow in San Francisco,[15] who, in the same day, turned it over to J. Hay Smith, a widow in

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[14]Ibid., Book of Deeds 145, page 21.

[15]Ibid., Deeds 147, page 273.

Oakland.[16] J. Hay Smith sold it back to Lonergan in a month,[17] who, in two days, sold it to Anna M. Woodrow.[18] In 1919, less than three years later, a suit was filed in Mendocino County Superior Court by Sheriff H. C. Haas on the part of plaintiff D. C. Kennard, against J. Hay Smith, Anna Woodrow and a Roy H. Blosser. The court ordered, on June 28, 1919, that the property, along with several other properties not in the area, be sold at auction ot the highest bidder, who was the plaintiff, D. C. Kennard.[19] Kennard was required to hold the property for one year before selling it. When he did sell, in August of 1920, Sheriff Haas was the buyer.[20] At this

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[16]Ibid.

[17]Ibid., Deeds 147, page 460.

[18]Ibid., Deeds 147, page 461.

[19]Ibid., Book of Official Records 68, page 40.

[20]Ibid., Official Records 28, page 72.

point, ownership changes slowed down, and the unknown events that caused the previous flury of activity must have ended. Haas held the property for three years before selling to William E. Elliot in 1923,[21] who sold the property to W. J. Kiefer in 1927.[22] Kiefer later sold the property to Angelo in several pieces at different times, the last being in 1952.

Map 22 shows that many of the properties that ended up under Angelo ownership were more isolated from established access routes than the more fully utilized properties along the Eel River Corridor, and also had less development potential because of their steep topography. These two factors, isolation and topography, relegated these properties to an inactive state, as if their owners were waiting for another time when some use would be possible. In like areas of Mendocino County, that "other" use was the advent of large-scale logging operations made possible by caterpillar tractor, truck and chain saw, that arrived in the Branscomb area in about the 1940's and 50's. By this time, however,

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[21]Ibid., Official Records 162, page 311.

[22]Ibid, Official Records 15, page 253.

most of these properties, except for the Barnwell property, were already in the ownership of Heath and Marjorie Angelo who opposed the logging practices of the time, and consequently protected their land.

The Angelo Period of Land-use

Heath and Marjorie Angelo arrived in the preserve area in 1931 and purchased what was the Elder Homestead from the financially failing Metcalf Land Company. During the next twenty years, the Angelos continued to acquire land until they controlled the areas around Skunk, Elder and Barnwell Creeks (map 19). In spite of this large acreage, land use was focused primarily on the property around the homesite, although firewood was cut on the other properties as well.

Property acquisition. Table 5 and map 19 describe the properties and the dates that land was acquired by Heath and Marjorie Angelo in the preserve area. Not included are purchases of water rights and small parcels that would not show up on such a small map.

Land use at Oak Grove. The Angelos came to the Eel River area looking for an adequate site to provide for a self-sufficient, pioneer-type lifestyle, a dream Heath Angelo had had since boyhood. They initially

considered a number of areas, analyzing the advantages and disadvantages of each for the achievement of their self-sufficiency and made unsuccessful offers on two properties before buying Oak Grove, the former Elder homestead.

When they arrived, Mr. Angelo owned a business in the Bay Area, that he managed in absentia, that provided him with an income; he consequently did not face the problem of earning cash that had become such an obstacle to the earlier settelrs. In fact, Heath was able to employ several individuals even during the depression, and thereby free himself from some of the time demands of the lifestyle he chose. With the help of from one to four employees at a time, the Angelos improved and added to the Oak Grove site, building towards the lifestyle and dream they envisioned.

1931 to 1941 were the years of the Angelo's most active land use. During this time the house was added to, outbuildings were constructed, fences re-built, houses for caretakers built, a big garden raised and the big field put back under the cultivation of grain for stock. Numerous farm animals were also kept during this period although their types and numbers varied according to the employees Heath had. Heath had a basic arrangement with his employees concerning stock: whatever animals were desired by an employee

were purchased by Heath who also purchased any necessary feed. The employee then cared for the animal and did any slaughtering and butchering and then all products were split evenly between Heath and the employee. Although the number of domestic animals varied considerably, sometimes it was quite large with up to several hundred chickens along with goats, hogs, cattle and horses (See table 6).

Land use on other Angelo properties. Land use on other of the properties purchased by Heath and Marjorie Angelo was very light and limited to the pasturing of some stock in the lower Walker meadow and the removal of fire wood and wood from old buildings to re-use. For example, wood from the Walker cabin was used in building Heath's laundry and wood from Rose Witherill's cabin was used in the garage floor. During the summers of 1940 and 1941, Vincent Brown (owner and editor of Naturegraph Company, Healdsburg, California) ran a camp for boys on part of the Angelo property, on a wooded river terrace on the Eel River behind the Angelos' homesite (See map 22). This place today is still called the "Boys' Camp." Wood, taken from the Davis cabin, was used in establishing the campsites for this program.

All of these land-use activities are of low

and impact. The major impact the Angelos had on these additional properties was the construction of new roads, thereby expanding the existing road network and opening new areas to vehicle travel.

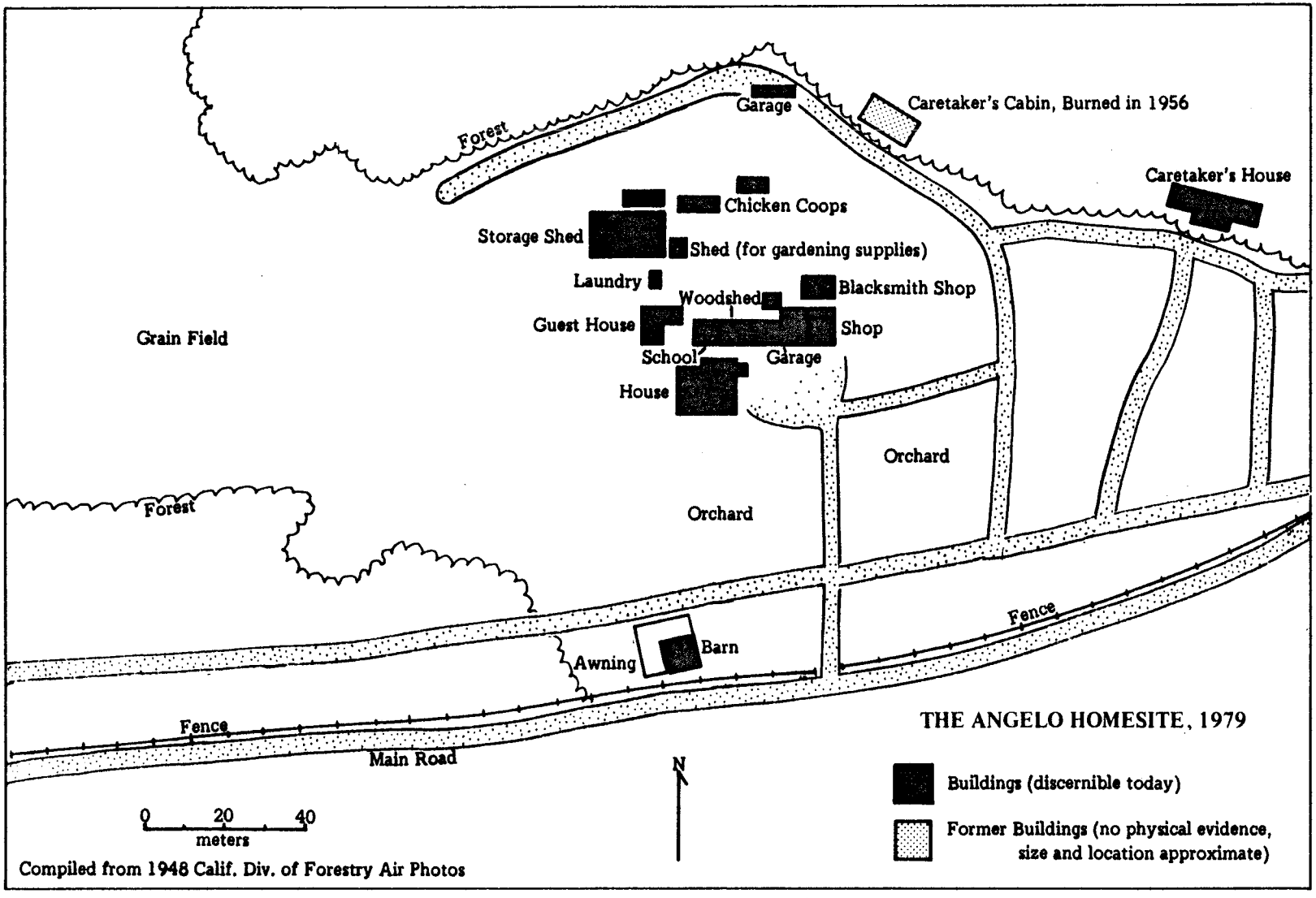
Map 23 shows the approximate routes of roads and trails built by the Angelos. Most of the roads are still passable by vehicle today, but many of the trails cannot even be found. The road names, dates and reasons for construction follows:

1) The Walker Road is basically the original road as built by Stephen and Charlie Elder in the mid-1880's. The initial route varied slightly from the present route in that it went around the Lower Walker Meadow instead of through it as it does today. Heath Angelo had this road re-worked a number of times to keep it open to vehicles. The last time was in 1957. Parts of this road are still passable today but a slide has closed the section between the two Walker Meadows.

2) The road to the Boys' Camp was built in 1940 to provide vehicle access to Vincent Brown's camp.

3) The Conger Road was built in 1956 or 57 in order to provide access to Angelos' newly pruchased "Conger Palce," the former Zager homestead. The road is said to follow the approximate route of the Zager children's trail to school.

MAP 23


Garage
Caretaker's Cabin, Burned in 1956
Forest
Caretaker's House
Chicken Coops
Storage Shed
Shed (for gardening supplies)
Laundry
Blacksmith Shop
Woodshed
Guest House
Shop
Grain Field
School
Garage
House
Orchard
Forest
Orchard
Fence
Awning
Barn
Fence
Main Road
0 20 40
meters
N
THE ANGELO HOMESITE, 1979
Buildings (discernible today)
Former Buildings (no physical evidence, size and location approximate)
Compiled from 1948 Calif. Div. of Forestry Air Photos

4) The old Rover Road and Guimelli Road. The Guimelli Road was built by a logger of that name who, in the process of logging land adjacent to some of Heath's, built part of a logging road across Heath's property. Heath then had the old Rover Road built up to the Guimelli Road in 1956 to acquire access to the trespass in hopes of defending his property. This issue eventually went to court with Angelo receiving a judgement in 1954.[23]

5) The Alpine Road was built by Angelo in 1956 or 1957 to protect another parcel of property suffering from trespass by another illegally-placed logging road. Heath calls this the Sawyer Road. Confrontation on this issue never occurred since Sawyer then built a bypass around Heath's property (See Map 22).

Miscellaneous points of note. Interviews with Heath Angelo revealed a miscellany of other land-use information worthy of mention here.

1) Landscape description. Heath described the country as being generally much nore open than it is today and attributes it to regular burning. The under-story of the forest was clear of shrubs and young trees and there were no fir trees on Black Oak Mountain.

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[23]Op. cit., Official Records 386, page 119.

At that time also, the streams were lined with willow, alder and yew, much of which was reportedly washed out by the floods of 1955 and 1964. In terms of wildlife, Heath notes that porcupines were not seen until after 1940, an observation that generally agrees with statements made by others who say that porcupines did not arrive until after logging began.

2) Fire. Although Heath never used fire himself, he witnessed many fires set by others. Fires were most common in the 1930's, before attitudes towards fire began to change in the 1940's and 50's. During 1933-34 alone, Heath saw seven fires set on Black Oak Mountain. About 1938, a fire blackened forty or fifty acres along Elkhorn Ridge and another fire in section 28 burned sixty acres in Elder Creek. In 1950, a big fire burned through the area of today's young knobcone pine (Pinus attenuata) forest on the ridge, west of the Eel River. This occurred shortly after Guimelli's logging oepration and Heath suspected that the blaze had been set by the loggers.[24]

Most fires occurred in the fall and were allegedly set to increase deer browse. Heath said that

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[24]Burning after logging was a common early practice. See Emanuel Fritz, "The Role of Fire in the Redwood Region," Journal of Forestry, XXIX (1931), pp. 939-950.

fires generally burned the hills and ridges and he does not recall any fires burning by streams. In Elder Creek most fires started on the north side of the creek, the south flank of Black Oak Mountain. He only remembers one fire burning on the south ridge and that fire burned quite a ways down the north side of the ridge.

By the end of the 1930's, attitudes towards fire began to change and, although some individuals continued to set fires, the number of fires generally declined throughout the 1940's and 50's.

3) Hunting and trapping. Before the arrival of The Nature Conservancy, people from the Angelo property hunted deer, hogs, some gray squirrels, jack rabbits, cottontail and quail. An employee between 1932 and 1938 also trapped racoon, mink, bobcat and fox but never sold the pelts.

4) Use of the native plants. Although berries, particularly huckleberries (Vaccinium ovatum), were gathered for use in pies and one employee gathered Yerba buena (Satureja douglasii), for tea, not much use was made of the native plants of the area.

The Arrival of The Nature Conservancy

In the early 1950's, property taxes, specifically the ad valorum timber taxes, became so high that the Angelos sought a way they might see their land protected without continuing their ownership. In 1956, the Angelos contacted The Nature Conservancy, a then little-known, national, non-profit, conservation organization, and negotiations for the property began. In 1959, an agreement was reached that transferred ownership of Angelos' critical land holdings to The Nature Conservancy, but with the Angelo family maintianing a three-generation use right (life tenancy) in the Angelo dwelling area.

In 1961, a similar agreement was reached with Camp Adventure. Title to the land was turned over to The Nature Conservancy with the Camp Adventure principals maintaining a use right on the house at Horseshoe Bend for the rest of their lives. Also in 1961, the former Van Homestead, was purchased from the Buckinghams. This property had been logged by this time.

The final act in the initial acquisition of the preserve also occurred in 1961, when all rights to the timber in Fox Creek were purchased from the Gould Timber Company, thereby protecting Fox Creek from later logging.

As can be seen in map 19, in contrast to the many original homesteads and many intervening owners, the land was held basically by two land owners when The Nature Conservancy came in to establish the Coast Range Preserve. Establishment of the preserve finally united the property under a single ownership that would be responsible for land-use policies and practices in the future.

Summary

The interval between the close of the Homestead Period and the arrival of The Nature Conservancy was one characterized by gradually declining numbers of inhabitants, increased seasonality of residence and reduced intensity of land-use. Attempts at a self-sufficient homestead essentially disappeared with the homestead period itself since those few who did maintain a similar lifestyle depended on something other than the homestead for their primary source of livelihood.

Those land uses that did develop on the old homesteads became increasingly dependent on recreation and leisure-time activities and are representative of the types of uses that became popular on other old homesteads in similarly remote locations of Mendocino County. The resort business had begun to decline by the end of the Homestead Period because of the automobile,

but it received a revival during Prohibition because of the isolation and availability of locally produced moonshine. The resort business did finally fold when Prohibition went out.

The maintenance of a summer home in the country for the elite from the Mendocino Coast, a pattern that developed throughout the county, was well represented on the preserve by the ownership of Horseshoe Bend by the Sinclairs. Hunting clubs which also became popular in like areas of the county, briefly came into the preserve area with the arrival of Slaughtenhaup and his dream to connect the Wilderness Lodge property with that of the Brushy Mt. Lodge Hunting Club. Likewise, the operation of summer youth camps, represented on the preserve by the activities of Vincent Brown and Camp Adventure, were also popular in other such areas of the county at this time.

All of these activities, aside from hunting, were focused on the prime homestead sites on the river terraces, thus continuing the pattern of inhabitance established by the Kato Indians hundreds of years before. But now, perhaps because of relative isolation, the settlement pattern began to fade as uses became seasonal, residents became fewer, and the intensity of land use declined. The extensive outlying areas of chaparral

and timber located at higher elevations away from the river, were used only by a few hunters. Large-scale logging operations would have followed if the Angelos had not already arrived and protected their land. But the preserve did not completely escape the influence of logging as the Barnwell property, the old Zager and Van homesteads, and surrounding countryside were cut.

The arrival of The Nature Conservancy and establishment of the preserve instituted several important land-use patterns for the future. First, it halted settlement and land-use changes in the preserve as dictated by local trends or economic changes. However, The Nature Conservancy's management program established its own continuing land-use pattern, one of low intensity recreation (hiking and swimming), and education (school visits, nature walks, and research). To accommodate these, occupance will continue at "Wilderness Lodge," the cabin built by Harmor in the early 1950's, and may develop at Horseshoe Bend. In addition, residence will presumably continue at the Angelo homesite since the deed of transfer from Angelo to The Nature Conservancy established a three-generation use right on the site. Secondly, The Nature Conservancy's management of the preserve as a research natural area, institutes a non-manipulative management procedure that contrasts with

both the management of the surrounding countryside and the past management of the preserve area itself by the settlers and perhaps even by the Indians with their fire technology. Assuming continued management of the preserve by The Nature Conservancy following current policies, a comparatively uniform land-use pattern of protection, research, education and light recreation will continue for all properties now enclosed within preserve boundaries.

CHAPTER VI

CONCLUSION

Chapter one of this thesis described the importance of The Nature Conservancy's Coast Range Preserve as a field research site for the biological and physical sciences and identified a need for basic information describing man's settlement and land use activities in that area that would help researchers distinguish which features in the landscape are natural and which are man-made. This information is essential to all later research on the natural history of the area. In an effort to provide such data, this thesis addressed the question: What is the location and areal extent of man's occupance and land use in the preserve area and how did it vary through time? Answering this question required exploring the details of land-use patterns throughout man's settlement and sequential occupance of the preserve to reveal details such as what the numbers of people and their domestic animals have been, and the type, intensity and areal manifestations of man's various land-use practices throughout his period of occupancy.

The answers to these questions were explored in chapters three through five of this thesis. Chapter three dealt with the period of aboriginal settlement, while chapter four covered the Homesteading Period and chapter five dealt with the interval from the close of the Homestead Period to the present. Although the basic questions of this thesis were explored in detail in these chapters, it is useful at this point to review and summarize the findings of these chapters by addressing the questions of this thesis again and to derive answers from the data presented this thesis.

What Is the Location and Areal Extent of Man's Occupance and Land Use in This Area and How Did It Vary through Time?

Throughout this study, continuous changes in the character of inhabitance and land use of the preserve area has been shown. The inhabitants themselves have changed, as have their numbers, sources of livelihood, and numerous aspects of their different land uses. In chapter three, we saw that the Kato Indians used the preserve area for the subsistance activities of hunting, fishing and gathering. Their residence was probably seasonal, spring through fall, and their numbers were not very high with perhaps a few families camping together at different spots for varying lengths of time. The future sites of Wilderness Lodge and the

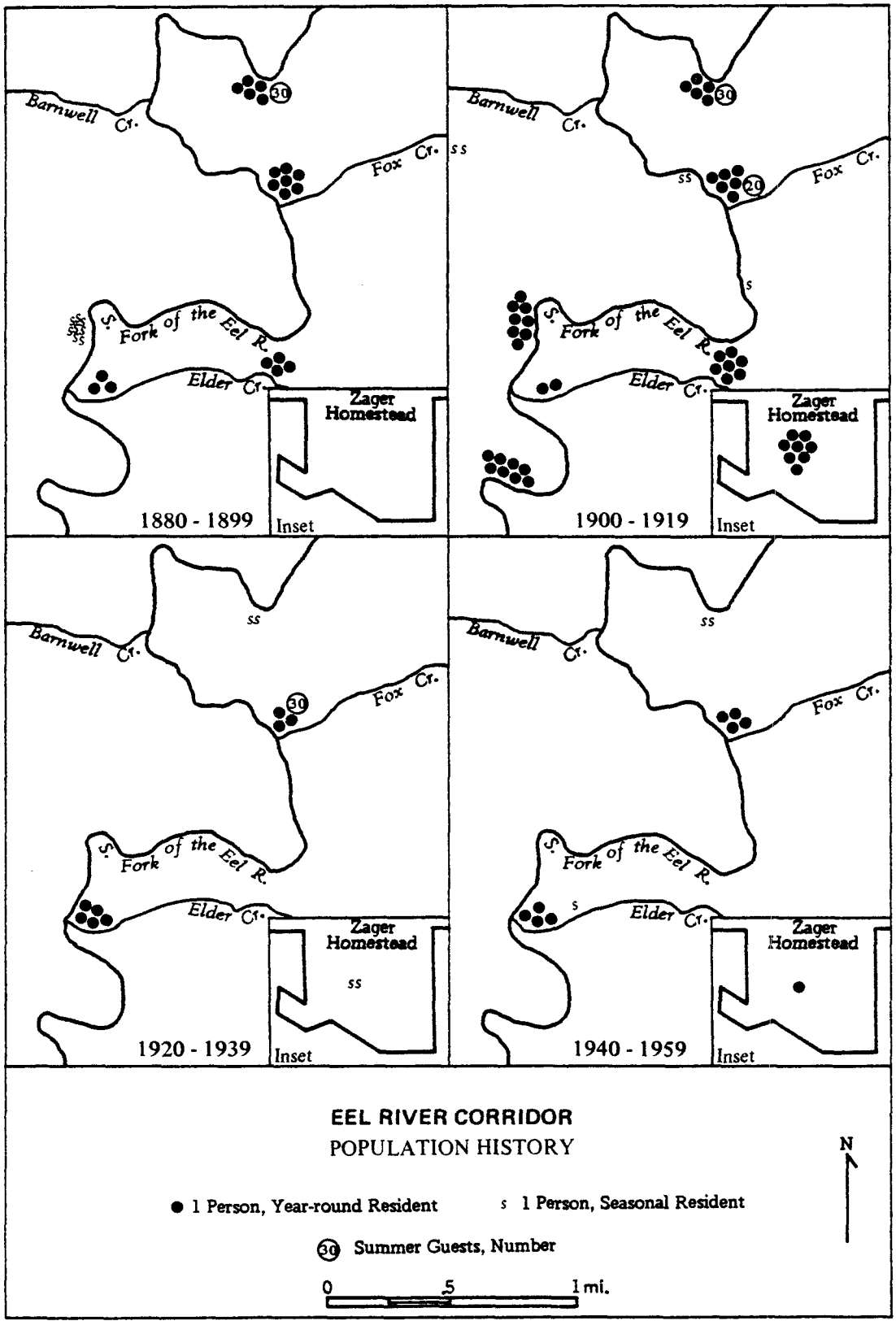
Elder Homestead may have been preferred spots, as both sites have yielded artifacts indicating both men's and women's activities, but artifacts found on the preserve have also indicated that there were several additional hunting camps that were probably used periodically by small hunting groups (See map 6). Although artifacts found thus far indicate that the Eel River Corridor was the focus of Indian activity, archaeologists suggest that sites may yet be found in the higher elevations.

The intensity of settlement in terms of population numbers and use and manipulation of the land during the Indian Period was not high when compared to the settlement and cultivation during the Homesteading Period. Aside from the possible accidental introductions of plant species, hunting, fishing and gathering activities alone probably had a negligible effect on the preserve environment. But if, as this thesis argues, the Indians employed fire as a means to manipulate vegetational zones to increase yields of useful materials, their period of occupance did have a significant impact on the landscape because their burning may have shaped the mosaic of vegetational zones that the settlers found upon arrival and, which to some extent, still persist today. This mosaic has influenced land-use choices made by all later occupants.

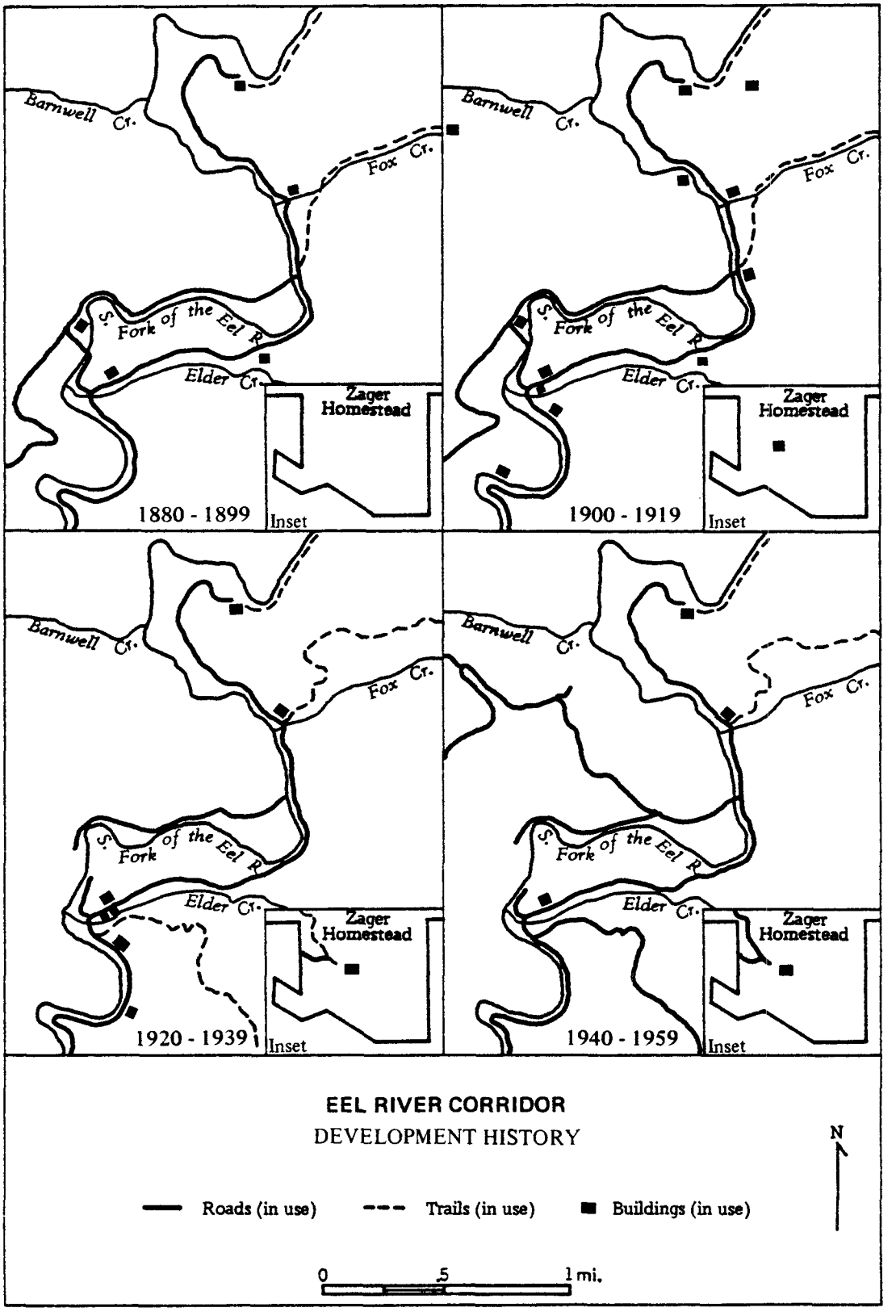
The Homestead Period, from about 1885 to 1925, was the period of greatest density of inhabitants and intensity of land use (See maps 24 through 27). Although some of the residence was seasonal, much of it was year-round and undoubtedly there were more people in the preserve area at any given time then, than at any time before or since. A number of the homesteaders did try to develop self-sufficient homesteads and their land use was necessarily intensive, involving cultivation, grazing, clearing, the building of homes and outbuildings, fencing for their numerous domestic animals, and the development of a road and trail network (maps 25 and 26). Although locations were possibly influenced by previous Indian burning, the layout of development--fields, pasture and buildings connected by roads--was established at this time (map 25).

Land use was most extensive and intensive during this period, but there were also significant areas of the preserve that remained little influenced by human settlement because, as shown by the maps, use was characteristically concentrated on the more level lands on the terraces adjacent to the Eel River--the same areas used by the Indians before. Even in some of these areas, in the more marginal spots, residence and land use declined somewhat earlier than on the prime sites and gave way to a pattern more like that of the next

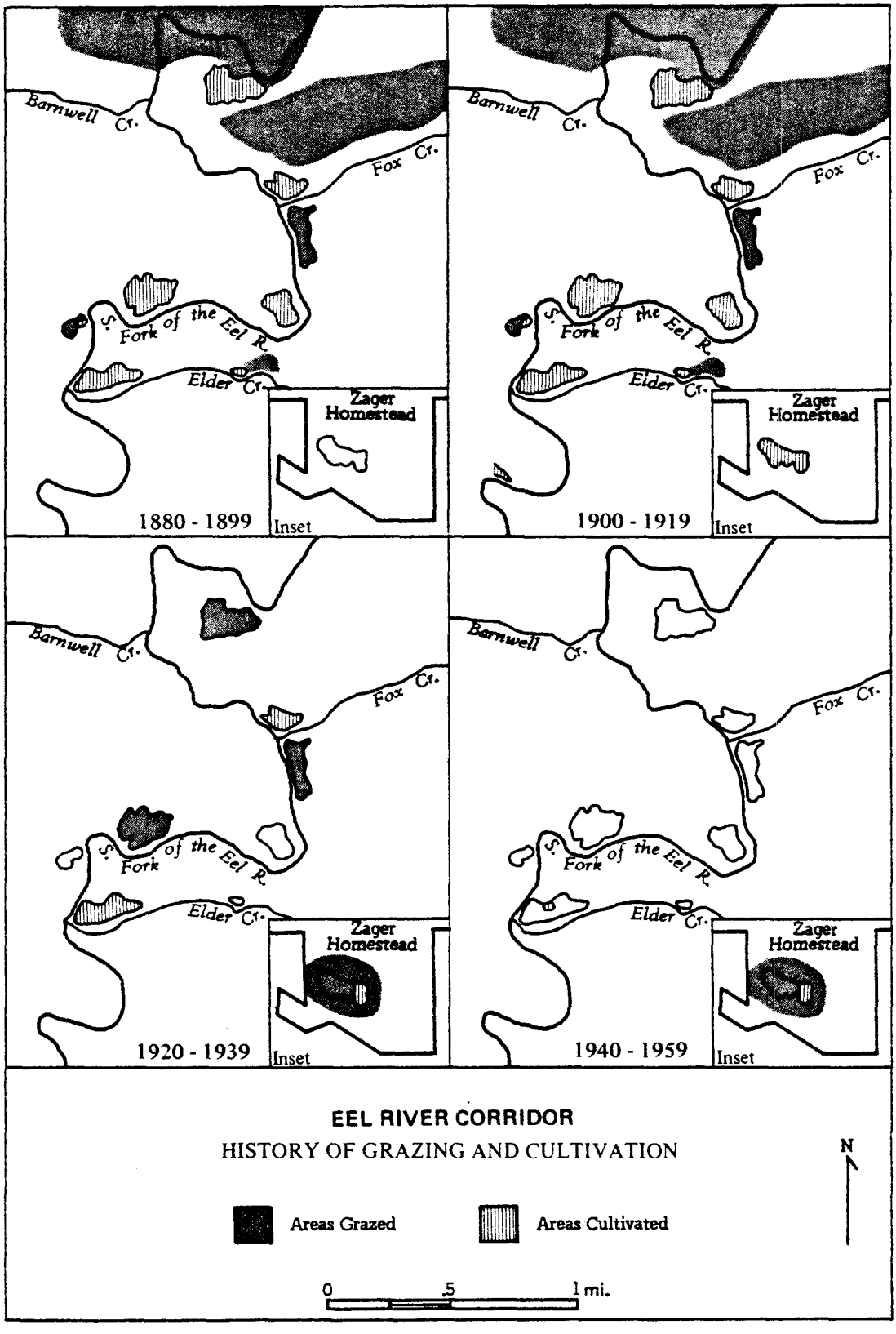
MAP 24


Barnwell Cr.
Fox Cr.
S. Fork of the Eel R.
Elder Cr.
Zager Homestead
1880 - 1899
Inset
1900 - 1919
1920 - 1939
1940 - 1959
EEL RIVER CORRIDOR
POPULATION HISTORY
N
● 1 Person, Year-round Resident
s 1 Person, Seasonal Resident
30 Summer Guests, Number
0 .5 1 mi.

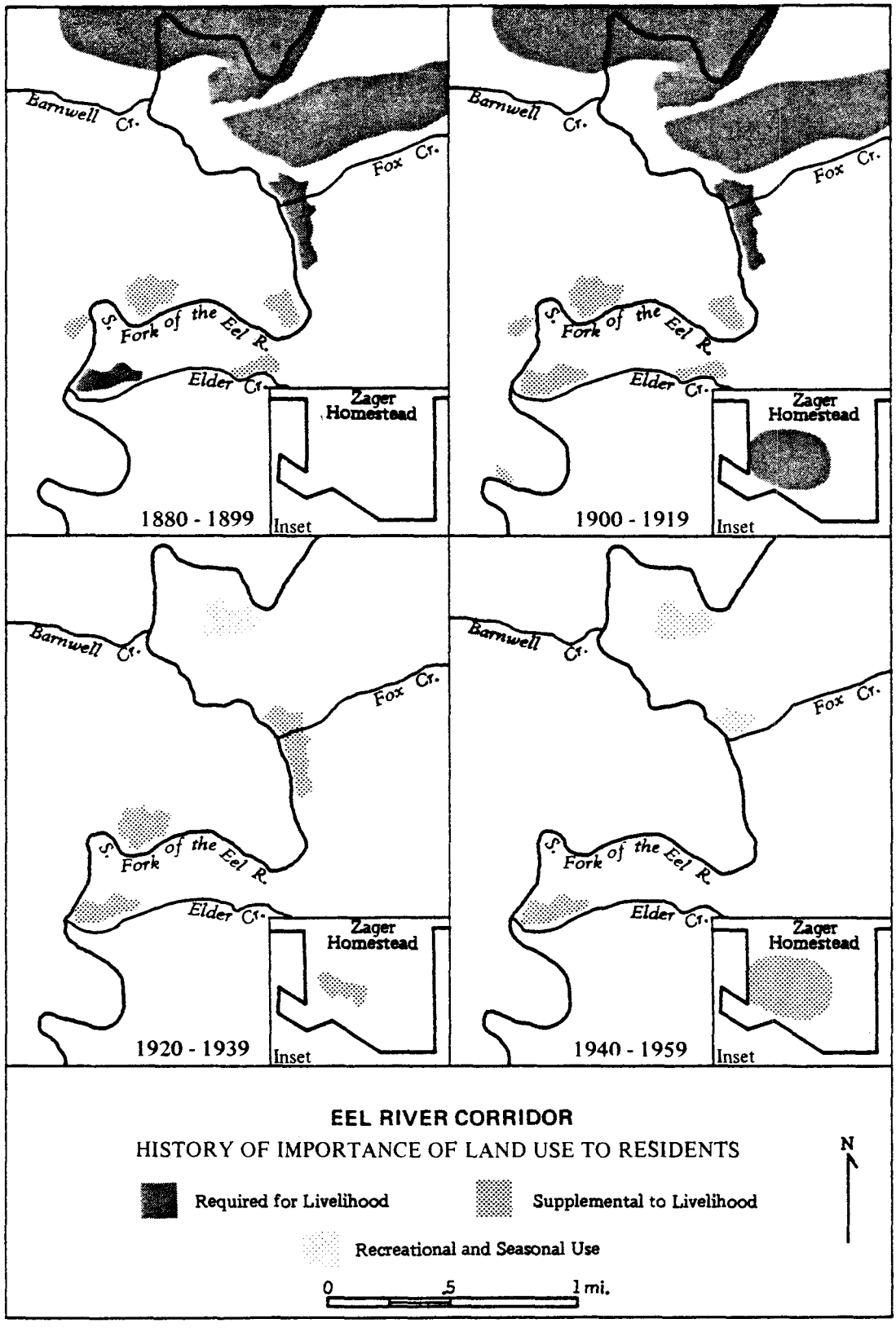
MAP 25


Barnwell Cr.
Fox Cr.
S. Fork of the Eel R.
Elder Cr.
Zager Homestead
1880 - 1899
Inset
1900 - 1919
1920 - 1939
1940 - 1959
EEL RIVER CORRIDOR
DEVELOPMENT HISTORY
N
Roads (in use)
Trails (in use)
Buildings (in use)
0
.5
1 mi.

MAP 26


Barnwell Cr.
Fox Cr.
S. Fork of the Eel R.
Elder Cr.
Zager Homestead
1880 - 1899
Inset
1900 - 1919
1920 - 1939
1940 - 1959
EEL RIVER CORRIDOR
HISTORY OF GRAZING AND CULTIVATION
Areas Grazed
Areas Cultivated
N
0
.5
1 mi.

MAP 27


Barnwell Cr.
Fox Cr.
S. Fork of the Eel R.
Elder Cr.
Zager Homestead
1880 - 1899
Inset
1900 - 1919
1920 - 1939
1940 - 1959
EEL RIVER CORRIDOR
HISTORY OF IMPORTANCE OF LAND USE TO RESIDENTS
Required for Livelihood
Supplemental to Livelihood
Recreational and Seasonal Use
N
0
.5
1 mi.

period, when the homesteads were abandoned or used only seasonally and the settlers did not depend on them exclusively for their livelihoods.

During the years between the close of the Homestead Period and the establishment of the preserve, inhabitance declined and became seasonal (map 24), and the intensity of land use lessened as uses became predominantly recreational rather than essential to livelihoods (map 27). Correspondingly, the acreage cultivated and grazed declined substantially, as did the numbers of domestic animals. With the exception of several roads built by the Angelos in the 1940's and 1950's, very little new development occurred during these years, and the imprint of man on this landscape generally faded as existing developments suffered from neglect (map 25). What little land use did occur was concentrated on the prime sites along the Eel River, with activities having a negligible influence on the outlying areas. The one exception to this was the arrival of logging in the 1940's and 1950's, but by this time most of the lands now contained within the preserve were already in the hands of individuals who protected them; as a result, only about 380 acres were logged (map 22 on page 200).

As previously mentioned, the dominant uses for lands in the preserve area during these years were recrea-

tional (map 27). Activities like summer camps for youth, the development of hunting clubs, and the maintenance of a summer home in the country occurred here as they also did in other similarly-remote areas of the county.

With the arrival of The Nature Conservancy, land use continued to decline, but the pattern of development established by the first homesteaders still exerts an influence, as it is the major homestead sites (Wilderness Lodge, Horseshoe Bend and the Angelo Homesite) that have become the foci of present activity and residence under The Nature Conservancy's research, education and public use programs.

Population, Type, Intensity, and Areal Manifestations of Man's Land Use Practices

Maps 24 through 27 illustrate the areal manifestations and changes in land-use characteristics discussed. Included are comparative maps on population, development, land-use types, and importance of land use to residents as they occurred from 1880 to 1959.

The maps on population and development (maps 24 and 25) show that the period between 1900 and 1920 was the most active and that a significant decline occurred after the twenties. Accompanying this decline in population and development, and perhaps foreshadowing it, was the fact that, after the peak of the homesteading

period, the number of residents attempting exclusive dependence on their homesteads declined until 1920, when none remained (map 27).

Because of the change in population numbers and land-use types, and a reduction of dependency on the land, the intensity of use made of the land changed and and declined also, going from extensive grazing and cultivation during the earlier periods to lessened cultivation and more grazing in the middle periods, to limited agricultural uses (primarily gardens), logging, and the introduction of recreational uses in the 1940's through 1960's (maps 26 and 27).

The maps in this study reveal a number of other interesting patterns and points also worth noting. First, throughout the period of investigation, specific sites were used in only part of the area now encompassed by the preserve. The area of use was consistently the Eel River Corridor with a concentration on the Elder and Wilderness Lodge sites. Even during the peak of the Homestead Period, for those claims that included no land in the Eel River Corridor, homestead-type land-use activities did not develop.

It is evident that the land alone did not dictate uses because types of use were also dictated by the notions of those inhabitants that passed through it. Although we can only speculate as to what types

of land use (for example, hunting and gathering, cultivation, grazing, or recreation) possessed the greatest natural potential for productivity, the actual use that was made of the land was the result of the culture of the user. So, the Indian hunted and gathered, the homesteader tried mixed farming, and later residents tried various reacreational pursuits. Although in all of these cases the land possessed adequate potential to encourage settlement and use by these various culture groups, actual land use choices and changes were essentially made because the inhabitants came to the area with certain activities in mind.

Two factors that have had an overriding influence on land uses in the preserve are the Homestead Act itself and the area's general isolation. The Homestead Act of 1862 mandated an attempt at mixed farming and, while such activities may or may not have developed anyway, it is doubtful that they would have developed to the degree that was attempted during the peak of the Homestead Period, between 1900 and 1920. The rapid decline after the twenties suggests that these activities were inappropriate in some way for these sites. The early pattern of land tenancy, with numerous 160-acre ownerships, was also dictated by the Homestead Act and began to consolidate into single large holdings as the

homesteads became abandoned and sold.

The area's general isolation exerted a continual influence on land use. First, it prevented early logging activities, such as those practiced on the Mendocino Coast during the second half of the Nineteenth Century. Remoteness also delayed settlement, so that by the time tanbarking and tie camps did reach the area, the homestead fervor was in full swing and many of those who arrived wanted to settle and "prove up" to acquire land. Chapter two of this thesis described two factors that limit the agricultural potential of this area: scarcity of flat land and a short growing season, the latter exagerated in the valleys by the effects of cold air drain. But, looking at the land-use history of the area, it seems that these were not the primary reasons agriculture was abandoned, because the homesteaders report that their gardens, raising of grain, and production of stock was more than satisfactory. Isolation itself emerges as the most probable limiting factor. The arable land was not extensive enough to induce greater local settlement (thus providing a local market), and its on-the-road-to-nowhere location prevented the development of major transportation routes through the area. The resultant travel times added both trouble and cost to the settlers' efforts to move goods and in the end were

just too great to be worthwhile. Had the preserve been somewhat less isolated, settlement and agriculture may well have persisted, making the resultant settlement and land-use history of the area considerably different. But the preserve area instead became generally uninhabited aside from resort lodges and other recreational uses.

Isolation also delayed large-scale logging operations so that by the time they did arrive, the chance ownership by the Angelos, Camp Adventure and eventually The Nature Conservancy protected the preserve area from the effects of this wave of logging activity.

Maps 24 through 27 reveal two basic patterns of impact left by past inhabitants. The first, and most obvious, is the pattern of habitation and development. It persists in the form of artifacts, roads, buildings, water and other development, all obvious indicators of past residence. The second pattern is that left by activities to acquire sustenance. This pattern is subtle, as the only inidcators are the altered vegetation patterns in areas that were once cultivated, grazed or burned. The meadows themselves are the results of these activities but the extent of grazing and burning beyond the meadows is difficult to discover by trying to interpret vegetation patterns alone.

The maps included here help in that they show areas where such activities were known to have occurred but, because of imperfect source information, they may not show all areas of such activity.

How Undisturbed Is the Preserve? Which Are Man-Caused Features and Which Are Natural Ones?

In the introduction to this thesis, the question was raised as to just how undisturbed the preserve is. When compared to surrounding lands managed and harvested for their timber resources, the preserve area does indeed emerge as a relatively untouched island. But, in light of the land-use history detailed in the preceding chapters, it is clear that this landscape is not really untouched and definitely bears the mark of man. This influence is often disguised, as time and non-use have allowed nature to hide many signs of disturbance, but the pattern of past use is still evident.

These patterns will persist most strongly along the Eel River corridor where abandoned fields, roads and development occurred. Even some timber utilization for "split stuff" and fire wood was exploited here as scattered stumps will testify. But, in the outlying areas, impact of the land-use history is more negligible, because, aside from burning by both the Indians and

settlers, and logging in a few spots, little use of the land was made. In terms of natural character, perhaps the most undisturbed areas of the preserve are those forests along Elder and Fox Creeks, outside the Eel River corridor, where man did not live and where the effects of burning were rarely felt.

However, altering the vegetation cover through burning and cessation of burning has other significant effects that are not often considered. Since brushland evapotranspirates considerably less water than the mixed evergreen forest that is rapidly becoming established in formerly burned and brushy areas, cessation of burning and consequent changes in vegetation cover have probably reduced the amount of surface water flow from springs and streams. This idea is supported by observations of a spring on the Walkers' homestead at "Chokecherry Flat." This spring, slightly uphill from the barn, was the most important water supply on the claim, because throughout the years of early inhabitance it was the only water source that flowed all year. Yet, through the last year of observation, no water has ever been found coming from this spring. Considering that the hillsides above the spring that were then vegetated with primarily whitethorn

brush support mixed evergreen forest today, this reduction in spring flow is not surprising.

This observation has significant ramifications for the entire preserve area. Settlers' descriptions and early photographs have shown that considerable acreage, now in mixed evergreen forest, was primarily brushland during the homesteading period, due to the burning practices of the settlers and, probably, the Indians before them. If the change in vegetation from brushland to mixed evergreen forest could have dried up the observed spring at the former Walker claim, could the similar change in vegetation cover, occurring throughout the preserve area today similarly affect other springs and streams? Not only is this possible, it is probable.

Although the signs of man's occupance will persist, they will change. The meadows and vegetatioon patterns, created by the land-use history, will evolve through plant succession, to some other condition and, although obvious signs of human disturbance have and will continue to face, these successional patterns themselves will attest to man's influence here for many years to come.

Apparently then, the preserve is not an undisturbed island. But, then where in California, other

than the highest mountain peaks and the driest desert reaches, has the hand of man not been felt at least through his burning?

In terms of recent disturbance, logging being the most dramatic, most of the preserve has indeed been spared. The influence of settlement and accompanying farming, grazing and building, has really influenced only a portion of the acreage of the preserve, that primarily along the Eel River corridor. For much of the rest of the preserve, perhaps several thousand years of an aboriginal burning regime may have been instrumental in determining what grows there now. But the scanty existent information is inadequate to answer this queation.

Considering that much of the California landscape may have developed under an aboriginal burning regime, one might be tempted to conisder such man-caused fires an integral part of the evolved ecology rather than as "disturbances."[1] If this premise is accepted, the preserve area does emerge as a relatively undisturbed environment with the mark of man, his

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[1]Henry T. Lewis, Patterns of Indian Burning in California: Ecology and Ethnohistory (California: Ballena Press, 1973).

settlement and land-use activities limited primarily to the Eel River Corridor.

Suggestions for Future Research

There are a number of areas where the information in this study be supplemented. First, the collection of data concerning the settlers' land uses and factors influencing their land-use choices should continue because new and future sources could well reveal information of consequence to this study. More information on the Kato Indians is also needed in order to develop a more complete picture of their period of occupancy. A good beginning in this area would be a thorough survey of the preserve for additional Indian sites, to obtain the information they may yield in terms of Indian activities at those sites. The study of tree-ring data, or dendrochronology, for the preserve's forests could help map the fire history and might provide additional data that would help answer questions concerning burning practices of the Indians.

Questions regarding the origin of the meadow areas on the preserve are also unresolved by this study. This thesis offers one hypothesis that needs investigation (chapter 2, page 39), that perhaps each meadow was originally just a small opening of juncus, sedges and

rushes in a marshy area that the Indians expanded through burning. But this as well as other possibilities--for example, the influence of unknown site factors, like soil and rock type--still await investigation. Studying soil development from samples taken throughout a meadow would reveal whether or not the entire area developed under the same moisture and vegetation regime. Soil profiles would also reveal if the wetter areas of the meadows were indeed too wet for tree growth or might yet describe other site factors of importance. The possibilities for pollen analysis in the marshy meadow areas should also be explored because, if feasible, such research could yield significant information concerning not only the vegetation history of the meadows themselves but also of the entire preserve area.[2]

This thesis provides a foundation for additions by other studies such as those suggested here. But these other studies are still needed because a basic understanding of the ecology and natural history of the preserve area is contingent upon not only knowing the land-use history itself, but also upon follow-up

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[2]Pollen analysis refers to the identification of pollen found preserved in the organic material in boggy sites, to reveal what species comprised the former vegetation cover.

studies that would add important details and help answer questions raised but not answered by this thesis.

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APPENDIX A

1) When did your family arrive at their homestead on the South Fork of the Eel River?

2) Were they the first to settle at that spot?

3) If not, who was there before and what did they build (and where) and where did they clear, farm or graze animals?

4) Did your family build buildings? What, where and when?

5) Did they build roads and trails? What, where and when?

6) Could you draw a rough map of the homestead including buildings (and out buildings), roads, trails, corrals, fences, garden, fields and grazing areas?

7) Do you have any idea what your homestead area was like before anyone settled there? Were there trees, shrubs, grass or was it already an open area?

8) Briefly describe the vegetation around your homesite: on the hills, in the river valley, etc.

9) How would you describe the country in general, forest, forest and brush, scattered clear areas?

10) Was there very much brush under the trees in the forest?

11) What did your family grow? Where (indicate on your map)?

12) Did they rotate crops? Indicate which ones where on the map if you can.

13) Where did you get seed for crops?

14) How was the ground plowed?

15) How deep was it plowed?

16) What did you do with rocks?

17) How successful was raising crops?

18) Do you remember any particular "weeds"? If so, what were they?

19) What and how many animals did your family have?

20) Where did you get them?

21) Where did you get feed for them?

22) Did you graze of pasture them? Where? How much?

23) Did they seem to change the vegetation? How?

24) Where did you get water (both domestic and agricultural)?

25) Did you develop any springs? Which ones, where and how?

26) How did you transport water? Ditches, wooden flumes? When were they built? Where located (Show on map if you can)?

27) Did you do any mining? For what? Any success? Where?

28) Did you ever hear of any valuable minerals being found? What? Where? By whom? Did they develop the claim?

29) Was much extracted and sold from these claims? Where was ore sold?

30) Did your family cut redwood and douglas fir? How much? How often? Where? How was the wood used?

31) Did your family peel tanbark? How much? Where? Did any of the neighbors? Where was the bark sold? What did it sell for?

32) Did any of your family or neighbors use any native plants for food, medicine, clothing, etc.? Which ones? How (What for)?

33) What game did you hunt or trap? How much? How often?

34) Could you sell any pelts? To whom? Which pelts? Where sold? For how much?

35) Do you remember any major fires? Where? When? Did you fight them?

36) How were they started? Lightening, Indians, settlers, accidents or unknown?

37) Did your family ever set fires intentionally? Where? Why?

38) Do you know anyone who did set fires? Why was it done?

39) Do you know or remember anything about the Indians of the area?

40) Did you ever find any Indian artifacts like arrowheads? Where? What?

41) Do you know anyone who did? Who? Where? What?

42) Did you notice any changes in the environment as you lived at the homestead? What? (Changes in vegetation and wildlife)

43) Do you have any thoughts on why those changes occurred?

44) What animals do you remember? (lion, bear, porcupine, coyote, elk, otter, mink, etc.) Which ones were abundant? Which ones were rare? Did their numbers change while you were there?

45) Who did your family sell its claim to? When? Did they sell parts of the property separately? To whom? What parts? When?

46) How many people lived on your homestead at any one time? Who? What relation to family?

47) When did your family leave?

48) Any particular reasons?

49) Are you familiar enough with any of the other homesteads to the point where you could answer some questions similar to these?

50) Whom else should I contact?

51) Do you have any maps or photos I could borrow to rephotograph?

52) Any chance you might visit this area again in the near future?

APPENDIX B

APPENDIX B

PLANTS USED BY THE INDIANS OF MENDOCINO COUNTY AND FOUND ON THE COAST RANGE PRESERVE[1]

Key to numbers used in each category:

FOOD
- 1=seeds, roots, tubers, and bulbs
- 2=for sweeting
- 3=herbaceous, used for greens
- 4=fruits
- 5=condiments
- 6=drinks
- 7=forage and fodder
- 8=miscellaneous

CLOTHING
- 1=clothes, including hats and dresses
- 2=ornament
- 3=dyes
- 4=tattoo

HOUSE AND FURNISHINGS
- 1=house materials
- 2=furnishing materials

HEATING, COOKING AND LIGHTING
- 1=tinder
- 2=wood
- 3=fire receptacles

TOOL MANUFACTURE
- no subdivisions

HUNTING, FISHING AND HARVESTING
- 1=hunting and trapping apparatus
- 2=fishing apparatus
- 3=fishing poisons
- 4=harvesting apparatus

MEDICINIAL USES
- 1=muscles
- 2=nerves
- 3=brain
- 4=organs of special tissue
- 5=respiration
- 6=circulation
- 7=surface of the body
- 8=digestive system
- 9=tissue change
- 10=excretion
- 11=generative system
- 12=incantation

POISONS
- 1=fish poisons
- 2=stock poisons
- 3=human poisons
- 4=insect repellents

ARTS
- 1=dye
- 2=tattoo
- 3=adhesive

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[1]Chestnut, V. K. Plants Used by the Indians of Mendocino County (Mendocino County Historical Society: 1974).

		Food	Clothing	House and Furnishings	Heat, Cooking and Lighting	Tool Manufacture	Hunting, Fishing and Harvesting	Medicinal Uses	Poisons	Art
Acer macrophyllum	big leaf maple		1	2				4		
Achillea millefolium	yarrow							4		
Adiantum emarginatum			2							
Adiantum pedatum	five fingered fern		1	2						
Aesculus californica	calif. buckeye	1,7			1		3			
Agaricus campestris	meadow mushroom	1								
Agrostis exarata	western bentgrass	7								
Allium unifolium	wild onion								3	
Alnus rhombifolia	white alder		3		1		1,2	5,6,7,8, 10,11		2
Amanita muscaria	mushroom								3	
Amelanchier pallida	service berry	4					1			
Aralia californica	elk clover, spikenard							5,8,9		
Arbutus menziesii	madrone	1		1	2	X		5,8		
Arctostaphylos manzanita	manzanita	2,3,6			2			2,5,7,8	3	
Artemisia douglasiana	calif. mugwort, wormwood							1,4,5,6, 7,8,9		
Asclepias fascicularis	streamside milkweed								2	
Baccharis pilularis consanguinea	coyote bush						1			
Boletus sp.	mushroom	1								
Brassica campestris	mustard	3								
Brickellia californicus	calif. brickel bush	6								

		Food	Clothing	House & Furnishings	Heat, Cooking & Lighting	Tool Manufacture	Hunting, Fishing & Harvesting	Medicinal Uses	Poisons	Art
Brodiaea elegans	harvest brodiaea	1,7								
B. hyacinthina		1								
B. laxa	highland potato	1								
B. pulchella		1								
Bromus sp.	wild wheat	1								
Bryoria fremontii	lichen	1								
Calandrinia ciliata		1								
Capsella bursa-pastoris	shepherd's purse	1								
Carex breviliguinta		1	1	2						
Castanopsis chrysophylla	chinkapin	1								
Ceanothus cuneatus	deer bush						2			
C. integerrimus		1		2						
Cercocarpus betuloides	mountain mahogany			2			1,4			
chlorogalum pomeridianum	soap plant	3	4	2			1,3	1,4,7,8,10	1	3,4
Corylus cornuta	hazelnut	1		2			2			
Cynoglossum grande								7,11		
Datisca glomerata							3			
Daucus pusillus								3,6		
Delphinium hesperium	larkspir								2	
*Dendroalsia abietina	moss			2						
Dodecatheon hendersoni	shooting star	1,3	2							
Eremocarpus setigerus	Doveweed or turkey mullen						3	7	1	

*Species mentioned by Chestnut not found preserve. Closely related species found on the preserve has been substituted.

		Food	Clothing	House & Furnishings	Heat, Cooking & Lighting	Tool Manufacture	Hunting, Fishing & Harvesting	Medicinal Uses	Poisons	Art
Eriodictyon californicum	yerba santa	6						7	1,5,6,8	
Fragaria californica	wild strawberry	4								
Fraxinus latifolis	Oregon ash				2	X		7		
Heteromeles arbutifolia	toyon, christmas berry	4						8		
Iris douglasiana	iris		1	2			1,2			
Juncus effusus	rush	7		2		X	1,4			
Lathyrus jepsonii var. californicus		3								
Limodorum giganteum								2,3		
Lithocarpus densiflora	tanoak	1								
Lithophragma affinis								5,8		
Lomatium utriculatum		3,5								
Lycoperdon sp.	fungus puffball							7		
Madia gracilis	tarweed	1								
Marah oreganus							3	1,7,10	1,3	
Mimulus guttatus	monkey flower	3								
Monardella villosa spp. sheltonii	coyote mint	6						8,9		
Montia perfoliata	miner's lettuce	3								
Nasturtium officinale		5								
Pedicularis densiflora		2								
Perideridia kelloggii		3		2						
Petasites palmatus								5,7		
Philadelphus lewisii var. gordonianus	mock orange			2						

		Food	Clothing	House and Furnishings	Heat, Cooking & Lighting	Tool Manufacture	Hunting, Fishing and Harvesting	Medicinal Uses	Poisons	Art
Phorandendron flavescens								4,11	2,3	
Platismatia tuckermani	lichen			2						
Pinus lambertiana	sugar pine							8		
Pityogramma triangularis	gold back, print back fern		2		2			13		
Plantago lanceolata	plantain	7								
Poaceae					1					3
Polygonum aviculare	buckwheat	1						8		
Polypodium californicum	fern							1,4,7		
Polyporus spp.	shelf fungus	8								
Prunus virginiana var. demissa	chokecherry	1						2,8,9		
Pseudotsuga menziesii	Douglas fir	6		1,2	2,3		2	1,11		
Pteridium aquilinum	Bracken fern	1,7		2			4	10	2	
Quercus spp.	oak	6			1,2	X				2
Quercus chrysolepis	canyon live oak	1							3	
Q. garryana	white oak, Oregon oak	1								
Q. kelloggii	black oak	1								
Q. wislizenii	interior live oak	7								
Rhamnus californica	coffee berry							3,5,8,10		
Rhus diversiloba	poison oak		4	2				7	3	2,3
Robinia pseudacacia		7								
Rubus leucodermis		4								

		Food	Clothing	House & Furnishings	Heat, Cooking & Lighting	Tool Manufacture	Hunting, Fishing & Harvesting	Medicinal Uses	Poisons	Art
Rubus parviflorus	Thimble berry	4								
Rubus ursinus	blackberry	4						8		
Rumex crispus	curly or sour dock	1						8,9,10		
Salix lasiolepis	willow		1	1						
Satureja douglasii		6								
Scirpus sp.	sedge			2						
Sequoia sempervirens	coast redwood			1,2						
Solanum nigrum	black nightshade	4							3	
Taxus brevifolia	yew	4					1		3	
Thysanocarpus curvipes var. elegans		1						8		
Trichostema lanceolatum							3	2		
Trifolium sp.	clover	3,7								
Trifolium bifidum	clover	1								
Umbellularia californica	Calif. bay laurel, pepperwood, myrtlewood	4,5,6						1,2,7,8	3,4	
Vicia americana										
Vitis californica	Calif. grape	3,7		2			4			