DEPARTMENT OF THE INTERIOR

ENVIRONMENTAL ASSESSMENT

Proposed

KING RANGE NATIONAL CONSERVATION AREA

MANAGEMENT PLAN AND PROGRAM

Prepar

UNITED STATES DEPARTMEN
BUREAU OF LAND M
UKIAH DISTRICT

March, 1974

KING RANGE NATIONAL CONSERVATION AREA

ENVIRONMENTAL ASSESSMENT

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ENVIRONMENTAL ASSESSMENT

KING RANGE NATIONAL CONSERVATION AREA

PROPOSED MANAGEMENT PLAN AND PROGRAM

I. DESCRIPTION OF THE PROPOSAL

The proposal involves implementation of a management program for the King Range National Conservation Area (KRNCA). The program has been prepared in response to the mandate of the King Range Act, Public Law 91-476. A more detailed discussion of the background of this legislation is included in the King Range Program Summary.

A. Purpose

1. It authorizes and directs the Secretary of the Interior to establish within described boundaries, the King Range National Conservation Area, "and to consolidate and manage the public lands in the area with the purpose of developing for the use and benefit of the people of the United States the lands and other resources therein under a program of multiple usage and of sustained yield." Procedural requirements for accomplishment of this objective are set out in the Act.

2. It directs that "...there will be a comprehensive, balanced, and coordinated plan of land use, development, and management of the area, ...based on an inventory and evaluation of available resources... and other features of the Area." The plan is to cover all lands within the Area, regardless of ownership.

3. It requires that "the plan will indicate the primary or dominant uses which will be permitted on various portionsof the Area" and that "secondary or collateral uses may be permitted to the extent that such uses are compatible with and do not unduly impair the primary or dominant uses, according to a seasonal schedule or otherwise."

4. The Secretary may acquire lands or interest in lands within the Area through purchase or exchange. In an exchange of lands the Secretary can pay or accept up to one-third the value of the land in cash to

equalize values. The Secretary may not acquire, without the consent of the owner, any private lands which, on the date of the Act, were utilized for residential, agricultural, or commercial purposes so long as such usage is compatible with the purposes of the Act.

5. The Secretary may establish reasonable mining regulations to protect the scenic and aesthetic values of the Area and to assure against pollution of the streams and waters.

6. The Secretary shall use public and private assistance as may be required to prepare a progam of multiple usage and of sustained yield of renewable natural resources for the Area. The program shall include, but is not limited to:

   (1) A quantitative and qualitative analysis of resources.

   (2) Proposed boundaries of the area.

   (3) A plan of land use, development and management together with any proposed cooperative activities with the State of California, local governments, and others.

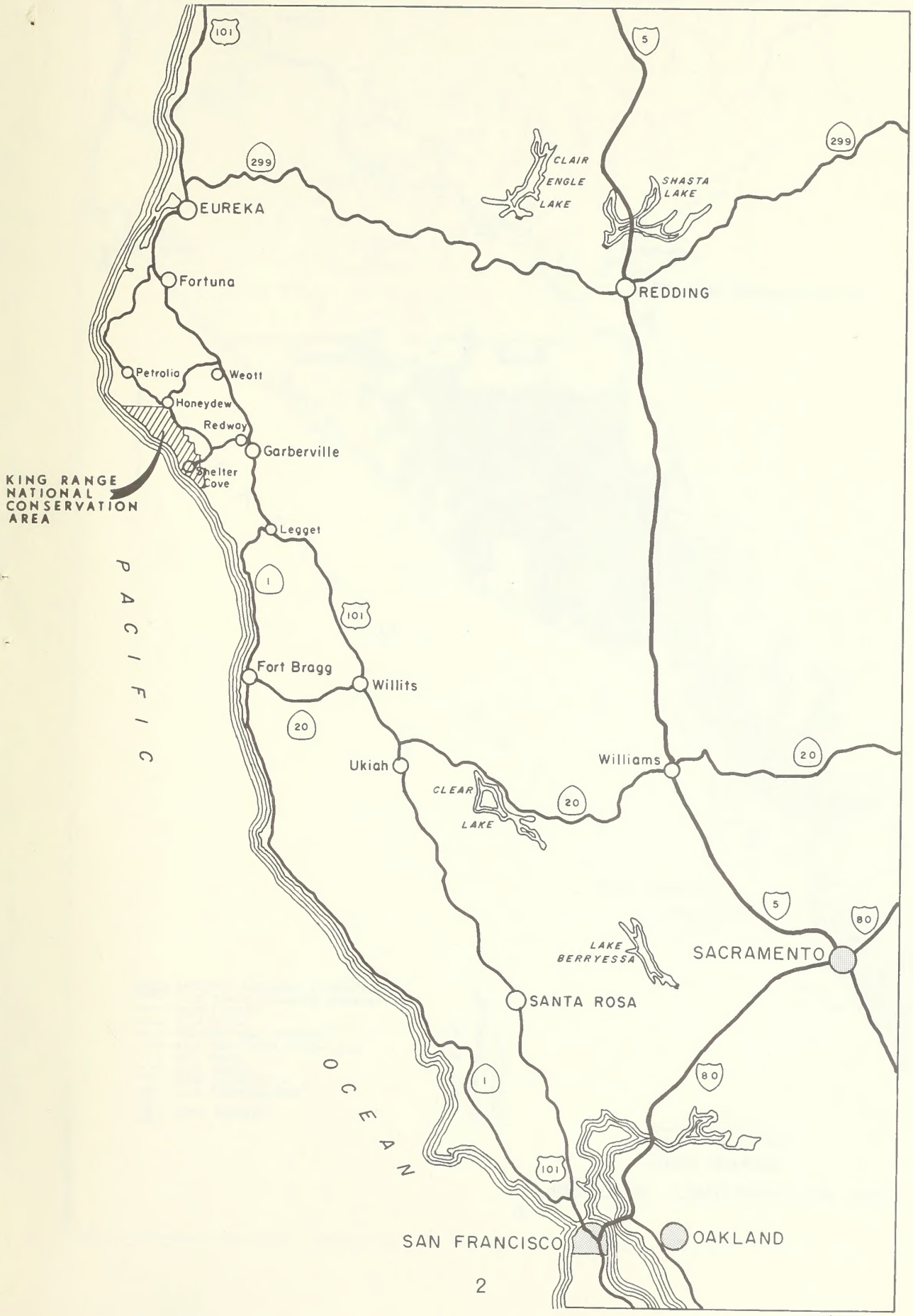
   (4) A statement of expected costs and an economic analysis of the program with particular reference to costs to the United States and expected economic effects on local communities and governments.

   (5) An evaluation of the program in terms of local interest.

7. The Secretary shall establish the Area after copies of the program are submitted to Congress, the Governor of California and the supervisors of the counties in which King Range is located, after publishing a notice of his intention, and after receiving expression of local views.

B. Location

The proposed KRNCA lies 230 miles north of San Francisco and 70 miles south of Eureka. While most of the area is in Humboldt County, the southern-most three percent lies in Mendocino County.


101
5
299
CLAIR
ENGLE
LAKE
SHASTA
LAKE
299
EUREKA
Fortuna
REDDING
Petrolia
Weott
Honeydew
Redway
Garberville
Shelter
Cove
KING RANGE
NATIONAL
CONSERVATION
AREA
Legget
1
101
PACIFIC
Fort Bragg
Willits
20
Ukiah
Williams
20
CLEAR
LAKE
20
5
80
LAKE
BERRYESSA
SACRAMENTO
SANTA ROSA
1
80
OCEAN
101
SAN FRANCISCO
OAKLAND

MAP 1


Petrolia
Punta Gorda
Honeydew
Proposed Administrative Site
Telegraph Peak
Spanish Flat
North Slide Peak
Rattlesnake Ridge
Kings Peak
Big Flat
Saddle Mtn.
Horse Mtn. Camp
Tolkan Camp
Queen Peak
Thorn Junction
Proposed Administrative Site
Point Delgada
Shelter Cove
Nadelos Camp
Wailaki Camp
Chemise Mtn.
Point No Pass
Four Corners
PACIFIC OCEAN
NATIONAL RESOURCE LANDS (BLM)
KING RANGE PLANNING BOUNDARY
COUNTY ROADS
B.L.M. ROADS
PROPOSED ROAD EXTENSION
B.L.M. KING RANGE ACCESS ROAD
JEEP ROAD
B.L.M. TRAILS
ZONE BOUNDARIES
B.L.M. CAMPGROUNDS
ZONE NUMBERS
Take out when reduced
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
UKIAH DISTRICT - CALIFORNIA
KING RANGE
NATIONAL CONSERVATION AREA
DRAWING NUMBER: 04-050-01-29

The King Range Area comprises about 54,000 acres along the most rugged and isolated portion of the California coast. The most impressive feature of the King Range is the relation of the mountains to the sea and the wilderness character of the land adjacent to the sea sets the theme for aesthetic and recreational enjoyment. The unique character of this coastline is almost unduplicated along the Pacific shore of this country. The high peaks provide views of the ocean and surrounding coastal mountains. Along the water are found black sand beaches and flats, sweeping abruptly up into timbered or talus slopes. Vegetation ranges from open grass or brush on the exposed ridges to old-growth Douglas fir in the draws and protected stream bottoms. On the exposed western slopes, Douglas fir takes on a gnarled and wind-blown form. Stands of hardwood are scattered along the coast at areas such as Big Flat.

The entire west-facing slope to the crest of the first ridge has been relatively untouched by man. The highway system generally follows the ocean shore until it approaches the King Range vicinity. Here, because the area was too rocky, rugged and precipitous for construction, the road swings several miles inland.

C. Proposed Action

The Program Summary includes a detailed discussion of the proposed boundary adjustments to the KRNCA. The boundary of the planning area is shown on Map 2. Proposed boundary changes are shown on the large fold-out map

The area is geographically divided into two aspects that are sufficiently differentiated to form distinct management units. The Pacific Slope, lying west of the main divide between Buck Creek on the south and Kinsey Ridge on the north, contains about 27,000 acres. The remaining 27,000 acres lie generally east of the main ridge on the western slope of the Mattole River drainage, including the drainages of Honeydew, Squaw, Bear and Finley Creeks. The plan indicates that the area will be managed for a variety of multiple-use values, including recreation (see fold-out map of general area and individual zone maps).

1. Designation of Zones

Public Law 91-476, in section 2, paragraph (b)(2), states "the plan will indicate the primary or dominant uses which will be permitted on various portions of

the Area." Using the Bureau planning system, seven zones were identified through a review of each resource by current use and potential for development. A few adjustments were made in boundaries of zones to allow for maximum utilization of the primary resource without a significant detrimental effect on adjacent zones' efficiency. An example is: the West Slope zone boundary was shifted 1/4 mile below the ridge crest to the east rather than leaving it at the crest as first defined. Such a change greatly enhanced the West Slope recreation zone with practically no effect on wildlife habitat or sustained yield forest production in zones 6 and 7.

The zones are:

Zone 1. Punta Gorda - This includes the old Coastguard Lighthouse station and surrounding area.

Zone 2. West Slope - This zone is primarily the slope which drains directly into the ocean from the north boundary of the Area to the Shelter Cove subdivision area.

Zone 3. Shelter Cove - This is mainly the area subdivided for residential development at Shelter Cover.

Zone 4. Point No Pass - This zone is little developed and lies to the south of Shelter Cove. This zone is characterized by steep slopes which extend to the ocean.

Zone 5. Whale Gulch - This zone is the southern tip of the King Range Area, containing little public land and having numerous private owners.

Zone 6. Bear Creek - This zone is the Bear Creek drainage which is a tributary of the Mattole River. Included in the zone are many areas of logged-over private land. Bear Creek zone lies east of Zones 2 and 3.

Zone 7. Honeydew Creek - This zone includes the Honeydew Creek drainage and part of the Squaw Creek drainage. Included is all land east of Zone 2 and north of Zone 6 in the Conservation Area.

2. The Proposed Plan

Following the Bureau's planning system, a framework plan was developed to identify and resolve resource use

conflicts between primary and secondary or collateral uses, to determine needed coordination between resource uses, and to establish an overall management direction for the area. A more detailed discussion of the plan is included in the Program Summary and the Management Framework Plan and Coordinated Activity Plan for the KRNCA.

It is not feasible to identify or adequately address the environmental impacts of the many hundreds of individual actions proposed in the plan. For instance, several hundred stream clearance projects are proposed. Analysis of the impacts of these specific actions must await plan implementaiton. Instead, this assessment is directed primarily toward the zone designations and the more important resource and land use recommendations in the proposed plan.

a. Area-wide Recommendations

Several recommendations were developed that apply to all or several zones in the KRNCA. These are detailed in the Program Summary and include:

(1) Recreation - identification of needed contractual surveys of archeological and historical resources.

- design of an interpretative program
- establishment of a regular patrol of the area.
- development of cooperative arrangements to assure public access.

(2) Wildlife

- preservation of raptor habitat and prohibition of disturbance creating activities near raptor nests.
- exclusion of timber harvest, road construction or recreation development within 1/4 mile of Honeydew Creek, Big Finley Creek and Bear Creek until the use of these areas by bald eagles and osprey can be determined.

(3) Fisheries

- Stream rehabilitation will involve removal of log jams on 35 miles of stream, primarily through hand labor.

(4) Minerals

- Regulations are being proposed that will allow mineral development to proceed in accordance with reasonable environmental management control, where not withdrawn.

(5) Lands

- The Bureau will encourage undergrounding of utilities and use existing right-of-way corridors through cooperative planning with utility companies.

- Applications for such uses of lands as communications sites or solid waste disposal sites will be handled in a case-by-case basis as the need develops.

- Approximately 17,000 acres of land acquisitions are contemplated. About 4,000 acres had been acquired by March 1, 1974. The majority of the acquisition to date, as well as that contemplated during the period through 1978, will be accomplished through exchange of lands with private landowners. Under this program, national resource lands outside the King Range boundary, but within Humboldt and Mendocino Counties, will be exchanged for private lands within the K.R.N.C.A. boundaries. A separate environmental analysis has been prepared on the exchange program and individual supplemental environmental analyses are being developed to assess the potential impacts of each exchange proposal.

(6) Transportation System

Approximately 37 miles of new road construction are planned. Additionally, reconstruction of 30 miles of substandard existing roads will be needed. New trail construction will total 49 miles, while major maintenance and upgrading of 28 miles of existing trail will be necessary.

(7) Fire Protection

Fire protection is provided, under contract, by the California Division of Forestry. The plan requires approval of the District Manager prior to use of mechanical equipment in zones 2 and 4.

(8) Administrative Sites

The plan proposes establishment of a combined administrative site-visitor center in the vicinity of Thorn Junction, on the road from Redway to Shelter Cove and a seasonally manned visitor center at the north end of the area at Honeydew.

(b) Punta Gorda - Zone 1

The primary use in this zone has been determined to be recreation. The remains of the old lighthouse set the theme for the area and recreational use centers on the lighthouse and adjacent beach areas. Planned actions which are compatible with this use include:

(1) Land acquisition along the beach in the area adjacent to the lighthouse from the high tide line to the toe of the slope or to the existing road.

(2) Acquisition of access easements within the area between the Mattole River and Punta Gorda and the coastal strip between Punta Gorda and the main King Range area to the south.

(3) Recreation Use Areas

- a mechanized use area along the beach from the Mattole River to the lighthouse.

- a non-mechanized use area south of the lighthouse to the northern boundary of Zone 2.

- parking, picnicking and camping areas near the mouth of the Mattole River.

(4) Manage the coastal inland habitat, tide pools, beach and off-shore rocks for nonconsumptive uses of wildlife.

(5) Implement a grazing system to provide 117 AUM's of grazing use from June to October.

c. West Slope - Zone 2

The primary use of this zone is recreation. The thrust of management is to retain the wild character of the seaward facing slopes and preserve the scenic value of the beach. Compatible actions in this zone include:

(1) Acquisition of public access along the beach, at the coastal streams, and along several potential trail routes.

(2) Identification of the entire beach area within the zone as a non-mechanized use area.

(3) Limiting development on the west slope to preserve the primitive character of the landscape.

(4) Development of a parking and primitive camping area at the terminus of the Smith-Etter Road at Spanish Flat.

(5) Removal of the unused non-historic buildings on Big Flat Creek and Shipman Creek and the corrals on Spanish Flat. If necessary, arrange for life-estate use of the cabins at Spanish Flat and remove cabins after arrangements terminate.

(6) Stabilize 10.2 miles of abandoned roads and numerous skid trails. Outslope 5-6 mile of abandoned roads. Revegetate 1,843 acres of

cutover lands and employ grazing management systems to stabilize 2,533 acres.

(7) Establish a herd of Roosevelt elk in the Big Flat area.

(8) Permit - 1105 AUM's of grazing use, under a grazing system, during the season from June to October.

(9) Withdraw - 22,287 acres from entry under the 1872 mining laws.

d. Shelter Cover - Zone 3

The primary use in this zone is residential. The Bureau's objective in the Shelter Cove Zone is to provide recreational facilities that are compatible with this primary use.

(1) Acquire public access to the beach from Shelter Cove to south of Telegraph Creek.

(2) Develop parking areas at Black Sand Beach and Point Delgada.

(3) A non-mechanized use area will be established along the two miles of beach from Black Sand Beach to the boat launch.

(4) A mechanized use area will be established along the approximately 3 miles of beach from Telegraph Creek to Gitchell Creek.

(5) Closing the existing Shelter Cove Ranchos Road to public vehicle use, while using it for non-mechanized public access.

e. Point No Pass - Zone 4

The primary use in this zone is recreation. Management actions will be directed toward preservation of primitive values. The area will be designated a primitive area.

(1) No camping facilities will be developed in this zone.

(2) Several trails will be developed.

(3) No logging will be permitted, except that limited actions to control insects or disease may be allowed if adjacent forest lands are threatened and the action will not significantly detract from primitive qualities.

(4) All private in-holdings will be acquired.

(5) A total of 3,605 acres of land will be withdrawn from mineral entry under the 1872 mining law.

f. Whale Gulch - Zone 5

The primary use is residential. No acquisition is presently contemplated in this zone. If lands become available, they will be acquired if they are contiguous to Zone 4 and suitable for meeting management objectives.

g. Bear Creek - Zone 6

The primary use in this zone is sustained yield timber production.

(1) The allowable cut on national resource lands in both Zones 6 and 7 is 1.9 million board feet. During the first five years, this volume will be taken from Zone 6. In addition to timber harvest, the following actions are planned for the first five-year period.

(a) Planting 440 acres. Cutover private lands will be planted after they are acquired.

(b) Brush conversion and planting of 320 acres.

(c) Precommercial thinning of 50 acres

(d) Construction of 8 miles of multi-purpose, mainline road and approximately 17 miles of timber sale roads.

(2) Stabilization activities consisting of cross drainage, outsloping, seeding and fertilizing will be implemented on 658 acres of eroding logging roads and skid trails. Improving drainage on about 6 miles of existing road. Reduction in livestock use on 316 acres on Paradise Ridge, rehabilitation of small slide areas, and stabilization of the Queen Peak mine are also planned.

(3) A wildlife habitat improvement study project, consisting of controlled burning and reseeding, will be implemented in a 64-acre stand of dense, tall chaparral and hardwoods west of Queen Peak.

(4) Public access will be acquired to the South Fork Bear Creek and the Paradise Ridge area.

(5) Roads and trails will be open to mechanized vehicle use; areas that show evidence of serious erosion due to vehicle use will be closed. A trail will be developed along Bear Creek connecting Tolkan Campground with Wailaki Campground.

h. Honeydew Creek - Zone 7

The primary use in this zone is wildlife. Management objectives are directed toward preserving and enhancing wildlife habitat, with particular emphasis on such threatened species as the spotted owl.

(1) The old growth timber at the head of Honeydew Creek will be maintained for 5 years, until an intensive inventory of wildlife species can be made. There are indications that these stands are important habitat for the threatened spotted owl and other species.

(2) Public access will be acquired over the existing Smith-Etter Road. Physical access for hunters and wildlife observers will be improved by ten-foot wide openings through 16 miles of chapparal; six-foot openings will be cleared throught forested areas; 6 miles of four-wheel drive trail will be

opened and one mile of existing road will be upgraded.

(3) Brush conversion and planting of conifers is planned on 80 acres in the first 5 years Cutover lands will be planted after acquisition.

(4) Multi-purpose roads will be constructed over 2.5 miles in this initial period.

(5) Watershed stabilization will be undertaken on 535 acres. This will entail outsloping, cross-drainage, seeding and fertilizing of old logging roads and skid trails. Drainage will be improved on 16 miles of existing maintained roads. Reforestation of 274 acres of forest soils will take place.

(6) Public hunting opportunities will be expanded through cooperative agreements with private landowners in the Bear Trap Ridge and Moorehead Ridge areas.

(7) Two hundred foot wide buffer strips, in which timber harvest is restricted to selective cutting, will be maintained along recreation roads and trails.

(8) Approximately 2,912 acres of land acquisition is planned in this zone.

II. DESCRIPTION OF THE ENVIRONMENT

A. Non-Living Components

1. Topography

The King Range National Conservation Area takes its name from the high ridge which dominates the area. The range runs northwest by southeast through the entire National Conservation Area. Elevations along the ridge range from 2,350 feet at Oat Hill in the north to 4,087 feet at Kings Peak and to 2,596 feet at Chemise Mountain at the south end. Between these points the elevation never falls below 1,400 feet. Kings Peak is less than three miles from the ocean. Such an abrupt rise is unmatched on the California coast and is rare anywhere in the world.

On the western slope of this dominant range many short, steep streams run directly to the ocean. A combination of steep slopes, high rainfall,and unstable soil and rock formations has created many cliffs, huge rock slides and talus slopes on this seaward face of the range. Except at Shelter Cove,the steep slopes commonly extend to the beach. A square mile or so of rolling grassy slopes usually lies between the ocean and the mountains. Big Flat, at the mouth of the stream of the same name, is an alluvial terrace about 1.5 miles long and up to one-quarter mile wide. Spanish Flat, near the north end of the area,is much narrower but is nearly four miles long. Other than at these places the beach is usually narrow and frequently non-existent where a number of rocky points extend into the surf.

The eastern slopes of the range are also steep and rugged but not so much as the western side. There are three major streams on this side of the range. Squaw Creek drains about 3,500 acres in the north. Honeydew Creek runs northeast carrying runoff from about 7,000 acres. Bear Creek has two major forks and drains a watershed of about 9,400 acres. The North Fork arises near the southeastern slope of Kings Peak and runs east and south to join the South Fork. The South Fork arises near the southern end of the area and flows north for more than 10 miles to its junction with the North Fork. Past this junction Bear Creek runs east, out of the King Range Area, to the Mattole River. The King Range streams form only a small portion of the Mattole's 240 square mile watershed.

With the major exception of the South Fork of Bear Creek, the streams on both the east and west slopes branch repeatedly in a dendritic pattern. This produces, in general, narrow and short ridges and short, steep canyons.

2. Water Data

a. Surface Water

(1) Water yield and use vary greatly. Yield is estimated at 82% of total precipitation. Average runoff in the Mattole River drainage is 970,100 acre-feet. An estimated 55,300 acre feet of run-

off drains from Bear Creek annually, while Honeydew Creek's runoff is estimated to be about 52,300 acre-feet. Use is almost non-existent within the area. None of the coastal streams are used at all except by wildlife, livestock and an occasional human. Outside the area, Honeydew, Bear and Squaw Creeks contribute runoff to the Mattole River, but the river is subject to almost no direct consumptive use. Only about 350 acres of agricultural land are irrigated by direct diversion from the river. There are no impoundments, either within the King Range Area or downstream. Most domestic and agricultural water is obtained from springs on private land, and there are a few wells, mainly along the Mattole River.

(2) Sediment. Quantities of sediment vary greatly. The steep, unstable topography causes many slumps and slides. Stream cutting of the toe of these features is the main natural contributor of sediment. Bank caving is a minor producer of sediment. The heavy vegetative cover prevents much sheet type erosion. However, where vegetation is removed erosion may become very serious. There are occasional massive land movements, such as may be caused by earthquakes, which move great quantities of earth and rock down the watershed in a short period. It is estimated that approximately 80% of the sediment load is a product of natural erosion.

Man-caused erosion results mainly from four kinds of actions. Logging can disturb the ground badly and can contribute heavy sediment loads to streams, although good logging methods do not have to be destructive. Most of the private land in the unit has been logged, but almost none of the public lands. Road building is probably the main contributor of sediment. Heavy grazing can cause erosion and sedimentation. There is some evidence of this on the grasslands along the northern boundary of the unit. Finally, conversion of timberland to grassland removes the deep rooted plants and thus lowers soil stability. This has been done on portions of a ranch in the northeastern part of the area.

(3) Pollutants. Pollutants other than suspended and free sediment have not been found to be a problem in the King Range streams. There are, however, several streams flowing into the ocean south of Big Flat that are high in calcium that is caused by the rock formations where the streams originate.

b. Ground Water

Virtually no data on ground water is available. Known springs are shown on the hydrology overlay in the unit resource analysis. There are no known wells within the boundaries of the planning unit. One well site investigation at Tolkan Camp has been made by USGS. Their conclusion was that the chance of finding ground water in that area was poor. It can be inferred from the folded and faulted rock strata that there are probably a number of small ground water basins in the area. There is no way at this time to determine their exact location or extent.

c. State Water Quality Requirements

The California Regional Water Quality Control Board is considering designating the King Range coastal area as an Area of Special Biological Significance which puts very strict requirements on any effluent in natural water. Once an area has an ASBS designation no effluent is allowed which will change background quality or temperature of any natural surface or ocean water.

In the interim, activities in this area are governed by the water quality objectives and discharge prohibitions issued by the North Coast Regional Water Quality Control Board. These objectives and discharge prohibitions are contained in the North Coastal Basin 1-B (Interim) Water Quality Control Plan, published in June 1971.

3. Soils

a. Erosion

Natural erosion is evident in the King Range, especially near mountain peaks and on the very steep western slopes. Earthquakes as recent as 1960 caused major earth disturbance and apparently exposed many areas to earth slides and slips.

Accelerated erosion is caused by man's disturbance of the natural landscape. It results from exposure of the soil surface to the effects of running water and of wind, through burning, excessive grazing, forest cutting and tillage, any of which destroy or weaken the vegetation. Exposed soil may erode very rapidly if not managed to restore vegetation or to compensate for its absence.

Some areas of the King Range contain examples of accelerated erosion. Road construction has in some places changed the earth slopes beyond their angle of repose and has caused earth slippages and landslides. Road construction alone has exposed many acres of soil to accelerated erosion both above and below the immediate road area. Past burning and some timber cutting practices have destroyed vegetative cover and have caused active landslides, especially in the Honeydew Creek area.

b. Soil Series Descriptions

Brief soil series descriptions are given here.

(1) Conifer Soils

Hugo: These soils are derived from sandstone and some conglomerate shale and schist parent material to form medium textured sandy clay loam to heavy loam soils. They are well drained and moderately permeable and range in depth from 2-1/2 to 5 feet. Erodibility under natural vegetative cover is low; however, in disturbed areas, where vegetation has been removed, erodibility may be very high on steep slopes. Natural vegetation associated with Hugo soils is mixed conifer-hardwood forest of Douglas fir, tanoak, and madrone with an understory of shrubs. Due to their high acidity, attempts to convert these soils to forage production have been unsuccessful.

Road construction conditions of the Hugo soils are good because of their favorable physical properties and their relatively high bearing surface capacity.

Josephine: These soils are derived from sandstone and shales that may be metamorphosed in and from schist parent material. They occur on moderate to

very steep slopes under mixed coniferous forest. Depth to rock ranges from 20 to 60 inches, 36 to 48 inches being average. Erodibility under natural vegetative cover is low; however, in disturbed areas where vegetation has been removed, erodibility may be very high. Vegetation varies - Douglas fir, ponderosa pine, sugar pine, incense cedar, black oak Oregon white oak, madrone, big leaf maple, manzanita, poison oak, mountain misery, and perennial grasses.

Road construction conditions of the Josephine soils are not as good as the Hugo because of higher clay content in subsoils.

Usal: The Usal soils are developed from Franciscan sandstone shale parent material. Underlying parent rock is hard, partially weathered shattered sandstone at the depth of about 38". They occur on steep to very steep mountainous slopes. Erodibility under natural vegetative cover is low; however, in disturbed areas where vegetation has been removed, erodibility may be very high. Vegetation is typically coniferous forest with Douglas fir, some grand fir and western hemlock. Hardwood species are tanoak, madrone and California laurel. Sword fern is the principal understory species. Road construction conditions are about the same as the Josephine soils.

(2) Woodland Grass Soils

Kneeland: These soils are derived from yellowish-brown sandstone (graywacke). They are moderately deep (35") to sedimentary rocks. Kneeland soils occur on moderately steep to steep, well dissected mountains, with rounded ridges and V-shaped drainages. Where vegetation has been removed, erodibility is moderate to high. Vegetation consists of grass, with bracken fern common. Occasional scattered hardwoods are Oregon white oak and California laurel.

Road construction conditions on moderate slopes are fair to good.

(3) Chaparral Soils

Los Gatos: Los Gatos soils are derived from very pale brown sandstone parent material. They rest on

sandstone bedrock at about 36". These soils appear on steep to very steep slopes. Erosion hazard is moderate to high with the removal of vegetation. Vegetation is brush with some areas of hardwoods and grass.

Road construction conditions are fair to good.

Maymen: The Maymen soils are derived from light yellowish-brown and pale brown, very hard fractured sandstone. Vegetation is usually open stands of chaparral consisting of chamise, manzanita, ceanothus, scrub or dwarf oak, and scattered small trees in protected areas.

Road construction conditions are good; bearing rocks are hard and abrasive.

Cahto: These soils are developed from deeply weathered, very pale brown sandstone and shale parent material. Depth to rock ranges from 18-36". Vegetation consists of tall dense shrubs with stunted hardwoods, coast whitethorn, eastwood manzanita, California coffeeberry, California yerba santa, California laurel, tanoak, madrone and sparse understory of poison oak, bracken fern and other herbaceous plants.

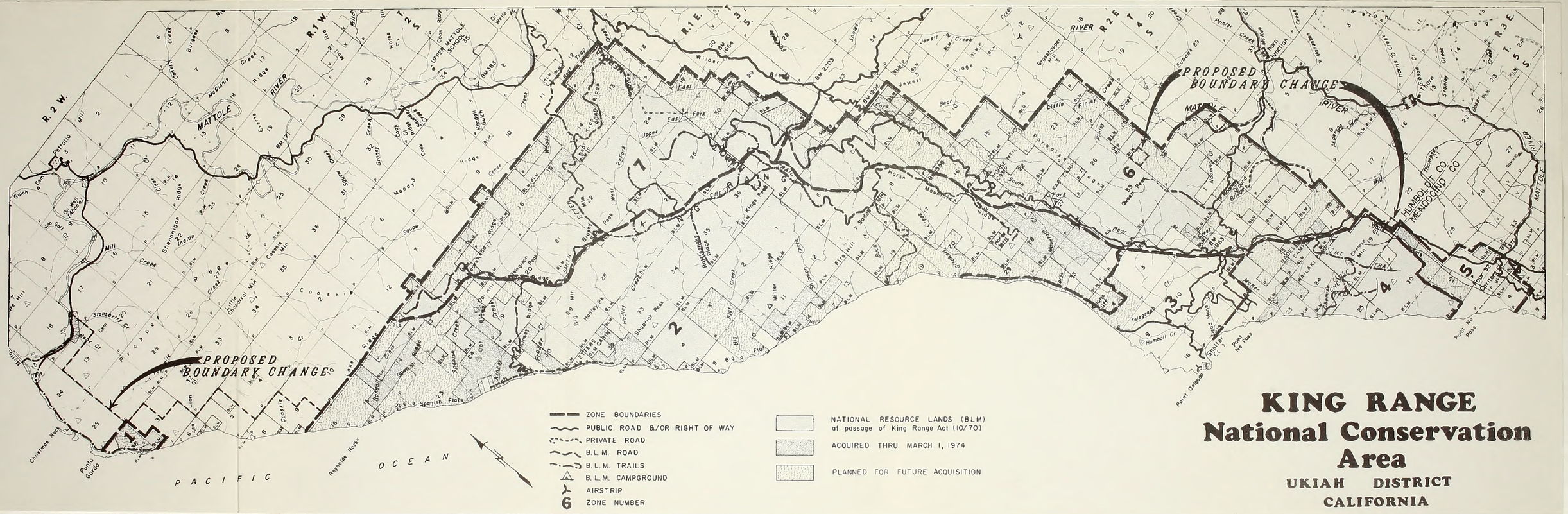
Road construction conditions are good.

(4) Unclassified and Miscellaneous Land Types

(a) 100 and 200, unclassified: secondary bottomland soils; or cultivated cropland.

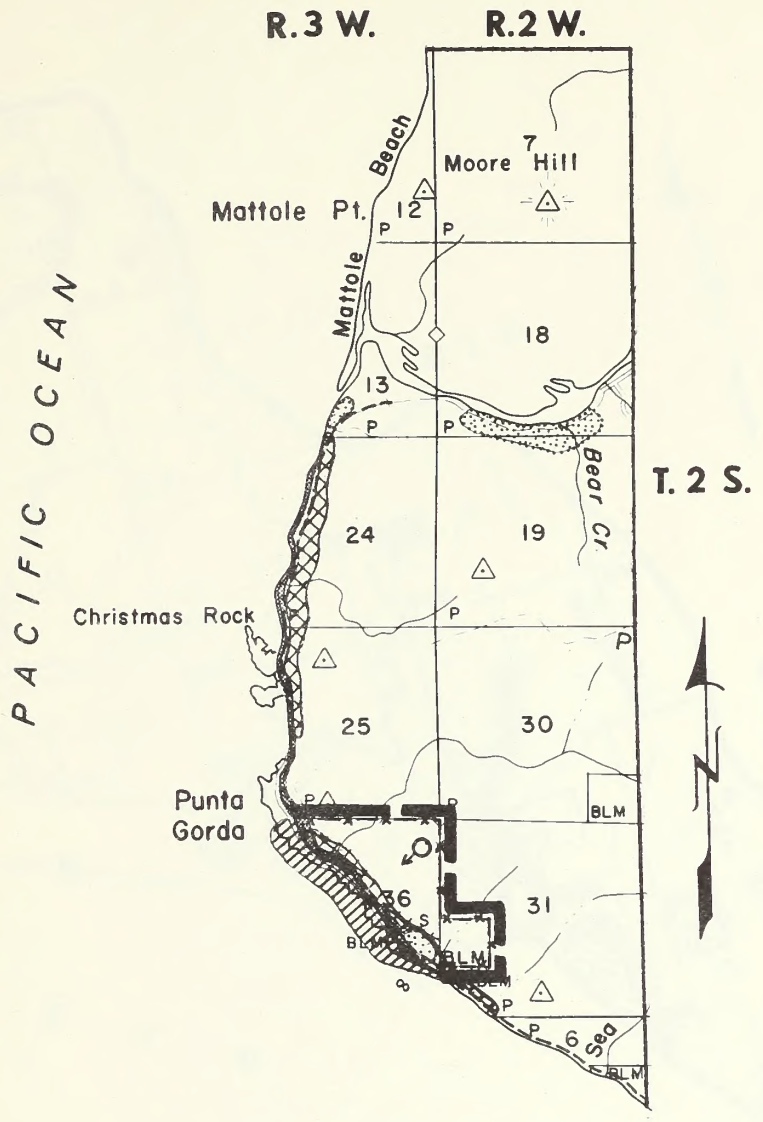
(b) 700 miscellaneous land types. These land types have little or no soils, or soils of the type that cannot be feasibly classified. They are generally unsuited for commercial production of timber or range forage and are described as follows:

Colluvial land - these are areas of unconsolidated recent colluvium of heterogeneous deposits of soil material, rock fragments or mixtures of the two. They accumulate by gravity on the base of slopes. Such areas



KING RANGE
National Conservation Area
UKIAH DISTRICT
CALIFORNIA

Punta Gorda



KRNCA - ZONE 1
PRIMARY USE - RECREATION

PLANNED ACTIONS LEGEND

- TRAIL - INCLUDING AREAS REQUIRING EASEMENTS
- INTENSIVE USE AREAS
- CULTURAL AREAS
- MECHANIZED USE AREA
- PRESERVE COASTAL HABITAT
- FENCE CONSTRUCTION
- DEVELOP SPRING

West Slope

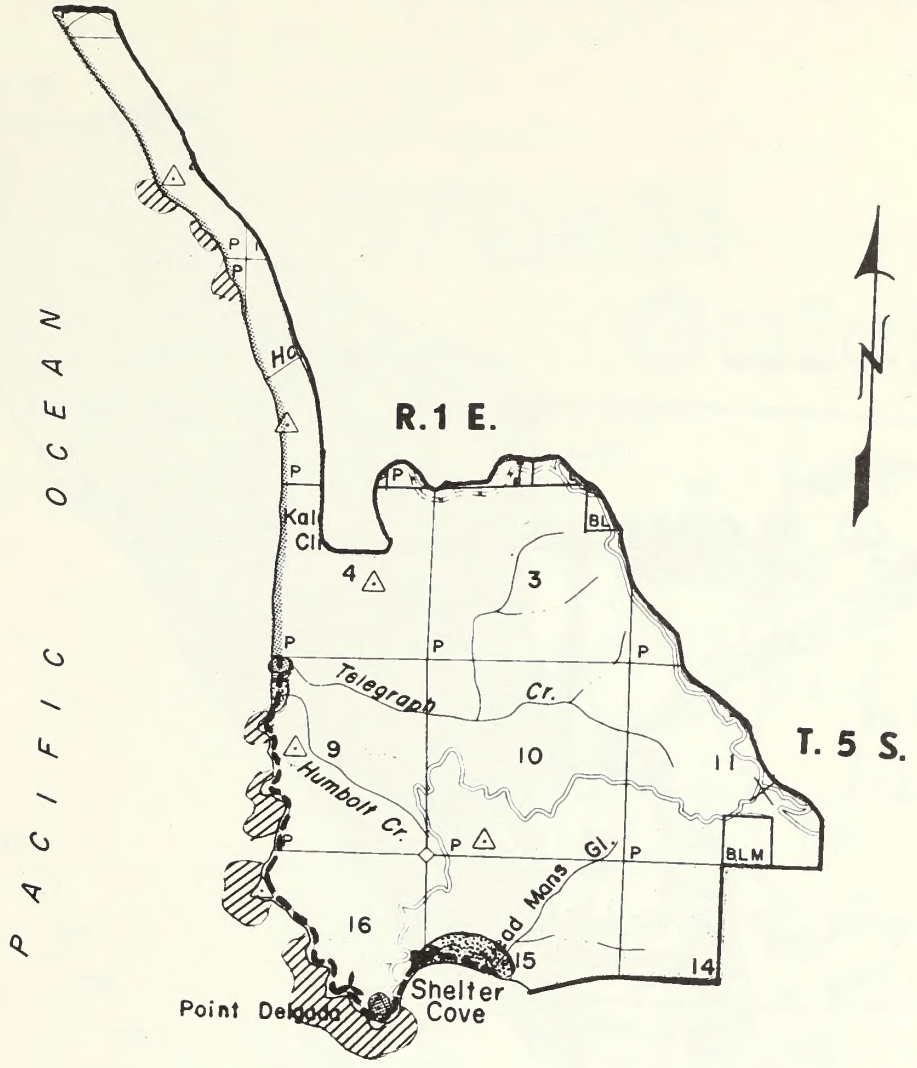
PLANNED ACTIONS LEGEND

- TEMPORARY FENCED ENCLOSURE FOR ELK ESTABLISHMENT
- TRAIL
- DEVELOP SPRING
- CONSTRUCT RESERVOIR
- LIVESTOCK GRAZING AREAS
- ELK RANGE LIMITS
- ROCK, KELP, TIDE POOL PRESERVE AREAS
- STREAM REHABILITATION (FISHERIES)
- MAINTAIN RAPTOR CLIFF AREAS
- BEACH CULTURAL AREA
- INTENSIVE USE AREA
- NONMECHANIZED USE AREA
- REHABILITATE CUTOVER AREAS

KRNCA - ZONE 2

PRIMARY USE - RECREATION

Shelter Cove



PLANNED ACTIONS LEGEND

TRAIL RIGHT OF WAY AND/OR CONSTRUCTION

ESTABLISH PARKING AREA

RESTRICT AREA TO NON-MECHANIZED USE

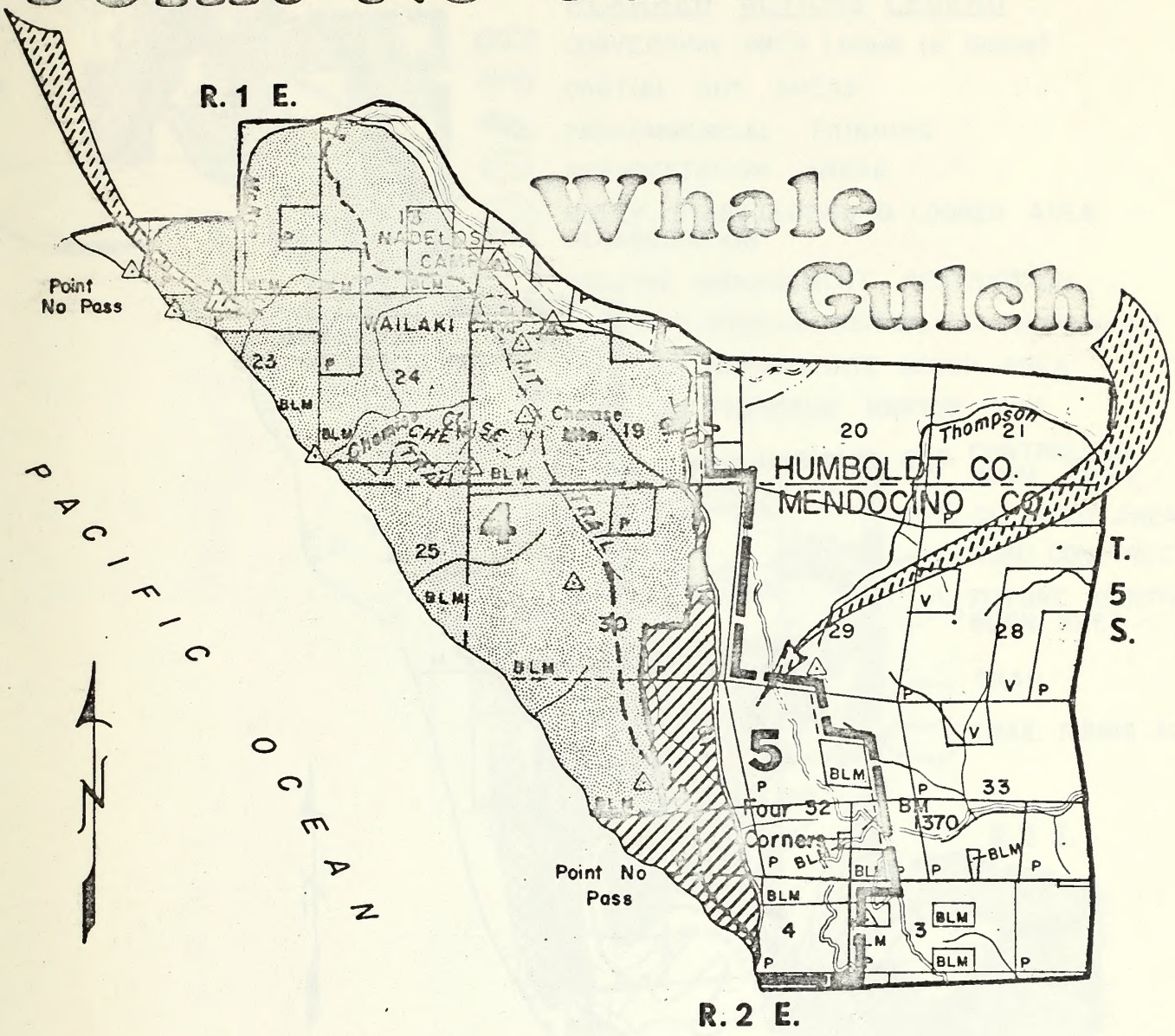
VEHICLE USE AREA

ROCK, KELP, TIDE-POOL PRESERVE

KRNCA - ZONE 3

PRIMARY USE - RESIDENTIAL

Point-No-Pass



PLANNED ACTIONS

LEGEND

- POTENTIAL EXPANSION TO PRIMITIVE AREA
- TRAIL CONSTRUCTION
- PRIMITIVE AREA

KRNCA

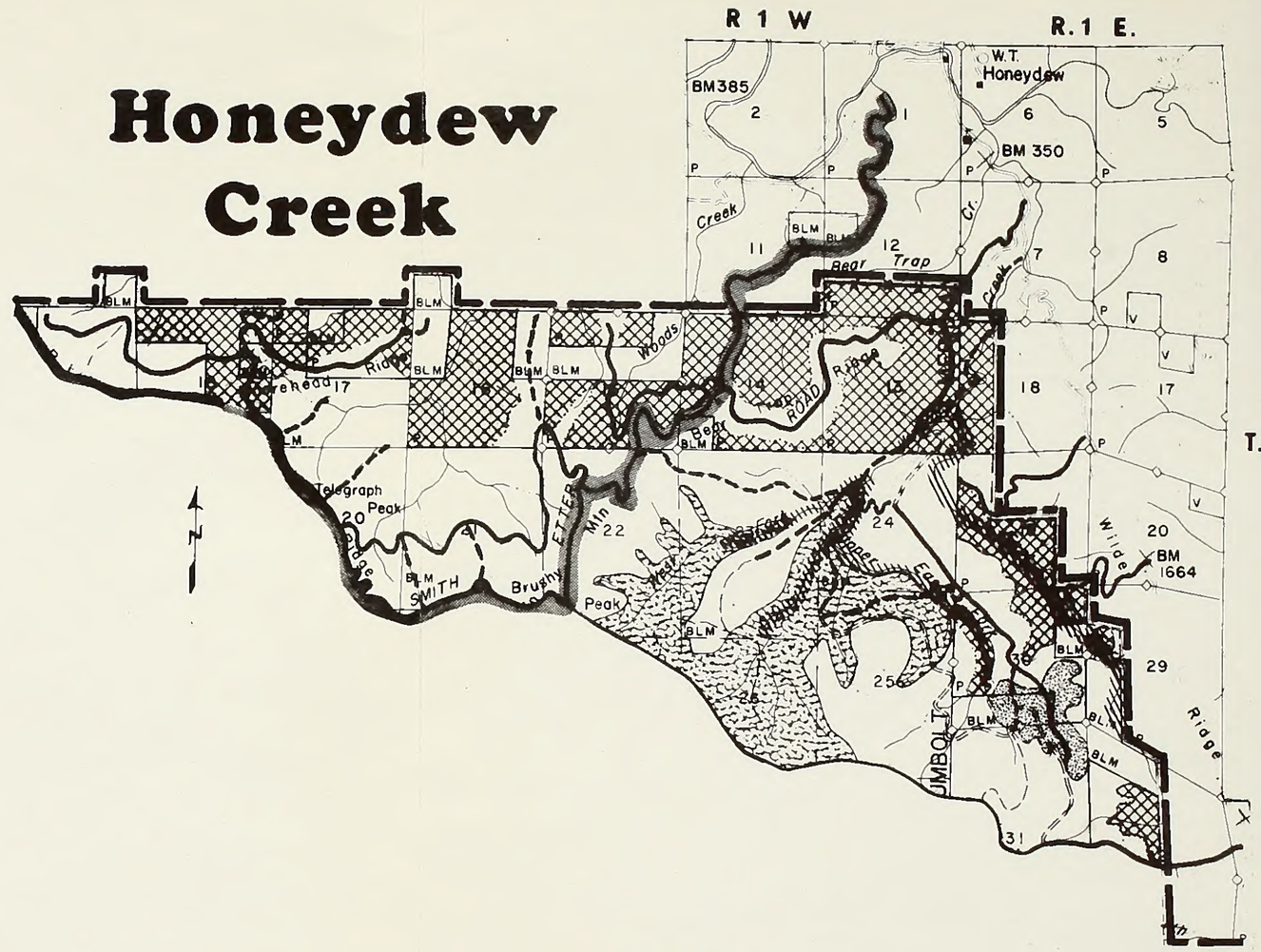
ZONE 4-PRIMARY USE-RECREATION

ZONE 5-PRIMARY USE-RESIDENTIAL

Bear Creek

K R N C A
ZONE 6 - PRIMARY USE
INTENSIVE TIMBER PRODUCTION

Honeydew Creek



PLANNED ACTIONS LEGEND

- RIGHT OF WAY ACQUISITION & ROAD CONSTRUCTION
- TRAIL CONSTRUCTION
- FENCE CONSTRUCTION
- REFORESTATION
- CONVERSION- BRUSH TO TIMBER
- PROTECTION CORRIDOR
- OLD GROWTH FOREST PRESERVATION
- STREAM REHABILITATION (FISHERIES)

KRNCA - ZONE 7

PRIMARY USE- WILDLIFE & FISH HABITAT

are very unstable, steep, gravelly, and subject to frequent surface movement. Woodlands are most commonly associated with these areas.

Riverwash, beaches, and dune land - this group consists of barren, or nearly barren, coarse-textured material subject to frequent shifting. Riverwash materials appear mostly in the form of sand, gravel, or cobblestone in stream channels away from the coast, along the coast on beaches and active sand dunes.

Rockland and rock outcrop - although there may be some very shallow soils, exposed bedrock and surface rock fragments cover most of this area.

Talus (Rubbleland) - these are sloping masses of rock fragments, accumulated mostly by rock fall at the base of a cliff or other weathering rock mass.

4. Air

Since the area is relatively remote, is adjacent to the ocean, and has little industrial development, air quality is excellent. There are no major point sources of emissions within or adjacent to the KRNCA. Vehicular traffic is light and,while no monitoring stations have been established, because of prevailing weather conditions it is doubtful that State standards are exceeded.

B. Living Components

1. Vegetation

The Pacific Coast Coniferous Forest biome is typified by a multitude of annual and perennial plants. In the King Range area, the biome is represented by three plant communities as described by Munz[1/]: Douglas Fir Forest, Northern Oak Woodland and Coastal Prairie. Much of the area is covered by Douglas fir stands, overtopping dense understories of oak, whitethorn, other chaparral species, huckleberry and annual forbs. Interspersed throughout these forest stands there are many large openings along high ridges and near the ocean. These openings are generally closely correlated with soil type. Vegetative composition within the openings is primarily perennial and annual forbs, grasses and lichens. The woodland type is comprised of a mixture of coastal hardwood species and chaparral.

Approximately 34,000 acres are in the Douglas Fir Forest. The Northern Oak Woodland type comprises over 7,000 acres. The Coastal Prairie type covers 2800 acres.

Because of the heavy precipitation (60" to 100") in the K.R.N.C.A., plant succession progresses rapidly. In old burns, Douglas fir overtops the seral chaparral species in about 20 years and quickly becomes dominant. Chaparral soils that are converted to grass also quickly revert to brush species.

2. Animals

Terrestrial Wildlife. Coastal communities provide a great deal of habitat for animals. The three plant communities recognized here (Douglas Fir Forest, Northern Oak Woodland, and Coast Prairie), harbor many mammals and birds. Some of these are: bald eagle, golden eagle, osprey, blue grouse, shore birds, black bear, flying squirrels, ring-tailed cats, river otter and black-tailed deer. Black-tailed deer are estimated at 100 head per

1/ Munz , Phillip, A., A California Flora, University of California Press, 1970.

square mile in some parts of the area. Eagles and osprey have been seen on many occasions and one osprey nest is known. Shore birds are numerous along the relatively remote coast. Brown pelicans have been seen in the area. Spotted owls, a threatened species, have been verified in the Douglas Fir Forest plant community. Detailed discussion of life history requirements, factors limiting populations and population data are found in the Unit Resource Analysis.

Fish. There are about 80 miles of streams with sufficient water for fish. The most important stream fish is the Pacific steelhead trout. There are also silver salmon and king salmon present. These anadromous fish use the streams for both hatching and rearing the young. Several of the Mattole River tributaries have resident rainbow trout also. All of the streams are free flowing but have some natural log jams and waterfalls which limit the passage of fish. Water quality for fish is excellent except in the areas of recent road construction where sediment levels have been increased significantly. More detailed information can be found in the Unit Resource Analysis.

Marine Wildlife. The relatively remote Pacific coastline provides habitat for several marine mammals: notably Steller and California sea lions and harbor seals. California gray whales and California right whales can be observed off-shore during their annual migrations.

Observers have identified one species of sponge, three species of anemones and corals, representatives of two genera of jellyfish, four species of starfish, and two sea urchins. The Mollusk phylum is represented by at least twelve species, while two species of barnacle and four crab species were identified.

Wildlife - Endangered Species

Endangered species that might have habitat in the King Range Area are the sea otter, spotted owl, brown pelican and peregrine falcon. Sea otter are reported to have been in the area in the past. However, recent studies indicate habitat requirements are marginal. The bald eagle has been seen in the vicinity, but no nests have been found.

Soil Organisms.

Soil organisms have a basic role in soil development in this coastal biome as well as they do in other biomes. The supply of organic matter is very high because of the relatively high amount of precipitation and the abundance of vegetation on most sites. The warm climate and great amount of moisture and humus allow microorganisms such as nematodes and protozoa to be very active. Thus, soils are developed rather fast, but since the area is quite young geologically the soils are still rather shallow and easily eroded.

3. Human Populations

The Shelter Cove subdivision contains several full-time residents (about 30 families) and an undetermined number of people live in the Whale Gulch area, (50-100). There are probably less than a dozen other full-time and seasonal residents scattered over the rest of the area. The total population in the K.R.N.C.A. is estimated to be 185. In the immediate influence zone, as defined in the economic analysis, the population is estimated to be 1,215. A more detailed discussion of demography and factors influencing economic well-being can be found in the Economic Analysis of the K.R.N.C.A. Proposed Management Plan and Program.

Since there are over 4,000 house lots in the Shelter Cove subdivision, it is estimated the family dwellings will continue to be built at a rate of 5 houses per year.

C. Ecological Interrelationships

The relationship between plant and animals is quite normal for the Pacific Coast biome. The beach is mostly quite remote from human activity. Several people walk the beach from Punta Gorda to Shelter Cove, but have caused slight disturbance to the driftwood, tidal pools, kelp beds or shoreline vegetation. Thus, the use of the beach and tidal waters has retained its critical balance between plant and animal life. Several shore birds, sea lions, seals, and many crustaceans utilize the beach and tidewater for feedings, shelter and reproduction. The kelp beds found near Big Flat, although not extensive enough to sustain any sea otter, are the habitat essential for the sea otter. To sustain sea otters, the kelp beds must be large and dense enough to provide the otters

protective cover from predators - large sea animals - and also provide sufficient nutrients to sustain the life-food chain to furnish crustaceans for sea otter food. The kelp beds at Big Flat are not presently sufficient to provide an adequate food chain to sustain sea otters.

At least one area has been identified in the Mattole River drainage as having a virgin stand of Douglas fir which creates the right combination of openings and forest to provide habitat for such animals as ring-tailed cats and flying squirrels, black bear and the threatened spotted owl.

Black-tailed deer populations are quite high in the coastal area of King Range. Population estimates are up to 100 per square mile. Browsing on shrubs is very noticeable and heavy use is indicated; Douglas fir seedlings have a difficult time getting established due to deer browsing and the young fir trees have clearly defined 'highlining'. This apparent over-population is due to two main factors. First, there are insufficient hunter access roads and trails for good harvest; and secondly, California law prohibits taking of antlerless deer.

Salmon and steelhead inhabit most of the streams, but silt and sediment caused by soil disturbances greatly affect spawning and rearing success due to the limited expanse of clean spawning gravel and clean rearing pools.

D. Aesthetics

The King Range Area has long been noted for its aesthetic qualities. The view of rugged mountains rising abruptly from the sea offers a scenic experience which is extremely rare along any coast. The more than 20 miles of undeveloped, nearly unroaded beach offers an experience of solitude which is also extremely rare along any coastline. The sounds on the West Slope are all the natural sounds of wind, waves and animals with the exception of the Shelter Cove subdivision where man's activities are encountered. The smells encountered range from those of marine tidelands to forested areas of hardwoods, conifers and shrubs.

East side views are those of forest and brush covered mountains interrupted by previously logged areas where rehabilitation was unsuccessful or not attempted. The scenic attributes of this area are not as high as on the West Slope. However, there are mountain streams which are relatively clear during summer seasons, scenic rock cliffs and large expanses of unbroken forest canopy.

E. Human Interest Values

The King Range Area is very interesting geologically, due to the relatively recent uplifting and still forming hills and slides. The thin soil mantle in the formation stages could serve a useful function in research on soil formation. Some threatened species of animals such as spotted owl and peregrine falcon can be observed in the area.

The King Range Area is also rich in archeological values. There are several known areas which hold remnants of coastal Indian cultures such as burial grounds, campsites and middens. There are some potential areas where further studies may uncover additional archeological values.

F. Environmental Disturbances

There has been considerable disturbance to the environment within the King Range boundary over the past several years.

1. Subdivision

Probably the most notable environmental impact is the Shelter Cove subdivision development. Many miles of surfaced road have been constructed on quite steep side slopes and in very unstable soil types. These actions by man have apparently triggered several land slides and slumps.

2. Logging

Much of the private land in the Mattole River drainage has been heavily logged. There are few buffer strips left along the streams and in many cases considerable damage has occurred directly in the stream channel. Streams are exposed to direct sunlight and have noticeable amounts of debris blocking water flow and fish movement.

3. Roads

Logging roads were often constructed very near the stream. This has caused substantial amounts of sediment to accumulate in several tributaries of the Mattole River.

4. Burning

For many years, ranchers along the north end of the King Range have practiced brush burning. This frequent (often annual) burning is intended to improve grazing. The practice has changed the ecologic balance of the area. Significant erosion has been caused on the slopes and increased sediment has been deposited.

5. Instability

Geologic information indicates that the area is relatively young geologically and that it is extremely unstable. Roads provide a good insight into the soil type and stability in general. Road cuts and fills are very slow to stabilize and require a great deal of maintenance. The visible scars remain for years. The Honeydew Road constructed by BLM in 1963-66, has caused some plainly visible cut banks, several slides and considerable movement of soil and debris into streams. It is just now becoming somewhat stabilized.

6. Land Slides

Some logging has occurred on the ocean side of the range. The visual scarring and apparent slow revegetation of these areas has left some clearly visible openings in the vegetative cover. These openings are readily seen from both the ridge top trail and some beach areas.

7. Mining

Mining activity has caused considerable disruption in certain places through both excavation at the mineral site and construction of access roads to the site. Again, the soil type and instability have resulted in visual impacts, loss of vegetative cover and apparent siltation and sedimentation in streams on the Mattole drainage.

8. Campgrounds

There are currently four developed campgrounds in the area and several miles of constructed trails. Use of these facilities is somewhat limited due to their remoteness and the lack of an intensive advertising campaign. However, there is doubtless some impact to the environment from the construction, maintenance and utilization of these improvements.

III. THE ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

The King Range Management Plan will implement the requirements of Public Law 91-476, an Act to establish the King Range National Conservation Area. The implementation of this plan will affect all phases of resource management in the King Range Area. It will also affect the local residents and landowners as well as the economy of Mendocino and Humboldt Counties.

A summary of economic impacts on the surrounding region is presented in Table 1. These are based on full implementation of the plan and its alternatives. The table permits comparison between alternatives within each of the potential income sources.

Land acquisition through purchase would result in removal of land from the property tax rolls. Consequently, land would be acquired by exchange where possible.

By the provisions of the King Range Act, all exchanges must be for properties within the same county. Since parcels exchanged would be approximately the same value, the net effect upon the tax rolls of an exchange should be negligible. However, when exchanges involve parcels in different school districts there would be a resulting redistribution of taxable property value between the districts. Additionally, when an exchange involves a non-timbered parcel exchanged to the government for a parcel covered by mature timber, there may within a few years be a net loss of the county tax rolls. This would result if the timber were harvested and the assessment of that parcel was subsequently reduced in accordance with California law.

A compensating factor would be the payments which go to the county when the BLM sells timber within the county. By law 5% of the sale price of timber from the BLM lands goes to the county. This may result in annual payments to Humboldt County in the amount of $12,000. The county and school districts may also gain tax revenues through increased assessments resulting from increased property values of lands adjacent to the government-owned lands. This could readily result as the benefits of the plan implementation begin to be realized. Permanent ownership tenure, land rehabilitation, fishery habitat improvement, improved access, and coordination of land use in the King Range National Conservation Area would yield spillover benefits, or external economies, to the private landowners and residents both inside the Area boundaries and those in the surrounding vicinity. Independent appraisal reports indicate that the passage of the King Range Act and the subsequent activities

TABLE 1

		Alternatives		
	The Plan	No Action	Environmental Preservation	Full Economic Utilization
Forestry-Annual Harvest	2.32 MMbf	Tot. 1.6 MMbf	Practically none	5.5 MMbf
Employment Generated	32 Man-Years	22 Man-Years		77 Man-Years
Livestock	1274 AUM's	1300 AUM's	500 to 700 AUM's	21,600 AUM's
Recreation Usage	Highest	Moderate	High	Low
Minerals	Restrictions or Regulate	Entry Permitted	Withdrawn	Full Util. Encouraged
Construction Expenditures	High	Moderate	Low	Highest
Brush Conv. & Land Rehab. Expenditures	High	Low	Moderate	Highest

have already resulted in a significant increase in some property values and assessments.

Mineral exploration and extraction has caused serious erosion problems in the past and will continue to cause problems due to the high erodibility of soil in much of the King Range Area.

The clearing of log jams from streams will cause increased siltation during the clearing operations.

A. Zone 1 - Punta Gorda

Motorized vehicle use of the 30' and 40' wide easement to Punta Gorda will have a detrimental effect on the surrounding private lands because of increased trespass due to the difficulty of keeping the public within the defined right-of-way. Motorized vehicles will also conflict with hikers using the same area. Limited control of increased public use may cause deterioration of cultural values such as Indian middens.

Livestock grazing in the immediate vicinity of the lighthouse will reduce the vegetative cover and cause unsightly trampled areas which will have a detrimental effect on the aesthetic qualities of the lighthouse site.

B. Zone 2 - West Slope

Restrictions on vehicles will have a detrimental effect on the enjoyment of the area by dune buggy and four-wheel drive enthusiasts.

Controlled livestock grazing and Roosevelt elk introduction will create some conflicts with deer use, since there is some overlap in forage species utilization.

The introduction of Roosevelt elk will have a possible detrimental effect on surrounding livestock ranches, if the elk stray onto the ranch property.

Prohibition of timber harvest in this zone and Zone 4 will have an impact on the annual allowable cut by reducing it from 4.8 MMbf to 1.3 MMbf. This will have some detrimental effect on potential local employment.

C. Zone 3 - Shelter Cove

The use of vehicles along the beach in this zone will conflict

with and disturb the enjoyment of those who use the beach for hiking or for picnicking.

D. Zone 4 - Point No Pass

As indicated under Zone 2, prohibition of timber harvest may reduce potential employment in the local forest products industry to some extent.

In the event of insect or disease epidemics proposed treatment measures might have an adverse impact upon primitive values.

E. Zone 5 - Whale Gulch

The only action proposed under the plan is possible land acquisition to extend the primitive area in Zone 4. No environmental impacts are anticipated, but a tract-by-tract analysis will be necessary.

F. Zone 6 - Bear Creek

Logging and associated road construction will have a detrimental effect on soil stability, vegetative cover, water quality, scenic qualities, wildlife and fisheries.

Controlled livestock grazing will conflict slightly with wildlife forage uses and may increase watershed damage.

Controlled off-road vehicle use will create some erosion problems.

G. Zone 7 - Honeydew Creek

Logging and associated road construction will have a detrimental effect on soil stability, vegetative cover, water quality, wildlife habitat and scenic qualities.

Controlled livestock grazing will conflict slightly with wildlife forage uses and may increase watershed damage.

Controlled off-road vehicle use will create some erosion problems.

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

The King Range Management Program identifies the resources available and how they can best be utilized for benefit to the

public. The actual use of such resources must comply with Bureau policy and procedures and each individual project must be reviewed to be sure that all requirements of the National Environmental Policy Act are met.

The following measures will be taken to mitigate environmental impacts.

Regulations will be formulated to protect aesthetic and watershed values from deterioration by mining activities. These regulations should give the Bureau the authority to control mining to the point of prohibiting such activity where environmental damage is likely to be severe.

Stream clearance and rehabilitation projects should be carried out at low stream flow and done without heavy equipment to reduce water pollution.

A. Zone 1 - Punta Gorda

1. Secure access by easement or purchase from the high tide line to the toe of the slope to allow hikers and vehicles use of the beach without conflict and allow protection of archeological values.

2. Fence the Punta Gorda Lighthouse area to keep livestock on the hillside and generally away from the parking, resting or stopping areas used by visitors.

B. Zone 2 - West Slope

1. Allow vehicles to the beach at the Smith-Etter Road for access purposes but do not allow them to drive on the beach either direction from that point. Stop vehicles coming from the Shelter Cove area on the south end of the beach near Gitchell Creek.

2. Implement an allotment management plan to indicate proper livestock carrying capacity to protect wildlife forage and watershed qualities.

3. Build fences to restrict Roosevelt elk to the selected area and prevent their encroachment on private grazing land.

C. Zone 3 - Shelter Cove

Designate the beach from Telegraph Creek to Gitchell Creek as a vehicle use area. Encourage hikers to use the adjacent road as access to the beach to the north. Designate the beach south of Telegraph Creek for non-vehicle use only.

D. Zone 4 - Point No Pass

Increased production resulting from intensive forest management in Zones 6 and 7 will help offset loss in timber production potential caused by designation of primitive area.

E. Zone 5 - Whale Gulch

None

F. Zones 6 and 7

1. Confine tractor logging to slopes under 40%

2. Use suspension or aerial logging on steep slopes with erodible soils.

3. Leave stream buffers to protect water quality.

4. Leave scenic buffers around recreation sites and along well traveled roads.

5. Use selective cutting where possible, or keep clear cuts small.

6. Determine the minimum amount of roads necessary through advance planning on-the-ground inspection.

7. Require end hauling of waste material on steep slopes and seed cutbanks and fill areas to reduce erosion.

8. Determine proper carrying capacity for livestock grazing.

9. Designate areas where off-road vehicles should be restricted to reduce erosion.

V. ADVERSE IMPACTS THAT CANNOT BE AVOIDED

To implement this management program, it is necessary to make some compromises in multiple use on specific areas, and to identify primary uses by zone to assure the compatibility of actions proposed. Thus an unavoidable adverse impact will be the loss of revenue and local employment caused by eliminating the possibility of harvesting the timber in zones 2 and 4 because such harvest is incompatible with the primary recreation use.

Several miles of beach useable by off-road vehicle enthusiasts will be closed to such use because it is incompatible with hikers, picnickers, wildlife and its habitat and general aesthetics. Several miles of beach presently unavailable to such users will be made available; thus, the net adverse impact is minimized by the mitigating measures.

Logging and road construction required to provide for sustained yield harvesting of timber and to assure adequate access for recreationists and hunters will cause some adverse impacts to the environment in the area. Noise will be significant during construction. Some soil erosion will occur causing an increase in stream sedimentation. Scenic qualities will be adversely affected by the appearance of cutover areas and road cuts and fills until they are adequately reforested and properly seeded.

VI. RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

The proposed management program is based upon the premise that land located within the various primary use zones will either be acquired by the government or be managed by private individuals in such a way as to be compatible with the primary use in the zone. The natural resources within the zones will then be generally managed on a long-term productivity basis. Using timber as an example, private landowners of small tracts will normally harvest as much production from the land as the law allows when the price is high and do as little as necessary toward reforestation. Where an area such as King Range is placed under long-range productivity much less timber is harvested during high prices, because the entire productive area is on a sustained yield basis and much of the income is placed back in reforestation to assure a continued production during all price stages and on into perpetuity. Thus, the short-term use or production will be reduced considerably, but the long-term productivity will be significantly increased

allowing for a stable growth industry.

The proposed action with its recognition of multiple use through designated primary use zones limits exploitation of natural resources on a short-term basis, but provides for assurance of continued availability of such resources for future generations.

VII. IRREVERSIBLE AND IRRETRIEVABLE IMPACTS AND COMMITMENTS OF RESOURCES

Implementation of the basic plan commits resources to tentative uses according to primary use zones, but it does not cause any irreversible and irretrievable impacts, since individual actions taken with the scope of the plan will be reviewed prior to action, and most will require a complete environmental analysis. The plan is also subject to periodic review and updating, so no irreversible commitment will result from plan implementation.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

A. No Action

This alternative would essentially maintain the status quo, as modified by continuation of present trends in land use and resource development. The land ownership pattern would be substantially unchanged, an intermingling of national resource lands with private ownerships. Actions would not be coordinated, but would take place in accordance with the objectives and capabilities of each individual landowner.

1. Environmental Impacts

The primary objective of most private landowners can be expected to be short-term profit maximization. In the past meeting this objective has resulted in extensive subdivision, road construction, essentially uncontrolled timber harvest, land clearing and burning. It can be anticipated that timber will be harvested as soon as it reaches merchantable size, that interest in subdividing would resume if the second-home market becomes firm again, and that land clearing and burning will continue.

Subdivisions for home construction require a considerable amount of road construction, road surfacing and homesite

leveling. Each of these actions causes increased sediment in streams, loss of soil, loss of retention of moisture, destruction of vegetation which cannot be replaced and visible breaks in the natural vegetation. Both animals and fish will be displaced due to the reduction of habitat.

Timber harvest and the subsequent roads and skid trails will increase sediment and cause soil loss particularly on the fragile West Slope. Very little revegetation occurs due to the necessity for long-term investment. Visual impact of full utilization harvesting is usually more severe than selective cutting.

Burning to remove brush to improve livestock forage causes smoke-filled air for several days each fall, increases soil loss to erosion, increases sediment in streams and tends to increase undesirable plant species such as poison oak. Burning also leaves large (several 100 acres) openings which cannot be most effectively utilized by wildlife except near the edge.

2. Mitigating Measures

Subdividing could be controlled by county ordinance limiting size of lot to at least 20 acres to keep the number of homes and roads to a low impact. Standards could be placed on the quality of road construction to require end haul materials, adequate drainage, downspouts on all fills and only gravel surfacing to allow for maximum water holding capacity.

Timber harvest can be regulated by state law to require certain logging methods on designated soils and slopes, leave trees for wildlife, limited size of clear cut areas, no stream damage, and revegetation within two years.

Burning to remove brush can be limited to very small patches (20 acres) or not allowed at all.

3. Adverse Impacts That Cannot Be Avoided

Subdivisions and individual road systems will cause visual impacts, some disruption of wildlife and at least short-term sediment increase.

Timber harvest to get maximum economic return for the individual landowner will cause short-term stream sediment increases, disruption of wildlife due to habitat change and visual impacts due to roads and cutover areas.

Burning causes visual impacts of both short- and long-term duration, disrupts wildlife due to causing large openings in cover and increases undesirable plant species.

4. Relationship Between Short-Term Use and Long-Term Productivity

The government-owned lands within the area will receive nearly the same intensity of resource utilization and protection as in the proposed action. However, private lands would primarily remain in private ownership and the short-term use would be much more intense. The cumulative effect of vegetative change through timber harvest, burning and road construction will disrupt many wildlife species. Especially vulnerable are those species that cannot tolerate close relationship to man, such as eagles and bears. Archeological sites will be excavated and many historic items could be destroyed.

5. Irreversible and Irretrievable Impacts and Commitment of Resources

Government-owned lands will continue to receive environmental protection through existing policies and statutory requirements, but the private lands may be subdivided, with surfaced access roads, sewage systems and leveled homesites, and may effectively commit the resource to that type of use. Displaced animals and ruined historic and archeological sites will have no further value.

B. Full Preservation of Environmental Quality

This alternative entails very limited utilization of the area's resources. Acquisition of private lands would proceed as rapidly as possible. Timber harvest would essentially be excluded. Grazing would be reduced to a level much below current use. Wildlife habitat improvement projects and stream clearance would be limited to those areas where physical access is presently available. No new recreational facilities would be developed, except possibly some primitive hiker-oriented facilities along trails and beaches. Off-road vehicle use would not be allowed. Mineral exploration would be discouraged. No new road construction would be allowed

and many of the existing roads and four-wheel drive trails would be closed and revegetated.

1. Environmental Impacts

To preserve environmental quality the Bureau could designate the entire area with recreation as the primary use. The utilization of all other resources would necessarily be very minimal since one of the recognized values of the area is its remote, back country character. Development of any type could detract from this primary recreation value. No additional roads would be built; several in existence would be closed and revegetated. Vehicles would not be allowed off roads or along beaches. Campgrounds would be left as currently developed, trails would be kept nearly as they now exist. Timber harvest would not be allowed, since soils are quite thin and fragile and cutover areas do detract from aesthetics on a short-term basis. Grazing would be greatly curtailed. No projects would be allowed to convert brush to grass for improving grazing, wildlife habitat or watershed. Revegetation would be initiated on all cutover or cleared areas.

All actions would be directed toward mitigating the current environmental disruptions on both the present private ownerships and national resource lands. Ecological relationships and human interest values, such as archeologic and historic sites, would receive maximum protection.

Economic effects and impacts upon the area's infrastructure would be greater, at least in the short-term, than any other alternative. While the loss cannot be quantified, some decrease in employment would be probable.

2. Mitigating Measures

Since the primary objective is to protect the environment and keep the area in its most natural state for aesthetics and recreation, there would be little additional mitigation. The immediate acquisition of all private land within the area and the closing of many roads would be possible, as would the revegetation of cutover or burned areas to keep the cover in an apparent natural state for an ecological balance.

Designating primary use zones and developing compatible use criteria for each zone could also provide protection of resources and assist in protecting the environment.

3. Adverse Impacts That Cannot Be Avoided

There would be no adverse physical environmental impacts which could not be avoided if the entire area were managed for preserving the environmental quality. However, the adverse impacts on local employment and the economy could be significant if the resources were not utilized.

4. Relationship Between Short-Term Use and Long-Term Productivity

The cumulative long-term impact of this alternative proposal in conjunction with similar projects, such as federal, state and county parks, will insure long-term productivity of the natural resources and especially their biological interrelationship because of protection and enhancement proposed. The short-term use would be severely limited and essentially no economic utilization would be allowed. Such limitations would be detrimental to the local economy on a short-term basis.

5. Irreversible and Irretrievable Impacts and Commitments of Resources

There would be no apparent commitment of resources which would be irreversible and irretrievable under this alternative. Since the alternative is basically preservation-oriented, the option of increasing resource use and production would remain open

C. Maximum Utilization

This alternative is based upon short-term maximization of resource use. In some cases, long-term ecosystem productivity would be lessened. Timber would be harvested on all timber producing sites. At least 25,000 acres have a potential for intensive timber management, including extensive clearcutting, vegetative conversion, reforestation, fertilization, and construction of a high standard road system. Grazing use would be increased by converting brush sites to grass and development of extensive cross-fencing. Several additional campgrounds would be developed with surfaced access roads and parking facilities. Off-road vehicle areas would be developed along ridge trails as well as portions of the beaches. Streams would be cleared of log jams and road access would be provided for fishermen. Type conversion for improvement of wildlife habitat and development of a high-density network of access roads and four-wheel drive trails

would improve hunter success. Mineral exploration would be encouraged in all areas.

1. Environmental Impacts

Timber harvest maximization on 25,000 acres would have some significant impacts on the environment. Many areas included in this acreage are extremely steep (over 80% slope) and have relatively shallow soils which are highly erodible. Also many of the areas are clearly visible from roads, trails and beaches. Some virgin stands harbor unusual animals that would be displaced or killed if the timber is harvested. Some rare plant communities will likely be destroyed at some stage of intensive forest management. Such management would require at least 20 miles of additional road construction plus improvement of 30-40 miles of existing road in various stages of disrepair.

Conversion of brush to grass to improve grazing and increase water yield would disrupt the habitat of many animals, cause large openings that would extend beyond the reach of animals requiring edge effect and leave large areas (several 100 acres) of solid, unbroken grass fields. Fences in several locations would be aesthetically displeasing.

Campgrounds with large surfaced parking lots, trailer turn-arounds and sewage disposal facilities will require removal of much vegetation, thus taking away much of the natural beauty around the now primitive campgrounds.

Off-road vehicles utilizing the old logging roads, trails and many grassy slopes could cause noise pollution, air pollution, accelerated soil erosion and hazards to hikers. Wildlife, such as eagles and ospreys, would be harassed to the point of abandoning the area.

Stream clearing and wildlife habitat projects will cause increased sediment in streams for a short period, but should not have extended effects, except for visual changes.

Mineral development will leave mine shafts, tailing piles, roads and will increase stream sediment loads.

2. Mitigating Measures

Timber harvest could be done by skyline or helicopter in the steeper and most fragile soils. Cutting areas can be kept small (20 acres per clearcut), and spaced over a period of years to assure that two clearcut areas do not join at any time. Requiring revegetation within two years after cutting would minimize soil loss and visual impact. Other measures include: seeding of all roads between periods of use, selective cutting wherever possible, leaving buffer screens for trails, roads and streams. Sufficient dead topped trees could be left standing to provide required raptor habitat needs. Some virgin stands of timber could be saved for unusual animal habitat.

Brush conversion projects can be designed to reduce undesirable visual impacts by controlling the size and shape. They should be kept small (20-30 acres) and narrow to assure maximum edge effect. Fencing could be screened from view in most places.

Campground design could be carefully controlled to be sure it blends with the natural environment wherever possible.

Off-road vehicle use areas could be clearly designated and some specific developments made to accommodate parking and use. Raptor use areas can be identified and such areas closed to off-road vehicle use.

Stream clearing and wildlife habitat projects can be timed so they have the least effect on anadromous fish.

Mineral development can have specific lease stipulations included for stream protection and rehabilitation requirements.

3. Adverse Impacts That Cannot Be Avoided

Timber harvest will require construction of many roads. Visible changes in the landscape will occur wherever cutting takes place. Sediment will increase in streams and some disruption of wildlife will occur during operations and shortly thereafter.

Brush conversion and fencing would cause very little impact if carefully planned and designed.

Campgrounds, parking lots and additional access roads will leave visible changes in vegetation and cause some increased sediment in streams at least on a short-term basis.

Off-road vehicles will cause both short-term noise and dust increases, and long-term erosion damage on some soils.

IX. CONSULTATION AND COORDINATION WITH OTHERS

A. Public Input

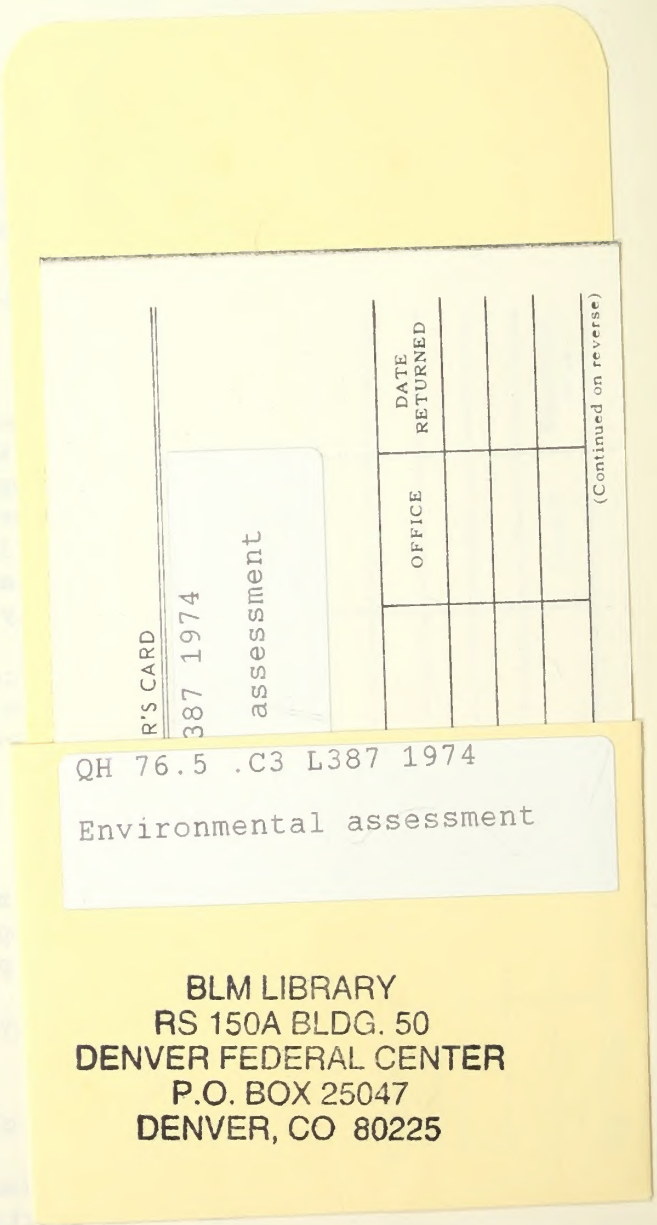
The King Range National Conservation Area is the first national resource lands area to be so designated. This special legislation will be very influential in subsequent special area designations. Some provisions of this Act, such as land exchange authorization, have direct economic impacts at the local and regional level. Public interest is quite intense in the region near King Range. Local governmental agencies have direct interest in the plans and management of the resources.

In response to public meetings and publication of management recommendations for the King Range Area, 91 individual letters plus 6 petitions bearing 181 signatures were received. Seven public meetings were held with a total of 345 people attending. Most of the letters had specific suggestions for changes in the proposed actions. Discussions at the public meetings were very lively.

The most common item of controversy is whether or not to allow dune buggies to use the beach. Off-road vehicle enthusiasts believe the entire beach area should be left open for dune buggy use. On the other hand, preservationists believe that the entire beach should be closed to all motorized vehicles.

Concerned organizations include all the national conservation groups and some user groups. All of the following have requested changes in the proposed management program:

Nature Conservancy
Sierra Club
Audubon Society
Four-Wheel Drive clubs
Motorcycle clubs
Some local organizations
- Eel River Sportsman's Club
- North Coast Rivers Association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B. Government Agencies, Groups and Individuals Consulted

Government agencies directly consulted at each level of inventory, analysis and planning include:

U.S. Bureau of Outdoor Recreation
U.S. Geological Survey
U.S. Soil Conservation Service
U.S. Bureau of Sport Fisheries and Wildlife
California Department of Parks and Recreation
California Department of Fish and Game
California Department of Water Resources
California Division of Forestry
California Regional Water Quality Control Board
Humboldt County Board of Supervisors
Mendocino County Board of Supervisors
Northern Region California Coastal Zone Conservation Commission
Humboldt Bay, Harbor, Recreation and Conservation District

Persons and groups directly consulted at each level of inventory, analysis and planning include:

Redwood Section - Sierra Club
Nature Conservancy
Humboldt Four-Wheel Drive Association
Humboldt State University
Dr. Dave Stevenson
Mr. Key Roscoe
Mr. Robert McKee
Mr. William Brown
Mr. Mal Coombs